Insect Surveys on Established Native Forbs & Shrub Plantings

at the USDA-NRCS Corvallis, Oregon Plant Materials Center

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September 2009

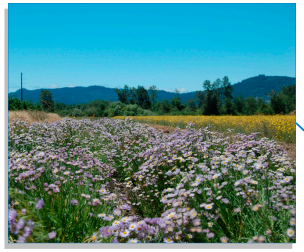
Abstract

In 2007, the USDA-NRCS Corvallis Plant Materials Center (PMC), Oregon State University's Integrated Plan Protection Center (IPPC), and the Xerces Society came together to develop and plant a native pollinator/beneficial insect hedgerow and conduct insect surveys on over 20 different native shrub and forb species located at the PMC. The objective of the project is to gain

knowledge of pollinator and beneficial insect associations with native plants of the Pacific Northwest and to publish the findings to aid growers and planners in habitat establishment and management for these organisms using native plants within agronomic settings in Oregon's Willamette Valley.

Basic knowledge of pollinator and beneficial insect visitation on native plants within the Willamette Valley is lacking or very limited. As part of this partnership, three students from Oregon State University conducted insect surveys on a variety of native plant species at the PMC between the months of April and August in 2007 and 2008. Weekly surveys were conducted visually, using sweep nets, aspirators, blue vane, beat sheets, vacuums and pan traps. Flowering dates of the surveyed plants were also recorded throughout the season.

An on-farm demonstration hedgerow established at the PMC in February 2008 and was also sampled for insect pollinators and biological control organisms. The hedgerow is comprised of 11 shrub and 6 native forb species and will serve as a demonstration planting for growers, government personnel, and the general public. The principal results to date show that over 40 families of insects have been collected on native plants at the PMC, including 19 species of bees. This high diversity of native bee visitation is significant in light of nationwide declines of European honey bee populations and the important role native pollinators can have on crop production.



The table below displays a partial listing of the insect and plant species surveyed.
For additional information on the complete findings, contact: Joe.Williams@or.usda.gov

Plant Scientific Name	Plant Common Name	Year	flowerbegin	flowerpeak	flowerend	Insect Scientific Name	Insect Common Name
Achillea Millefolium	Yarrow	2007	16-Jul-07		02-Aug-07	Andrenidae Andrena	Mining Bee Sp 1
Achillea Millefolium	Yarrow	2007	16-Jul-07		02-Aug-07	Andrenidae Andrena	Mining Bee Sp 2
Achillea Millefolium	Yarrow	2007	16-Jul-07		02-Aug-07	Apidae Nomada	Cuckoo Bee Species 1
Achillea Millefolium	Yarrow	2007	16-Jul-07		02-Aug-07	Bombus vosnesenskii	Yellow-faced Bumble Bee
Achillea Millefolium	Yarrow	2007	16-Jul-07		02-Aug-07	Halictidae Lasioglossum	Sweat Bee
Achillea Millefolium	Yarrow	2007	16-Jul-07		02-Aug-07	Lasioglossum olympiae	Sweat Bee
Erigenum umbellatum	Sulfur buckwheat	2007	14-May-07	14-May-07	15-Jun-07	Andrenidae Andrena	Mining Bee Sp 1
Erigenum umbellatum	Sulfur buckwheat	2007	14-May-07	14-May-07	15-Jun-07	Lasioglossum olympiae	Sweat Bee
Holodiscus discolor	Ocean spray	2007	18-Jun-07		09-Jul-07	Andrenidae Andrena	Mining Bee Sp 1
Holodiscus discolor	Ocean spray	2007	18-Jun-07		09-Jul-07	Andrenidae Andrena	Mining Bee Sp 2
Holodiscus discolor	Ocean spray	2007	18-Jun-07		09-Jul-07	Bombus Vosnesenskii	Yellow-faced Bumble Bee
Holodiscus discolor	Ocean spray	2007	18-Jun-07		09-Jul-07	Halictidae Lasioglossum	Sweat Bee
Holodiscus discolor	Ocean spray	2007	18-Jun-07		09-Jul-07	Halictus tripartitus	Sweat Bee
Penstemon roezlii	Roezli's penstemon	2007	11-Jun-07		06-Jul-07	Agapostemon femoratus	Metallic Green Bee
Penstemon roezlii	Roezli's penstemon	2007	11-Jun-07		06-Jul-07	Andrenidae Andrena	Mining Bee Sp 1
Penstemon roezlii	Roezli's penstemon	2007	11-Jun-07		06-Jul-07	Andrenidae Andrena	Mining Bee Sp 2
Penstemon roezlii	Roezli's penstemon	2007	11-Jun-07		06-Jul-07	Bombus appositus	
Penstemon roezlii	Roezli's penstemon	2007	11-Jun-07		06-Jul-07	Bombus griseocollis	Brownbelted Bumble Bee
Penstemon roezlii	Roezli's penstemon	2007	11-Jun-07		06-Jul-07	Bombus Vosnesenskii	Yellow-faced Bumble Bee
Penstemon roezlii	Roezli's penstemon	2007	11-Jun-07		06-Jul-07	Halictus tripartitus	Sweat Bee
Philadelphus oreganus	Mock Orange	2007	11-Jun-07		06-Jul-07	Andrenidae Andrena	Mining Bee Sp 1
Philadelphus oreganus	Mock Orange	2007	11-Jun-07		06-Jul-07	Andrenidae Andrena	Mining Bee Sp 2
Philadelphus oreganus	Mock Orange	2007	11-Jun-07		06-Jul-07	Halictidae Lasioglossum	Sweat Bee
Physocarpus capitatus	Pacific Ninebark	2007	21-May-07		22-Jun-07	Andrenidae Andrena	Mining Bee Sp 1
Physocarpus capitatus	Pacific Ninebark	2007	21-May-07		22-Jun-07	Andrenidae Andrena	Mining Bee Sp 2
Physocarpus capitatus	Pacific Ninebark	2007	21-May-07		22-Jun-07	Bombus vosnesenskii	Yellow-faced Bumble Bee
Prunella vulgaris	Seal-heal	2007	18-Jun-07		10-Jul-07	Andrenidae Andrena	Mining Bee Sp 1
Prunella vulgaris	Seal-heal	2007	18-Jun-07		10-Jul-07	Bombus appositus	
Prunella vulgaris	Seal-heal	2007	18-Jun-07		10-Jul-07	Bombus californicus	
Prunella vulgaris	Seal-heal	2007	18-Jun-07		10-Jul-07	Bombus griseocollis	Brownbelted Bumble Bee
Prunella vulgaris	Seal-heal	2007	18-Jun-07		10-Jul-07	Bombus Vosnesenskii	Yellow-faced Bumble Bee
Prunella vulgaris	Seal-heal	2007	18-Jun-07		10-Jul-07	Lasioglossum olympiae	Sweat Bee
Sidalcea nelsoniana	Nelson's	2007	14-May-07	14-May-07	28-May-07	Andrenidae Andrena	Mining Bee Sp 1
Sidalcea nelsoniana	Nelson's	2007	14-May-07	14-May-07	28-May-07	Bombus griseocollis	Brownbelted Bumble Bee
Sidalcea nelsoniana	Nelson's	2007	14-May-07	14-May-07	28-May-07	Bombus mixtus	
Sidalcea nelsoniana	Nelson's	2007	14-May-07	14-May-07	28-May-07	Bombus Vosnesenskii	Yellow-faced Bumble Bee
Sidalcea virgata	Dwarf Checkermallow	2007	06-Jul-07		30-Jul-07	Andrenidae Andrena	Mining Bee Sp 1
Sidalcea virgata	Dwarf Checkermallow	2007	06-Jul-07		30-Jul-07	Apidae Synhalonia	Long-horned Bee
Sidalcea virgata	Dwarf Checkermallow	2007	06-Jul-07		30-Jul-07	Lasioglossum olympiae	Sweat Bee
Sidalcea virgata	Dwarf Checkermallow	2007	06-Jul-07		30-Jul-07	Melissodes rivalis	Long-horned Bee
Achillea Millefolium	Yarrow	2008	23-Jun-08	25-Jun-08	24-Jul-08	Andrenidae Andrena	Mining Bee Sp 1
Achillea Millefolium	Yarrow	2008	23-Jun-08	25-Jun-08	24-Jul-08	Andrenidae Andrena	Mining Bee Sp 2
Achillea Millefolium	Yarrow	2008	23-Jun-08	25-Jun-08	24-Jul-08	Apidae Nomada	Cuckoo Bee Species 1
Achillea Millefolium	Yarrow	2008	23-Jun-08	25-Jun-08	24-Jul-08	Bombus vosnesenskii	Yellow-faced Bumble Bee
Achillea Millefolium	Yarrow	2008	23-Jun-08	25-Jun-08	24-Jul-08	Halictidae Lasioglossum	Sweat Bee
Achillea Millefolium	Yarrow	2008	23-Jun-08	25-Jun-08	24-Jul-08	Lasioglossum olympiae	Sweat Bee
Clarkia purpurea	Winecup Clarkia	2008	25-Jun-08	30-Jun-08	07-Jul-08	Andrenidae Andrena	Mining Bee Sp 1
Clarkia purpurea	Winecup Clarkia	2008	25-Jun-08	30-Jun-08	07-Jul-08	Andrenidae Andrena	Mining Bee Sp 2
Clarkia purpurea	Winecup Clarkia	2008	25-Jun-08	30-Jun-08	07-Jul-08	Halictus tripartitus	Sweat Bee
Clarkia purpurea	Winecup Clarkia	2008	25-Jun-08	30-Jun-08	07-Jul-08	Lasioglossum olympiae	Sweat Bee
Collomia grandiflora	Grand Collomia	2008	23-Jun-08	25-Jun-08	15-Jul-08	Andrenidae Andrena	Mining Bee Sp 1
Collomia grandiflora	Grand Collomia	2008	23-Jun-08	25-Jun-08	15-Jul-08	Andrenidae Andrena	Mining Bee Sp 2
Collomia grandiflora	Grand Collomia	2008	23-Jun-08	25-Jun-08	15-Jul-08	Bombus appositus	
Collomia grandiflora	Grand Collomia	2008	23-Jun-08	25-Jun-08	15-Jul-08	Bombus Vosnesenskii	Yellow-faced Bumble Bee
Collomia grandiflora	Grand Collomia	2008	23-Jun-08	25-Jun-08	15-Jul-08	Halictus tripartitus	Sweat Bee
Collomia grandiflora	Grand Collomia	2008	23-Jun-08	25-Jun-08	15-Jul-08	Lasioglossum olympiae	Sweat Bee
Erigeron decumbens	Willamette Valley daisy	2008	23-Jun-08	23-Jun-08	09-Jul-08	Agapostemon femoratus	Metallic Green Bee
Erigeron decumbens	Willamette Valley daisy	2008	23-Jun-08	23-Jun-08	09-Jul-08	Andrenidae Andrena	Mining Bee Sp 1
Erigeron decumbens	Willamette Valley daisy	2008	23-Jun-08	23-Jun-08	09-Jul-08	Andrenidae Andrena	Mining Bee Sp 2
Erigeron decumbens	Willamette Valley daisy	2008	23-Jun-08	23-Jun-08	09-Jul-08	Apidae Nomada	Cuckoo Bee Species 1
Erigeron decumbens	Willamette Valley daisy	2008	23-Jun-08	23-Jun-08	09-Jul-08	Halictidae Lasioglossum	Sweat Bee
Erigeron decumbens	Willamette Valley daisy	2008	23-Jun-08	23-Jun-08	09-Jul-08	Lasioglossum olympiae	Sweat Bee
Erigenum umbellatum	Sulfur buckwheat	2008	23-Jun-08	25-Jun-08	30-Jun-08	Andrenidae Andrena	Mining Bee Sp 1
Erigenum umbellatum	Sulfur buckwheat	2008	23-Jun-08	25-Jun-08	30-Jun-08	Lasioglossum olympiae	Sweat Bee
Eriophyllum lanatum	Oregon sunshine	2008	23-Jun-08	25-Jun-08	03-Jul-08	Andrenidae Andrena	Mining Bee Sp 1
Eriophyllum lanatum	Oregon sunshine	2008	23-Jun-08	25-Jun-08	03-Jul-08	Andrenidae Andrena	Mining Bee Sp 2
Eriophyllum lanatum	Oregon sunshine	2008	23-Jun-08	25-Jun-08	03-Jul-08	Bombus Vosnesenskii	Yellow-faced Bumble Bee
Eriophyllum lanatum	Oregon sunshine	2008	23-Jun-08	25-Jun-08	03-Jul-08	Halictus tripartitus	Sweat Bee
Eriophyllum lanatum	Oregon sunshine	2008	23-Jun-08	25-Jun-08	03-Jul-08	Lasioglossum olympiae	Sweat Bee
Grindelia integrifolia	Willamette Valley	2008	05-Aug-08	11-Aug-08	22-Aug-08	Andrenidae Andrena	Mining Bee Sp 1
Helianthella uniflora	One Flower Sunflower	2008	21-Jul-08	24-Jul-08	22-Aug-08	Andrena prunorum	prunorum
Helianthella uniflora	One Flower Sunflower	2008	21-Jul-08	24-Jul-08	22-Aug-08	Andrenidae Andrena	Mining Bee Sp 1
Helianthella uniflora	One Flower Sunflower	2008	21-Jul-08	24-Jul-08	22-Aug-08	Apidae Melissodes	Long-horned bees
Helianthella uniflora	One Flower Sunflower	2008	21-Jul-08	24-Jul-08	22-Aug-08	Bombus appositus	
Helianthella uniflora	One Flower Sunflower	2008	21-Jul-08	24-Jul-08	22-Aug-08	Bombus californicus	
Helianthella uniflora	One Flower Sunflower	2008	21-Jul-08	24-Jul-08	22-Aug-08	Bombus griseocollis	Brownbelted Bumble Bee
Helianthella uniflora	One Flower Sunflower	2008	21-Jul-08	24-Jul-08	22-Aug-08	Bombus vosnesenskii	Yellow-faced Bumble Bee
Helianthella uniflora	One Flower Sunflower	2008	21-Jul-08	24-Jul-08	22-Aug-08	Megachile perihirta	Leaf-cutting and Resin
Holodiscus discolor	Ocean spray	2008	30-Jun-08	03-Jul-08	15-Jul-08	Andrenidae Andrena	Mining Bee Sp 1
Holodiscus discolor	Ocean spray	2008	30-Jun-08	03-Jul-08	15-Jul-08	Andrenidae Andrena	Mining Bee Sp 2
Holodiscus discolor	Ocean spray	2008	30-Jun-08	03-Jul-08	15-Jul-08	Bombus Vosnesenskii	Yellow-faced Bumble Bee
Holodiscus discolor	Ocean spray	2008	30-Jun-08	03-Jul-08	15-Jul-08	Halictidae Lasioglossum	Sweat Bee
Holodiscus discolor	Ocean spray	2008	30-Jun-08	03-Jul-08	15-Jul-08	Halictus tripartitus	Sweat Bee
Hordeum vulgaris	Moravian barley	2008	23-Jun-08	23-Jun-08	25-Jun-08	Andrenidae Andrena	Mining Bee Sp 1
Hordeum vulgaris	Moravian barley	2008	23-Jun-08	25-Jun-08	03-Jul-08	Andrenidae Andrena	Mining Bee Sp 1
Mentha piperita	Peppermint	2008	15-Aug-08	22-Aug-08	26-Aug-08	Bombus griseocollis	Brownbelted Bumble Bee
Mentha piperita	Peppermint	2008	15-Aug-08	22-Aug-08	26-Aug-08	Bombus vosnesenskii	Yellow-faced Bumble Bee
Penstemon roezlii	Roezli's penstemon	2008	23-Jun-08	23-Jun-08	30-Jun-08	Agapostemon femoratus	Metallic Green Bee
Penstemon roezlii	Roezli's penstemon	2008	23-Jun-08	23-Jun-08	30-Jun-08	Andrenidae Andrena	Mining Bee Sp 1
Penstemon roezlii	Roezli's penstemon	2008	23-Jun-08	23-Jun-08	30-Jun-08	Andrenidae Andrena	Mining Bee Sp 2
Penstemon roezlii	Roezli's penstemon	2008	23-Jun-08	23-Jun-08	30-Jun-08	Bombus appositus	
Penstemon roezlii	Roezli's penstemon	2008	23-Jun-08	23-Jun-08	30-Jun-08	Bombus griseocollis	Brownbelted Bumble Bee
Penstemon roezlii	Roezli's penstemon	2008	23-Jun-08	23-Jun-08	30-Jun-08	Bombus Vosnesenskii	Yellow-faced Bumble Bee
Penstemon roezlii	Roezli's penstemon	2008	23-Jun-08	23-Jun-08	30-Jun-08	Halictus tripartitus	Sweat Bee
Philadelphus oreganus	Mock Orange	2008	23-Jun-08	23-Jun-08	30-Jun-08	Andrenidae Andrena	Mining Bee Sp 1
Philadelphus oreganus	Mock Orange	2008	23-Jun-08	23-Jun-08	30-Jun-08	Andrenidae Andrena	Mining Bee Sp 2
Philadelphus oreganus	Mock Orange	2008	23-Jun-08	23-Jun-08	30-Jun-08	Halictidae Lasioglossum	Sweat Bee
Physocarpus capitatus	Pacific Ninebark	2008	25-Jun-08	25-Jun-08	03-Jul-08	Andrenidae Andrena	Mining Bee Sp 1
Physocarpus capitatus	Pacific Ninebark	2008	25-Jun-08	25-Jun-08	03-Jul-08	Andrenidae Andrena	Mining Bee Sp 2
Physocarpus capitatus	Pacific Ninebark	2008	25-Jun-08	25-Jun-08	03-Jul-08	Bombus vosnesenskii	Yellow-faced Bumble Bee
Potentilla gracilis	Slender cinquefoil	2008	23-Jun-08	30-Jun-08	07-Jul-08	Agapostemon femoratus	Metallic Green Bee
Potentilla gracilis	Slender cinquefoil	2008	23-Jun-08	30-Jun-08	07-Jul-08	Andrenidae Andrena	Mining Bee Sp 1
Potentilla gracilis	Slender cinquefoil	2008	23-Jun-08	30-Jun-08	07-Jul-08	Andrenidae Andrena	Mining Bee Sp 2
Potentilla gracilis	Slender cinquefoil	2008	23-Jun-08	30-Jun-08	07-Jul-08	Bombus Vosnesenskii	Yellow-faced Bumble Bee
Potentilla gracilis	Slender cinquefoil	2008	23-Jun-08	30-Jun-08	07-Jul-08	Halictus tripartitus	Sweat Bee
Potentilla gracilis	Slender cinquefoil	2008	23-Jun-08	30-Jun-08	07-Jul-08	Lasioglossum olympiae	Sweat Bee
Prunella vulgaris	Seal-heal	2008	23-Jun-08	25-Jun-08	03-Jul-08	Andrenidae Andrena	Mining Bee Sp 1
Prunella vulgaris	Seal-heal	2008	23-Jun-08	25-Jun-08	03-Jul-08	Bombus appositus	
Prunella vulgaris	Seal-heal	2008	23-Jun-08	25-Jun-08	03-Jul-08	Bombus californicus	
Prunella vulgaris	Seal-heal	2008	23-Jun-08	25-Jun-08	03-Jul-08	Bombus griseocollis	Brownbelted Bumble Bee
Prunella vulgaris	Seal-heal	2008	23-Jun-08	25-Jun-08	03-Jul-08	Bombus Vosnesenskii	Yellow-faced Bumble Bee
Prunella vulgaris	Seal-heal	2008	23-Jun-08	25-Jun-08	03-Jul-08	Lasioglossum olympiae	Sweat Bee
Sidalcea campestris	Meadow	2008	23-Jun-08	30-Jun-08	07-Jul-08	Andrenidae Andrena	Mining Bee Sp 1
Sidalcea campestris	Meadow	2008	23-Jun-08	30-Jun-08	07-Jul-08	Bombus melanopygus	Orange-rumped
Sidalcea campestris	Meadow	2008	23-Jun-08	30-Jun-08	07-Jul-08	Bombus Vosnesenskii	Yellow-faced Bumble Bee
Sidalcea campestris	Meadow	2008	23-Jun-08	30-Jun-08	07-Jul-08	Halictus tripartitus	Sweat Bee
Sidalcea nelsoniana	Nelson's	2008	25-Jun-08	25-Jun-08	03-Jul-08	Andrenidae Andrena	Mining Bee Sp 1
Sidalcea nelsoniana	Nelson's	2008	25-Jun-08	25-Jun-08	03-Jul-08	Bombus griseocollis	Brownbelted Bumble Bee
Sidalcea nelsoniana	Nelson's	2008	25-Jun-08	25-Jun-08	03-Jul-08	Bombus mixtus	
Sidalcea nelsoniana	Nelson's	2008	25-Jun-08	25-Jun-08	03-Jul-08	Bombus Vosnesenskii	Yellow-faced Bumble Bee
Spiraea douglasii	Douglas Spiraea	2008	09-Jul-08	15-Jul-08	24-Jul-08	Andrenidae Andrena	Mining Bee Sp 1
Spiraea douglasii	Douglas Spiraea	2008	09-Jul-08	15-Jul-08	24-Jul-08	Bombus vosnesenskii	Yellow-faced Bumble Bee
Symphyotrichum hallii	Hall's Aster	2008	08-Aug-08	11-Aug-08	22-Aug-08	Andrenidae Andrena	Mining Bee Sp 1
Symphyotrichum hallii	Hall's Aster	2008	08-Aug-08	11-Aug-08	22-Aug-08	Andrenidae Andrena	Mining Bee Sp 2
Symphyotrichum hallii	Hall's Aster	2008	08-Aug-08	11-Aug-08	22-Aug-08	Apidae Melissodes	Long-horned bees
Symphyotrichum hallii	Hall's Aster	2008	08-Aug-08	11-Aug-08	22-Aug-08	Bombus griseocollis	Brownbelted Bumble Bee
Symphyotrichum hallii	Hall's Aster	2008	08-Aug-08	11-Aug-08	22-Aug-08	Bombus vosnesenskii	Yellow-faced Bumble Bee

A Painted Lady butterfly (Vanessa cardui) loose silk nest is found on a lupine in the Corvallis PMC hedgerow.

The Corvallis PMC hedgerow is shown after planting in 2008 (top photo) and in 2009 (lower two photos).

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