

## Palouse Prairie Native Plants in the UI Arboretum and Botanical Garden

The University of Idaho Arboretum and Botanical Garden was formally established with a Master Plan for development in 1980. For the next 20 years, the collection was primarily focused on woody trees, both native and introduced species along with cultivars that are reliably hardy in the Palouse.

The Arboretum is located in a 45 acre valley directly east of the UI golf course. It can be accessed either from the north end on Nez Perce Drive, or from the south end at 1200 West Palouse River Drive. The Arboretum Office is located in the Facilities Services Center, 875 Perimeter Drive. The phone number is (208) 885-5978 and the email address is arboretum@uidaho.edu.

In 2001, the City of Moscow approached the Arboretum asking if it would be possible to work together on a xeriscape garden to demonstrate low water usage landscaping for the area. The City agreed to provide some funding in return for the space, installation and maintenance of the garden. The xeriscape garden became the first significant planting of herbaceous plants in the Arboretum.

One of the guiding principals of xeriscaping is the idea of using locally native plants, since they are well adapted to the local area and shouldn't need much supplemental irrigation. As I designed the garden I tried to utilize some natives throughout the garden; and I set aside one entire section for plants native to the state of Idaho.

One idea presented in the original Master Plan of the Arboretum (currently being revised and updated, by Walker-Macy, a Landscape Architecture firm in Portland, Oregon) was to plant a section of restored Palouse Prairie. This is still well supported by various Arboretum groups; but it is a difficult goal to achieve. One of the problems is that there are very few sources of seed or plants, and another problem is there is not much knowledge about how to grow the plants.

I decided that the xeriscape garden would be an excellent place to work with Palouse Prairie natives to see how they grow in local conditions and it could be used as a source for seeds as the plants become established. An area was set aside within the Idaho Native section of the xeriscape garden to plant only locally native plants. The section is on the east side of the gravel road, across from the main body of the xeriscape garden. It is immediately north of the group of *Populus tremuloides* (Quaking Aspen). The area is fairly small, only about 30 feet by 10 feet, but it includes nearly forty different Palouse Prairie natives. All of the forbs (broad leaved, herbaceous plants) in that plot are from locally collected seed. All of the forbs and grasses were grown from seed in containers (either tubes or small pots) then planted out as established plants. The first forbs and grasses were planted in the fall of 2002, with more plants added in '03 and '04. The plants were watered occasionally by hand during their first growing season, and then left to only natural rainfall after that.



*Aster jessicae* September 9, 2004

So far the plantings consist of 7 different grasses, 5 woody species of woody plants, and 34 species of forbs or wildflowers. The attached list shows the Palouse Prairie natives currently growing in the xeriscape garden. The wildflowers include two species of local endemic plants, or plants that only occur in very small, local areas, *Aster jessicae* (Jessica's Aster), and *Pyrrcoma liatrifomis* (Palouse Goldenweed). Surprisingly, the Jessica's Aster has proven to be very vigorous and showy when it has some space to grow. Other flowers that have been especially showy include *Ipomopsis aggregata* ssp. *aggregata* (Scarlet Gilia), *Gaillardia aristata* (Blanket Flower), and *Collomia grandiflora* (Large-flowered Collomia). The Collomia is an annual plant, but it has very successfully re-seeded for the last two years. Another surprise has been that the local species of Yarrow, *Achillea millefolium*, does not seem to be as aggressive as some other Yarrow that are often sold as ornamentals. So far, the local native has stayed in fairly contained clumps.



Palouse Prairie section, Xeriscape Garden January 26, 2005

In the fall of 2003 I tried starting some Palouse Prairie grasses from seed in a raised berm in a section of the Arboretum all ready devoted to Idaho native plants. I planted two cultivars of *Pseudoroegneria spicata* (Bluebunch Wheatgrass) and three selections of *Festuca idahoensis*, (Idaho Fescue). I sowed the seeds in late August, then I watered the site often enough to keep the soil surface moist. The seed came up very well and made a good stand before going dormant for the winter. The site is surrounded by turf grass and the biggest problem with the site has been competition from other weedy grasses. There have been some broadleaf weeds as well, but they have been easy to control with an application of 2,4-D a broad leaf weed killer. The grasses are much harder to control chemically since it is impossible to selectively kill the weedy grasses without killing the desirable species. We did manage to keep the weedy grasses more or less under control with hand weeding, but that is only practical on a very small site. I think this illustrates the idea that it is very important that weeds need to be controlled as completely as possible before any planting is considered.

In the original planting that has now been established for two full growing seasons the weed problem has not been significant. I think that is one of the advantages of xeriscaping or low water usage landscaping that is not mentioned very often. By using less water, there are far fewer weeds than would be found in an equivalent irrigated landscape.



Palouse Prairie section, Xeriscape Garden, University of Idaho Arboretum January 26, 2005

Up until this spring we have not done any cutting back to speak of on the Palouse Prairie plantings. I think this third spring there is enough dead material left above ground that it will start to inhibit the growth of the desirable plants. The sites are small enough to easily be cut back by hand, but I think it could be done mechanically with either a string trimmer or a mower. I have left most of the seeds to ripen and fall naturally to see which plants will spread by seed.

I think that the plantings have demonstrated that there are a number of local native plants that can do well when transplanted as plants, with relatively little maintenance. The problems (as was expected) are availability of plants and competition from weeds. The planting is very attractive in late spring into early summer, then as natural rainfall diminishes most of the plants go dormant. Most people probably find the dead foliage and seed heads less attractive than traditional lush green landscaping, so I don't foresee Palouse Prairie gardens ever being very popular. However, in areas where low maintenance, little irrigation, and improved wildlife habitat are important I think there is a definite need for more availability of Palouse Prairie plants and more knowledge about techniques for growing and maintaining a Prairie planting.



Palouse Prairie section (foreground) Xeriscape Garden, January 26, 2005

ACC. NUM.	SCIENTIFIC NAME	COMMON NAME	# PLTS.	LOCATION
Grasses				
g 2003398	<i>Deschampsia caespitosa</i>	Tufted Hair Grass	14	XENI
g 2003400	<i>Elymus cinereus</i>	Great Basin Wild Rye	9	XESI, XEWS
g 2002150	<i>Elymus glaucus</i>	Blue Wildrye	34	XEPE, XEWN
g 2004262	<i>Festuca idahoensis 'Joseph'</i>	'Joseph' Idaho Fescue	19	XENI
g 2003404	<i>Koeleria macrantha</i>	Prairie June Grass	12	XENI
g 2003409	<i>Poa sandbergii</i>	Sandberg's Blue Grass	5	XENI
g 2002177	<i>Pseudoroegneria spicata</i>	Bluebunch Wheatgrass	41	XENI, XEPE, XEWN
Woody Plants				
w 2002083	<i>Arctostaphylos uva-ursi</i>	Kinnikinnick	10	XENI
w 2002108	<i>Crataegus douglasii</i>	Black Hawthorn	3	XENI
w 2002089	<i>Mahonia repens</i>	Creeping Oregon Grape	44	XESI, XEWN, XEWS
w 2002072	<i>Pinus ponderosa</i>	Ponderosa Pine	2	XENI
w 2002060	<i>Symphoricarpos albus</i>	Common Snowberry	5	XENI
Forbs				
2003087	<i>Achillea millefolium</i>	Yarrow	6	XENI
2003091	<i>Agastache urticifolia</i>	Nettle Leaf Horse Mint	3	XENI
2003239	<i>Allium acuminatum</i>	Wild Onion	5	XENI
2002214	<i>Anaphalis margaritacea</i>	Pearly Everlasting	8	XENI
2004175	<i>Apocynum androsaemifolium</i>	Creeping Dogbane	3	XENI
2003199	<i>Artemisia ludoviciana</i>	White Sage	3	XESO

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2003164	<i>Aster jessicae</i>	Jessica's Aster	3	XENI
2002243	<i>Aster occidentalis</i>	Western Aster	8	XENI, XEPE
2002178	<i>Balsamorhiza sagittata</i>	Arrowleaf Balsam Root	10	XEPE
2003143	<i>Besseyia rubra</i>	Red Besseyia	3	XENI
2003424	<i>Collomia grandiflora</i>	Large-flowered Collomia	9	XENI
2002244	<i>Gaillardia aristata</i>	Blanket Flower	7	XENI
2002262	<i>Galium boreale</i>	Northern Bedstraw	7	XENI
2002245	<i>Geranium viscosissimum</i>	Sticky Geranium	1	XENI
2003092	<i>Geum macrophyllum</i>	Largeleaf Avens	3	XENI
2002238	<i>Geum triflorum</i>	Prairie Smoke	4	XEPE
2003423	<i>Pyrrocoma liatriformis</i>	Palouse Goldenweed	1	XENI
2004187	<i>Helianthella uniflora</i>	Little Sunflower	3	XENI
2004213	<i>Heuchera cylindrica</i>	Roundleaf Alumroot	24	XENI
2003093	<i>Hieracium albertinum</i>	Western Hawkweed	1	XENI
2003238	<i>Ipomopsis aggregata ssp. aggregata</i>	Scarlet Gilia	6	XENI
2003240	<i>Iris missouriensis</i>	Western Blue Iris	6	XENI
2003161	<i>Linum lewisii</i>	Lewis Blue Flax	7	XENI
2004236	<i>Lomatium macrocarpum</i>	Big Seed Biscuitroot	12	XENI
2004238	<i>Lomatium triternatum</i>	Nineleaf Biscuitroot	1	XENI
2002153	<i>Lupinus argenteus</i>	Silvery Lupine	3	XEBG
2002154	<i>Lupinus sericeus</i>	Silky Lupine	19	XENI, XEPE
2004252	<i>Olsynium douglasii var. inflatum</i>	Inflated Grass Widow	6	XENI
2003094	<i>Penstemon confertus</i>	Yellow Penstemon	5	XENI
2003144	<i>Potentilla arguta</i>	Tall Cinquefoil	3	XENI
2003145	<i>Potentilla gracilis</i>	Five-fingered Cinquefoil	3	XENI
2002182	<i>Solidago canadensis</i>	Goldenrod	3	XEPE
2002226	<i>Solidago missouriensis</i>	Missouri Goldenrod	13	XENI, XEPE
2003163	<i>Wyethia amplexicaulis</i>	Mule's Ears	4	XENI