Palouse Prairie Flyer

Newsletter of the Palouse Prairie Foundation
Fall 2023

The Delightful Palouse Fall

Hawthorn color and blue sky!

Here's what's included in this edition of your newsletter:

Palouse Prairie Foundation

Promoting preservation and restoration of the Palouse Prairie ecosystem

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The Fascinating History of Whelan Cemetery

By Joan Folwell

Christopher C. Branham came to the Palouse Country with big ambitions and the means to accomplish them. He was born in Cook County, Illinois, on May 5, 1836. His life's journey took him first to Iowa and then to Kansas where he met and married Rachel Riley in 1857. Subsequently, the couple moved to the Washington Territory in 1877 with their four children: Adeline, Emily, Mary, and John. He was regarded as a highly successful farmer all his life.

Branham heard that the Northern Pacific Railroad was planning to build a route just north of Pullman. He submitted a plat for the town of Branham to be located adjacent to the route. He proposed a 160-acre site shaped like a triangle with the longest side adjacent to the tracks. The plat showed 75 lots and the location of the train depot. Streets running north and south were named Elder, Oak, Chestnut, and Walnut; streets running east and west were named Fulton, Market, Railroad, and Wall. The plat included 1/2 acre of land located at the southeast tip of the town dedicated to a cemetery. The plat was approved by Whitman County on December 1, 1887. The stage was set for progress!

Before his efforts could be realized, Branham died of "spinal fever" (meningitis) on February 23, 1888; he was fifty-one years old. His seventeen-year-old son John quickly succumbed to the same disease on March 24, 1888. They are both memorialized by one of the more ornate monuments in Whelan Cemetery. Branham had prepared no final will and testament. His estate was probated in Whitman County. The court declared that his wife Rachel be the "administratrix" of his estate on May 7, 1888.

Photo 1: Christopher Branham, founder of the town of Branham, renamed Whelan. Photo 2: John Branham, son of Christopher.

There was another town already named Branham in Whatcom County, Washington; this presented a cause for confusion for the postal service. The Northern Pacific Railroad site-naming office decided to change the name of Branham to Whelan. By this time, Rachel Branham had sold the property to Arch C. Loucks who immediately sold it to David R. Judson. Whelan was established officially on March 20, 1890. The new name was the last name of a construction engineer employed by the railroad. An attempt to grow the town was made. Branham School, a log structure, had been erected by 1884. A general store was built and housed the Whelan post office. Ultimately, the Northern Pacific Railroad decided to build the main line through Pullman. Some say that the railroad construction engineers had been given "significant honorariums" to locate the mainline through Pullman. While many settlers were attracted by the fertile soil to the Palouse area, efforts to grow Whelan failed. The post office was discontinued on July 12, 1895,

and the mail was sent to Pullman instead. Long ago, the wooden structures that signified the town of Whelan succumbed to time and nature.

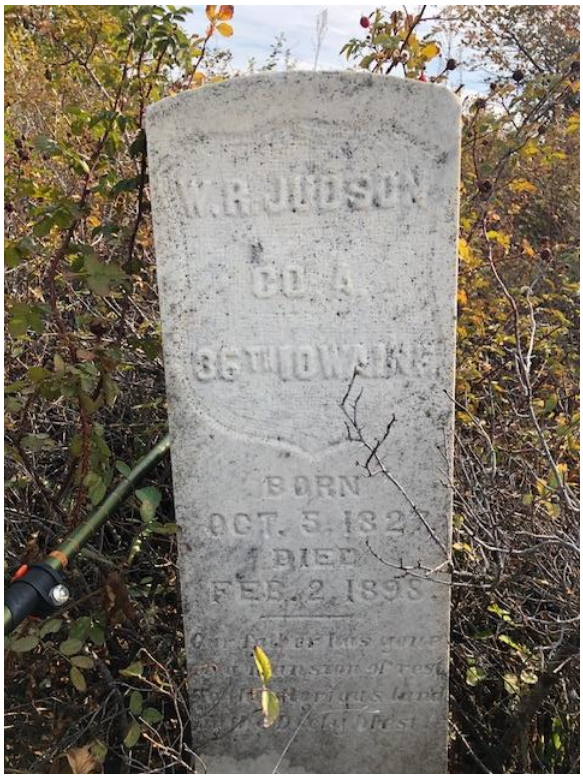

Photo 3: W.R. Judson served in the Civil War.

Photo 4: Judson family headstone. Photos by Joan Folwell.

In 1895, land was added to Whelan Cemetery. The original 1/2 acre site in Branham was located on the southeast corner of Section 15, Township 15 N, Range 45. Three landowners having land in the southwest corner of Section 14, the northeast corner of Section 22, and the northwest corner of Section 23 adjacent to the cemetery each donated ½ acre. Thereby, the cemetery's size increased to two acres.

Burials continued regularly until 1945. Many early pioneers of this area are buried in the cemetery. Members of the Judson family who owned the general store and managed the post office found their final resting places there.

Currently, there is no official administrative entity – no city, county, or cemetery district – that claims responsibility for the cemetery. It has been formally deemed abandoned. But the legacy of Whelan Cemetery remains. Never having been disturbed by a plow, it is a prime example of the native Palouse Prairie hosting over 150 species of plants to delight and to educate the visitors of today.

Whelan Cemetery in springtime. Photo Tom Besser

Palouse Prairie Restoration Round-Table Talk

By David Herbold

On July 19th 2023, a group of 20 people managing Palouse Prairie remnants and/or Prairie reconstructions came together at Tom Besser and Kathy Potter's house for the inaugural round table. After an introduction that included highlights, headaches and things people are looking forward to in their prairie projects, we had a round-table where everyone had a chance to ask questions and share. The hosts (proud prairie parents) Tom and Kathy led us on a walk of their 3.5-acre site that is in its 6th growing year (seeded in the Fall of 2017). We saw how the Besser-Potters have marked their site to monitor for the good, the bad and the invasive.

Tom and Kathy's restoration in 2019. Photo Brenda Erhardt

All who attended were invited to join the already up and running White Pine Restoration group, which is an online forum where you can ask questions and share information about your site with others.

The plan is to continue hosting events that give those stewarding prairie remnants, reconstructions and gardens a forum where we can share, learn and support each other. We are planning on hosting an indoor event this winter focusing on projects for the coming growing season.

If you would like to be added to the WP-restoration group please e-mail Nancy nmiller@moscow.com or David Herbold by e-mail at davidherb@yahoo.com

If you would like to keep informed about the next gathering of Restoration-Round Table aka Palouse Prairie Keepers Coffee Talk please e-mail David Herbold @ davidherb@yahoo.com and I will keep you informed about the next gathering.

Biological Control Agents

By Shelley Chambers Fox

This year has been a bumper year for rush skeletonweed in Whitman County. I sprayed the rosettes on our Prairie remnant with clopyralid this April and May but there were plenty of plants that evaded me. As I look at the remnant, rush skeletonweed is all I see. Pulling them is not advised. What to do? A friend suggested that I consider biological control agents. Where do you buy biological control agents and when do you apply them? This article is a summary of what I learned about these weed management tools.

Photo 1: Rush skeletonweed infestation in a Prairie remnant

Photo 2: Rush skeletonweed on the roadside.

The agents available for rush skeletonweed are typical of biological control agents in general. The first biocontrol agent introduced for rush skeletonweed, the Italian rust fungus (*Puccinia chondrillina*) was released in the Pacific Northwest in 1976. It is considered established in Washington, Idaho, Oregon, Montana, Wyoming and California although its effectiveness varies by rust strain, weed genotype and site conditions. Skeletonweed genotype 2 is resistant to both strains of fungus, genotype 1 is resistant to one strain of the fungus but not the other and genotype 3 is susceptible to both strains. The rust is considered the most effective biological control agent in Washington and California, but less effective in Idaho, Montana and Oregon. Fungal infection of plant tissue reduces the weed's ability to photosynthesize and store nutrients in the roots, leading to plant weakening and death. Infested plant materials releasing spores are introduced into weed sites between May and June. See Table 1.

The rush skeletonweed gall mite (*Aceria chondrillae* AKA *Eriophyes chondrillae*) was released in the Pacific Northwest in 1978. (photo 3) The adult mites or infested plant material can be released on weed sites between June and August, and the populations will increase until the skeletonweed dies back in the winter. Mite feeding stunts growth and reduces rosette formation and seed production. The mites attack 3 of the 4 main genotypes of rush skeletonweed producing a 50 to 90% reduction in weed density once established. Mites spread with wind-dispersed seeds and are considered established in Washington, Idaho, Oregon, Montana, Wyoming and California. However, efficacy is limited in California due to

predation and in some sites in Idaho due to high losses during the winter.

Rush skeletonweed root moth (*Bradyrrhoa gilveolella*) was released in Idaho in 2002 and subsequently in other western states. So far it has established only in Idaho and Oregon and is still increasing in population at the original release sites. Although its impact has been limited so far, the moths have produced dramatic rush skeletonweed reductions in one site. The larvae feed on roots and diminish plant vigor, which reduces plant density over time. The adult moths can be released on infested sites between June and August. It is presently not available in Washington.

Rush skeletonweed gall midge (*Cystiphora schmidti*) was released in the Pacific Northwest in 1978. It is considered established in Washington, Idaho, Oregon, Montana, Wyoming and California, and all genotypes of rush skeletonweed are susceptible to gall midge larval damage. Adult gall midges or infested plant materials can be released at weed sites between June and August. Larvae feed on stems and leaves inducing raised circular galls that injure or destroy plant tissue and result in fewer viable seeds and less rush skeletonweed spread. The gall midge populations have been small due to high rates of predation and parasitism such that the larval impact is significant, though less than 90% reduction in rush skeletonweed seed production occurs.

Biological control agents are an example of a management strategy that uses a weed's natural enemies to control it. Most of the noxious weeds in the United States are from other continents so that the natural enemy must be intentionally introduced. Biological control agents are extensively studied before they are introduced to ensure that they will not have off-target effects on non-weed plants. While most bio-control agents are insects, they can include mites, nematodes and pathogens. They are particularly well suited for heavily infested sites where other control methods are not feasible. Biological control agents do not eradicate an entire infestation but do weaken weeds so desirable plants can compete. It can take several years for the bio-control population to reach levels that effectively control their targets. And then after a weed has been controlled, the infestation may rebound. Usually, the established biological control population will regain control after several years. Debra Jepson from the USDA Animal and Plant Health Inspection Service advises that infested plant materials be moved from areas of high impact to areas where the biological control agents have not yet been active.

Landowners interested in using biological control agents can contact their extension agent or county weed control board or the agency that provides the agents. In Washington biological control agents are available through the Integrated Weed Control Project at Washington State University and are offered free of charge to landowners. Jennifer Andreas, project director at WSU, advises that owners work with their local county weed control board requesting the biological agent of interest in February to ensure that the agent can be collected from field sites and made available at the appropriate release time. In Idaho the Nez Perce Tribe operates a Bio-Control program that raises the agents on site and provides them to landowners on request free of charge. Paul Brusven, bio-control coordinator at the Nez Perce program, advises that agents be requested by email or phone rather than the through the agency website. (pbrusven@nezperce.org, 208-843-9374) Requests should be made 4 weeks in advance of release times. Both project directors note that the biological agents are fragile and must be released within a week of delivery.

Table 1: Biological Control Agents in the Pacific Northwest

Weed	Bio-control agent	Release timing
Bull thistle (*Cirsium vulgare*)	*Urophora stylata*	Nov-Mar
Canada Thistle (*Cirsium arvense*)	*Ceutorhynchus litura* *Urophora cardui*	Apr-May Oct-Nov
Diffuse knapweed (*Centaurea diffusa)*	*Agapeta zoegana* *Bangasternus fausti* *Cyphocleonus achates*	July June-July Aug-Sept

	Larinua minutus *Sphenoptera jugoslavica*	June-July June-July
Field bindweed (*Convolvulus arvensis)*	*Aceria malherbae* *Tyla luctosa*	June-Sept June-Sept
Houndstongue (*Cynoglossum officinale)*	*Mogulones crucifer*	Not approved for release in the US
Leafy spurge (*Euphorbia* esula)	Aphthona spp, Oberea erythrocephala	June-July June-July
Meadow knapweed (*Centaurea pratensis)*	Larinus obtusus	June-July
Mediterranean sage (*Salvia aethiopis)*	Phrydiuchus tau	July, Oct-Nov
Poison hemlock (*Conium maculatum)*	Agonopterix alstromeriana	
Puncturevine (*Tribulus terrestris*)	Microlarinus lareynii Microlarinus lypriformis	Aug-Sept
Purple loosestrife (*Lythrum salicaria)*	Galerucella spp. Hylobius tranversovittatus Nanophyes marmoratus	May, July July-Aug July
Rush skeletonweed (*Chondrilla juncea)*	Aceria chondrillae (mite) Bradyrrhoa gilveolella, Cystophora schmidti (midge) Puccinia chondrillina (fungus)	June-Aug July-Aug June-Aug May-June
Saltcedar (*Tamarix spp*)	Diorrhabda carinulata	July-Aug
Scotch broom (*Cytisus scoparius*)	Bruchidius villosus Exapion fuscirostre	May-June Apr-May
Spotted knapweed (*Centaurea biebersteinii)*	Agapeta zoegana Chaetorellia acrolophi Terellia virens Cyphocleonus achates Larinus minutus Larinus obtusus Urophora affinis Urophora quadrifasciata	July June-July June-July Aug-Sept June-July June-July June Aug June-Aug
St Johnswort (*Hypericum perforatum)*	Agrilus hyperici Aplocera plagiata Chrysolina spp.	June-July June-July June-July
Tansy ragwort (*Jacobaea vulgaris*)	Botanophila seneciella Longitarsus jacobaeae Tyria jacobaeae	Aug Oct-Nov June-July
Toadflax spp Dalmatian toadflax *(Linaria dalmatica ssp)* Yellow toadflax (*Linaria vulgaris*)	Brachypterolus pulcarius Calophasia lunula Mecinus janthiniformis Mecinus janthinus Rhinusa linariae Rhinusa pilosa Eteobalea spp.	May-July midMay-midJune, midJuly-midSept May-June May-June May-Sept Apr-Sept Late spring-midsummer
Yellow starthistle (*Centaurea*	Bangasternus orientalis	May-June

solstititalis)	Chaetorellia australis, Eustenopus villosus, Larinus curtus, Puccinis jaceae var solstitialis, Urophora sirunaseva	May-June June-July July-Aug May-June

Timing information from References 1 and 2

References

1. North American Invasive Species Management Association Biocontrol fact sheets, accessed at https://naisma.org/naisma-resources/biocontrol/biocontrol-factsheets/ on September 25, 2023.
2. Biological Control of Noxious Weeds in Oregon accessed at https://www.oregon.gov/oda/shared/Documents/Publications/Weeds/BiocontrolBrochure.pdf on September 20, 2023.
3. Jennifer Andreas, Project Director, WSU Integrated Weed Control Project, Personal communication, September 19, 2023, (253) 445-4657.
4. Paul Brusven, Project Coordinator, Nez Perce Bio-Control, Personal Communication, September 6, 2023. 208-843-9374.
5. Debra Jepson, USDA Animal and Plant Health Inspection Service, Spokane Office, Personal Communication, September 28, 2023, 509-590-7243.

Photo 3: Rush skeletonweed gall mite September 2023.

An overview of Palouse Prairie Foundation mini-grants

By David Hall

In 2008, the Palouse Prairie Foundation initiated a mini-grant program to promote the conservation and restoration of Palouse Prairie and to raise public awareness of this endangered ecosystem. The mini-grant program provides grants up to $1,000 to those interested in and supporting the conservation and restoration of Palouse Prairie.

Mini-grants PPF has awarded include the following.

- Support two restoration projects on private property in the Viola area, one on Paradise Ridge, and one near Mary Minerva McCroskey State Park. Funds to help restore 1/2 acre of Palouse Prairie along the Latah Trail (the John Crock Pollinator Garden). Re-seeding of the Maynard Fosberg Conservation Farm Palouse Prairie restoration site. The Phoenix Conservancy, *Growing Palouse Prairie's Future: Optimizing Palouse Prairie Restoration Through Large-Scale Native Seedling Cultivation*, to grow and plant 10,000 seedlings on a total of 10 acres of restoration sites in Pullman.
- Support prairie plantings at UI Theopholis Tower, Appaloosa Museum and Heritage Center, the U.S. Forest Service Research Station, and a native plant garden on the Moscow High School grounds.
- Support genetic research on the giant Palouse earthworm; lab costs for positive eDNA identification of the worm
- Moscow Charter School study of water-reduction aspects of using native plants
- Travel expenses to study camas.
- Purchase two botanical references needed to continue work with the Steptoe Butte flora project
- Juliaetta Elementary School, educating children about the importance of preservation, conservation, and restoration.
- Fund creation of a native plants trail and signage at Virgil Phillips Farm.
- Funds to help show the film *Hometown Habitat* and the Ted Talk by *Marla Spivak: Why Bees are Disappearing* at the Pollinator Summit
- Support the Paradise Ridge Defense Coalition in their efforts to keep the U.S. Highway 95 realignment south of Moscow proposed by the Idaho Transportation Department and the Federal Highway Administration further away from high-quality Palouse Prairie remnants on Paradise Ridge.

Interested parties can find the application form for PPF mini-grants on our web site.

Are You Eligible for a Mini-Grant?

The Palouse Prairie Foundation (PPF) is a nonprofit organization whose mission is to promote the preservation and restoration of native Palouse Prairie ecosystems in Whitman County, Washington, and Latah County, Idaho. To this end, PPF supports the following efforts:

- Raising public awareness about issues threatening the prairie and opportunities to conserve it.
- Developing educational materials and curricula for prairie conservation.
- Conduct research regarding the prairie.
- Restoring degraded local prairieland.
- Increasing seed availability for use in local prairie restoration.

The Palouse Prairie once extended over hundreds of thousands of acres. The region's deep fertile soils supported such highly productive agriculture that it was converted to cropland beginning in the 1800s, and less than one percent of the original prairie remains in native plants today. The rare remnant patches of prairie continue to harbor native plants that serve as seed sources, including rare species such as Spalding's catchfly (*Silene spaldingii)*, Jessica's aster (*Aster jessicae*), and Palouse thistle (*Cirsium brevifolium*). In addition, the remnants provide superlative carbon sequestration; excellent pollinator habitat; and habitat for rare animals such as the giant Palouse earthworm (*Driloleirus americanus*). Many people value its intrinsic beauty. PPF is committed to helping individuals and organizations to conserve and restore these prairie remnants to increase habitat connectivity and long-term sustainability of the ecosystem.

PPF has a mini-grant program available to the public for the conservation and restoration of Palouse Prairie. The maximum grant is $1,000. Visit the PPF web site (PalousePrairie.org) for information about some of the mini-grants that have been awarded and how to apply.

To apply, submit the following information to secretary@palouseprairie.org or mail to Palouse Prairie Foundation, P.O. Box 8952, Moscow, ID 83843.

1. Organization name.
2. Organization mailing address.
3. Name, email address, and phone number of primary contact person.
4. Description of the proposal, including the following information:
    a. Description of the project and how it supports the mission of PPF.
    b. Approximate start and end dates and significant stages of project progress.
    c. Requested funding level, maximum $1,000.
    d. Proposed budget, including a short list of budget items.
5. If this application is part of a larger proposal or project with another funding source, briefly describe.

2023 Palouse Prairie Foundation Membership

PRESERVE – PROTECT – PROMOTE

Why should you support the Palouse Prairie Foundation with your 2023 membership?

In 2022, the Palouse Prairie Foundation:

- Conducted a weeding party at Whelan Cemetery with the participation of The Phoenix Conservancy and other great volunteers; continued the removal and surveillance of invading lilac bushes partially funded by a Washington Native Plant Society grant; supported the successful award of a three-year grant to the Palouse Conservation District to continue maintenance of the on-site Spalding's catchfly *(Silene spaldingii*) population.
- Continued to develop the John Crock Native Plant and Pollinator Garden along the Latah Trail by controlling weeds; planted 225 native forbs and scattered native plant seeds mostly donated by Thorn Creek Native Seed Farm with the efforts of Elisabeth Brackney and other board members and volunteers; monitored the development of previously planted shrubs and native grasses.
- Awarded a $1,000 mini-grant to The Phoenix Conservancy for material to grow forbs for native planting sites in Pullman; awarded a $1,000 grant to the Appaloosa Horse and Heritage Center for signage at their public native garden display.
- Provided outreach to Eastern Washington University and Washington State University graduate students and researchers and allowed soil sample collection from Whelan Cemetery to compare the influence on growing wheat between native soil and various farmed soils.

Your support of PPF is a direct benefit to **YOU**:

- Receive invitations to local-area field trips.
- Get direct access to the expertise and experience of other restorers and protectors of the Prairie.
- Participate in the activity of your choice to help preserve this important ecosystem.
- The Palouse Prairie Foundation is a 501(c)(3) non-profit organization, and **donations are tax deductible**.

Email messages are the primary way that members are notified of all events and news. Please pay online via credit card or PayPal, or provide the membership information requested below and send it with your payment to:

Palouse Prairie Foundation, P.O. Box 8952, Moscow, Idaho 83843-1452.

THANK YOU!

Membership Information

Name _____

Street Address _____

City, State, Zip _____

E-mail Address _____

_____

[ ] Student	$10
[ ] Individual	$20
[ ] Family	$35
[ ] Lifetime	$250
[ ] Donation	$_____
TOTAL ENCLOSED	$_____

I'm interested in: [ ] John Crock Garden [ ] Whelan Cemetery [ ] Other_____