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Natural Resources Conservation Service

The Pullman Plant Materials Center

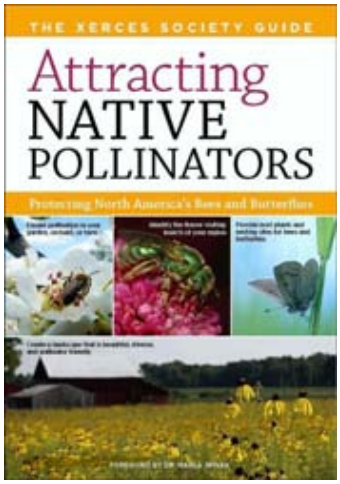
The Sweep Net

April 2011

A newsletter to keep you up-to-date on pollinator and beneficial insect activities at the Pullman Plant Materials Center, the Washington NRCS State Office and beyond.

Eggs of the red admiral butterfly (*Vanessa atalanta*). David James

New Pollinator Books



The Xerces Society recently published a very beautiful and useful book: **Attracting Native Pollinators**. Authors are Eric Mader, Matthew Shepherd, Mace Vaughan, and Scott Hoffman Black, all of the Xerces Society, and Gretchen LeBuhn of San Francisco State University. The book is the only one of its kind, and will be the go-to reference for pollinator conservation. It is divided into four sections: Pollinators and Pollination, Taking Action, Bees of North America, and Creating a Pollinator-Friendly Landscape. All Field Offices and pollinator enthusiasts should have a copy of this book! It is available at: http://www.xerces.org/announcing-the-publication-of-attracting-native-pollinators/.

Another timely book will be published this fall: **Life Histories of Cascadia Butterflies**. Authors are Dr. David James, Associate Professor of Entomology at WSU Prosser, and David Nunnallee, cofounder of the Washington Butterfly Association. According to the book announcement, "Life Histories of Cascadia Butterflies is a unique volume in the history of books dealing with Lepidoptera. For the first time in North America (and most of the world), the life histories of the entire butterfly fauna of a geographic region are presented in exceptional and riveting detail, both photographically and biologically. High quality photographs of every stage (egg, every larval instar, pupa, adult) of virtually all of the 158 butterfly species occurring in Cascadia (southern BC, WA, ID, northern OR) grace the pages of this book. In addition, an extraordinary wealth of new information on the biology, ecology and rearing of all of these species is also provided." To receive notification when this book is published, send an e-mail with "butterflies" in the subject line to osu.press@oregonstate.edu.

Egg of the California sister butterfly (*Adelpha californica*). David James

Attraction of Beneficial Insects to Native Plants in the Yakima Valley

Dr. David James recently led another endeavor: selecting plants for refugia plantings around vineyards to enhance biological control of pests. This project is part of a long-term research and extension program (funded by WSARE, NSCFR and the Washington wine grape industry) focusing on native habitat restoration in central Washington vineyards to improve sustainability of biologically-based pest management and beneficial insect conservation. Dr. James placed sticky traps next to 43 forb and shrub species adapted to central Washington (all species are native except yellow sweetclover), counted and identified insects caught by the traps, and made comparisons to traps placed in the open (control traps). There were 9 times as many beneficial insects on yellow sweetclover traps as the controls, and 7 times as many on rubber rabbitbrush traps. For 8 other species, there were 2 to 3 times as many beneficials compared to controls. In all, 23 plants were found to have potential for beneficial insect habitat. They are listed here with the insects they attracted:

Plant Species	**Attracts**
showy milkweed *Asclepias speciosa*	general beneficials, pirate bugs, mite-eating lady beetles, hover flies, parasitic wasps
yellow sweetclover *Melilotus officinalis*	general beneficials, pirate bugs, predatory thrips
western clematis *Clematis ligusticifolia*	general beneficials, mite-eating lady beetles, parasitic flies and wasps
rubber rabbitbrush *Ericameria nauseosa*	general beneficials, pirate bugs, parasitic wasps

western yarrow *Achillea millefolium*	general beneficials, pirate bugs, parasitic wasps
snow buckwheat *Eriogonum niveum*	general beneficials, pirate bugs
blackeyed susan *Rudbeckia hirta*	general beneficials, parasitic wasps
hawksbeard *Crepis* spp.	general beneficials, predatory thrips, parasitic flies
Oregon sunshine *Eriophyllum lanatum*	general beneficials, predatory thrips, parasitic wasps
Woods' rose *Rosa woodsii*	parasitic wasps
rock buckwheat *Eriogonum sphaerocephalum*	mite-eating ladybeetles, ladybeetles, parasitic wasps
Columbia prickly pear *Opuntia columbiana*	mite-eating ladybeetles, predatory thrips
tall buckwheat *Eriogonum elatum*	pirate bugs, predatory thrips
Lewis' mockorange *Philadelphus lewisii*	lady beetles, mite-eating ladybeetles
parsnip-flower buckwheat *Eriogonum heracleoides*	pirate bugs, mite-eating lady beetles, predatory thrips
Munro's globemallow *Sphaeralcea munroana*	lady beetles, *Anagrus* wasps
yellow bee plant *Cleome lutea*	mite-eating lady beetles, lady beetles, parasitic wasps
Gray's biscuitroot *Lomatium grayii*	hover flies, parasitic flies
cushion buckwheat *Eriogonum ovalifolium*	predatory thrips, lady beetles
northern buckwheat *Eriogonum compositum*	mite-eating lady beetles, lady beetles
finefleaf hymenopappus *Hymenopappus filifolius*	Ichneumonid/braconid wasps
golden currant *Ribes aureum*	Ichneumonid/braconid wasps
Douglas' dustymaiden *Chaenactis douglasii*	predatory thrips, parasitic wasps

For more information on this and the habitat restoration project for vineyards, contact David James at: david_james@wsu.edu

Featured Pollinator Plant

Showy milkweed (*Asclepias speciosa*) is a common plant found in most states west of the Mississippi, and in the central and western provinces of Canada. In Washington it is found primarily east of the Cascades. It grows along roadsides and other open areas at low elevations on dry to moist, loamy to sandy soil. Flowers bloom July through August. Caterpillars of the monarch butterfly ingest the showy milkweed's poisonous sap for defense against vertebrate predators. Stored poisons from milkweed also protect the adult butterfly. The plant is visited by a variety of pollinators, including butterflies, bees, wasps, flies, and hummingbirds, and a significant number of beneficial insects (see Dr. David James' research, above). For more information, see the Plant Guide available on the PLANTS website: http://plants.usda.gov/java/profile?symbol=ASSP&photoID=assp_003_ahp.tif

Showy milkweed (*Asclepias speciosa*). Teresa Prendusi, US Forest Service

(Sources: NRCS PLANTS Database; Trees, Shrubs and Flowers to Know in WA & BC; Burke Herbarium; Attracting Native Pollinators; Dr. David James)

Featured Pollinator

Western tiger swallowtail butterfly (*Papilio rutulus*) on showy milkweed (*Asclepias speciosa*). www.indiana.edu

The **western tiger swallowtail butterfly (*Papilio rutulus*)** utilizes nectar from many species of flowers, including showy milkweed. Adult butterflies have a wing span of 90 to 110 mm and are active fliers, especially along stream corridors. Throughout most of their range (west of the Rocky Mountains) they have one flight per year (June – July) however along the Pacific coast they may have 2 to 4 flights per year. Adult butterflies lay dark green, shiny and spherical eggs singly on the upper surfaces of leaves, and caterpillars hatch after about 4 days. Caterpillars feed on leaves of plum, cherry, cottonwood, willow, red alder, maple, elm, ash and lilac. As a means of defense, young caterpillars mimic bird droppings!

(Sources: Attracting Native Pollinators; www.bugguide.net; Dr. David James)

Upcoming Pollinator and Beneficial Insect Trainings

April 26	Idaho CRP Seeding Training for CP1, CP2, CP4B, CP4D, CP25 and CP42 - Pullman, WA
May 5	Washington Biology Tech Note 24 and People's Gardens - Wenatchee, WA (North Central Team Meeting)
May 19	Cover Crops in Orchards and Vineyards - Quincy, WA
June 1	Washington Biology Tech Note 24 and People's Gardens - Ephrata, WA (Big Bend Team Meeting)
June 22	Xerces Pollinator Conservation Short Course - Aberdeen, ID
July 6	Xerces Pollinator Conservation Short Course - Pullman, WA
July 7	Xerces Pollinator Conservation Short Course - Wenatchee, WA

Who We Are

For more information, please visit our website:
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