



Drought Tolerant Gardening with Photos from the Moses Lake Demo Garden

WSU Grant/Adams Master Gardener Program

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Fall 2008 Revised Spring 2015

Why use drought tolerant plants? When established they are:

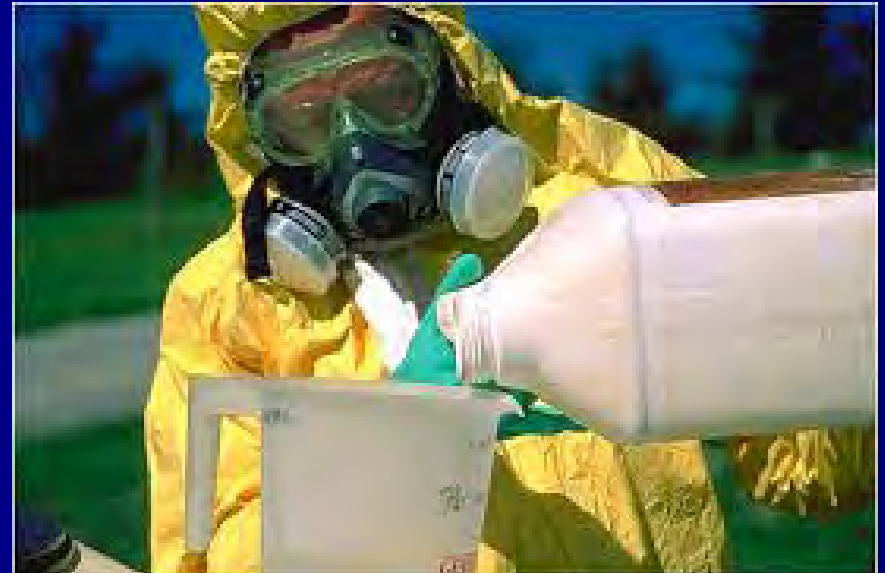


Lewisia rediviva

More tolerant of local conditions,



More pest resistant if unstressed,



Need less fertilizer and



Need less added water.



What makes a plant drought tolerant?

1. Adaptations of the stomata to reduce water loss, such as reduced numbers of stomata or waxy leaf surfaces.
2. Water stored in succulent above-ground parts or water-filled tubers.
3. Adaptations in the root system to increase water absorption.
4. Trichomes (small hairs) on the leaves to absorb atmospheric water.

Columbia Basin conditions

1. Hot temperatures up to 110 °
2. Long sunny days, 12 +hours of sun
3. Dry, low precipitation - 4 to 7 inches
4. Alkaline soil is common
5. Sandy, rocky or clay type soils common
6. Lack of natural organic material

Guide to Water Wise Gardening

- 1. Design garden plan – color, contrast, water zones, purpose, areas
- 2. Analyze site, soil, grade, sun exposure
- 3. Prepare your soil
- 4. Select your plants and turf
- 6. Plan and install your irrigation and plants
- 5. Mulch for protection, health and beauty
- 7. Observe and maintain landscape, IPM

Analyze site, soil, grade, exposure

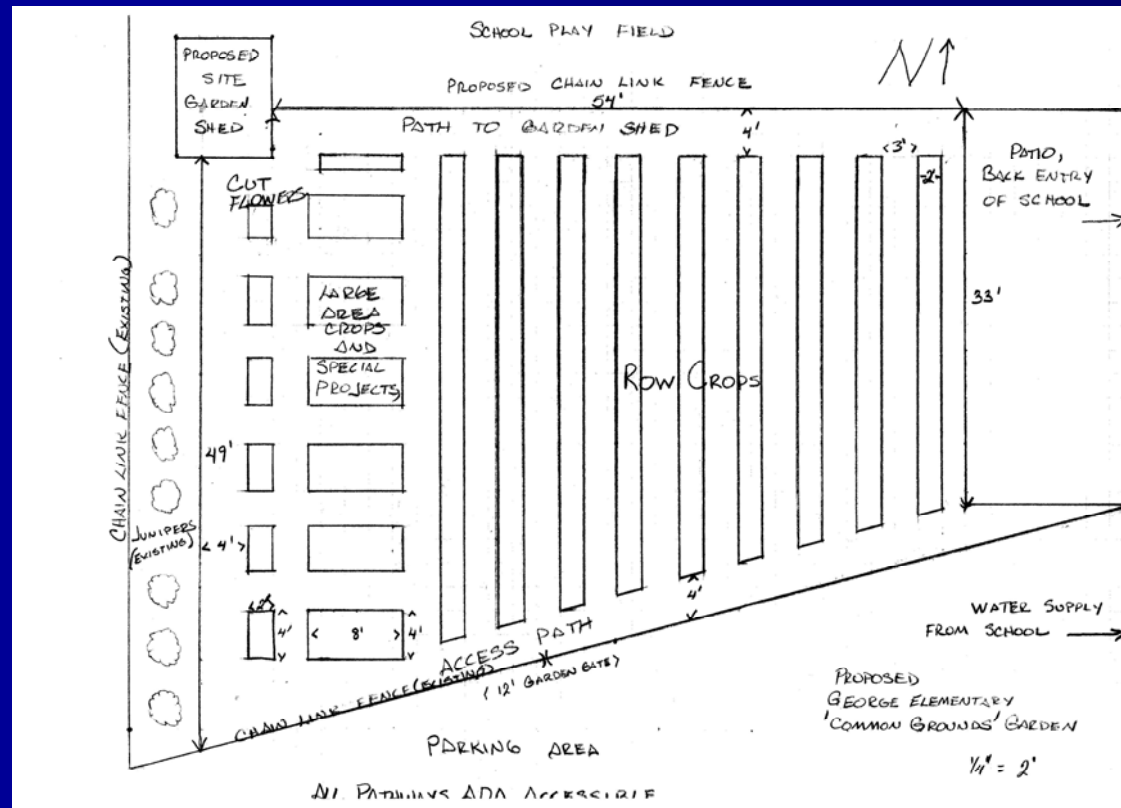
1. Measure and draw a sketch of your site.
2. Have your soil analyzed/tested.
3. What is degree of slope/drainage ?
4. What is the sun exposure through-out the day?

Landscape design basics

- Identify needs and purpose of areas, use of space, desired structures
- Irrigation needs and placement
- Plant sizes –large -‘bones,’ to small
- Choose textures and colors
- Select and place plants
- Softscape, turf, mulch, ground cover
- Hardscape, gravel, bricks, paths

Develop a water use plan

- Plan 3 watering by zones: higher, med & low water use areas.



Background plants

- Trees
- Large Shrubs
- Grasses

Foreground plants

- Small Trees
- Shrubs, large and small
- Flowering Perennials
- Ground Covers
- Annuals

“Put the Right Plant in the Right Place”

- North, south, east or western exposure
- Shade or sun; How many hours of each
- Soil nutrients, type, pH, drainage
- Water availability

Limit Plant Stress.

Know 20+ plant requirements for sun, shade, water, nutrients, soil and more

- Put plants in their favorite location
- Compost! add organic materials to soil
- Mulch to manage heat, water & weeds
- Keep *soil food web*, (mycorrhiza), the micro and macro critters healthy.

Reduce turf areas.

Lawns are a money pits for residences. Lawn grass is the second largest crop in America after corn, another grass. In fact, we grow more lawn grass than anyone else in the world. It takes more time, more resources and results in more pollution than other crops.



Protect and improve your soil.

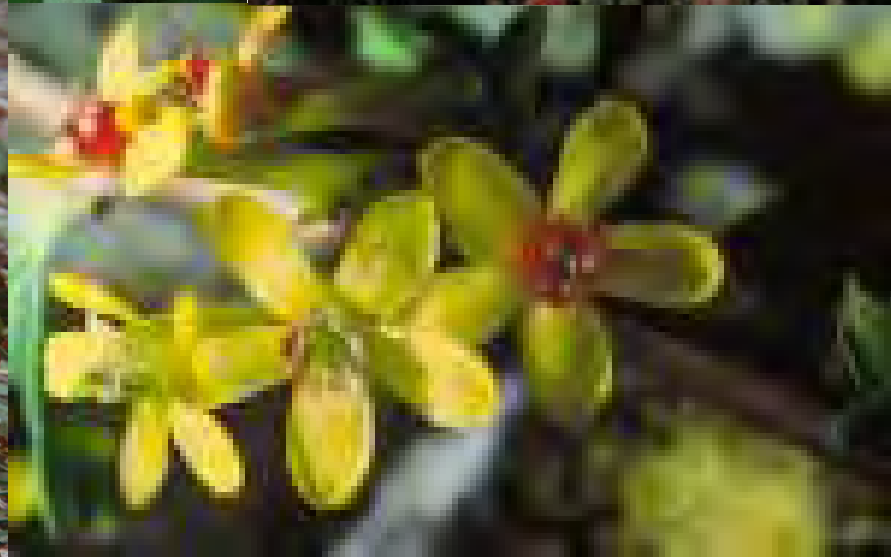


Use cover crops, compost, limit tilling, limit chemicals save the soil food web, feed the living microbes and mycorrhiza.

Mulch!! with wood, straw, leaves, stone, compost and others.



Select appropriate plants



Supplement irrigation and drain efficiently.



Dip and
soakers

Observe, maintain, regularly evaluate



IPM

Integrated Pest Management

- Prevent pests early
- Remove food, shelter, water, entries for pests
- Inspect regularly for signs of pest damage to determine if you have a problem
- Identify your pest, disease, or problem
- Track your pests
- Eliminate existing population (trap, biologicals)
- Use best management option (WSU MGs)
- Evaluate efforts and success

Photos from Moses Lake

Master Gardener

**Drought Tolerant and
Native Plant Garden**

5th Ave and Pioneer Way

Achillea filipendulina golden yarrow



Agastache blue fortune



Antennaria microphylla

rosy pussytoes



Arctostaphylos uva-ursi kinnickinnick



Caryopteris clandonensis

Worcester gold



Centaurea montana mountain bluet



Echinacea purpurea purple coneflower



Echinacea purpurea purple coneflower



Eriogonum heracleoides parsnip flowered buckwheat



Eriogonum nivum

Douglas snow buckwheat



Eriogonum umbellatum sulphur-flower buckwheat



Gaillardia aristata
native blanket flower



Gaura lindheimeri twirling butterflies



Geum triflorum
prairie smoke



Helictotrichon sempervirens
blue oat grass - fall



Helictotrichon sempervirens
blue oat grass - winter



Hemerocalis

peach day lily



Papaver rupifonagum
small perennial poppy



Penstemon deustus hot rock penstemon



Penstemon strictiformus firecracker penstemon



Penstemon

Rocky Mountain penstemon



Penstemon Venustus

Venus penstemon



Penstemon virens



Perovskia atriplicifolia

Russian sage



Ribes aureum
golden current



Sambucus guincho purple European elderberry



Sambucus nigra

Guincho Purple European elderberry



Sambucus nigra

Guincho Purple European elderberry



Sedum telephium autumn joy



Thymus serpyllum

Ohme garden thyme



Zauschneria garrettii

Bowmann's hybrid



Washington Native Plants

Courtesy of Ted Alway

Derby Canyon Natives

Acer circinatum

Vine Maple



Acer glabrum
Douglas Maple



Alnus incana
Mountan Alder



Crataegus douglasii
Douglas Hawthorn



Juniperus scopulorum
Rocky Mountain Juniper



Pinus contorta
Lodgepole Pine



Pinus monticola
Western White Pine



Pseudotsuga menziesii

Douglas Fir



Thuja plicata
Western Red Cedar



Shrubs



Amelanchier alnifolia
Service Berry



Arctostaphylos uva-ursi

Kinnikinnik



Artemisia rigida

Stiff Sagebrush



Artemisia tripartita
Threetip Sagebrush



Aruncus dioicus

Goatsbeard



Ceanothus sanguineus
Redstem ceanothus



Ceanothus velutinus
Snowbrush ceanothus



Clematis columbiana

Blue Clematis



Clematis ligusticifolia

Western Clematis



Cornus sericea
Red Osier Dogwood



Dasiphora fruticosa
Shrubby Cinquefoil



Ericameria nauseosa
Rabbitbrush



Holodiscus discolor
Oceanspray



Linnaea borealis
Twinflower



Lonicera ciliosa
Orange Honeysuckle



Lonicera involucrata

Twinberry



Mahonia aquifolium
Tall Oregon Grape



Pachistima myrsinites
Mountain Boxwood



Philadelphus lewisii
Mockorange



Physocarpus malvaceus
Mallow Ninebark



Prunus emarginata
Bitter Cherry



Prunus virginiana

Chokecherry



Purshia tridentata

Bitterbrush



Rhus glabra
Smooth Sumac



Ribes aureum
Golden Currant



Ribes cereum
Wax Currant



Ribes sanguineum
Red-flowering Currant



Rosa nutkana

Nootka Rose



Rubus parviflorus
Timbleberry



Salix exigua
Coyote Willow



Salix lucida
Pacific Willow



Salix prolixa

Mackenzie Willow



Salix scouleriana
Scouler's Willow



Salvia dorrii
Purple Sage



Sambucus nigra

Blue Elderberry



Sambucus racemosa
Red Elderberry



Sorbus scopulina
Western Mountain Ash



Spiraea betulifolia
Birchleaf Spirea



Spirea douglasii
Hardhack



Symphoricarpus albus

Snowberry



Vaccinium membranaceum

Black Huckleberry



Grasses



Achnatherum hymenoides

Indian Ricegrass



Calamagrostis rubescens

Pinegrass



Deschampsia caespitosa
Tufted Hairgrass



Festuca idahoensis

Idaho Fescue



Festuca ovina* var. *brevifolia

Alpine Fescue



Koeleria cristata

Junegrass



Leymus cinereus

Basin Wildrye



Pseudoroegneria spicata
Bluebunch Wheatgrass



Perennial Flowers

Achillea millefolium **Yarrow**



Agastache cana
Hummingbird Mint



Agastache rupestris
Sunset Hyssop



Anaphalis margaritacea
Pearly Everlasting



Rubus lasiococcus
Blackcap



Antennaria microphylla

Rosy Pussytoes



Aquilegia formosa
Red Columbine



Artemisia frigida
Prairie Wormwood



Balsamorhiza sagittata
Arrow-leaved Balsam Root



Callirhoe involucrata
Purple Poppy Mallow



Calylophus serrulatus

Sundrops



Castilleja elmeri

Wenatchee Mt Paintbrush



Encelia farinosa

Brittlebush



Erigeron linearis

Line-leaved Daisy



5/9/10 - Whiskey Dick Wildlife Area

Erigeron speciosus
Showy Daisy



Eriogonum compositum
Heart-leaved Buckwheat



Eriogonum douglasii
Douglas' Buckwheat



Eriogonum heracleoides
Creamy Buckwheat



Eriogonum niveum
Snow Buckwheat



Eriogonum sphaerocephalum
Round-headed Buckwheat



Eriogonum thymoides
Thyme-leaved Buckwheat



Eriogonum umbellatum

Sulphur Buckwheat



Eriophyllum lanatum

Woolly Sunflower



Gaillardia aristata

Blanketflower



Geranium viscosissimum

Sticky Geranium



Heterotheca villosa

Golden Aster



Leavenworth Fish Hatchery ~ Photo by Thayne Tuason

Heuchera cylindrica
Round-leaved Alumroot



Iliamna longisepala
Long-sepaled Globemallow



Iliamna rivularis
Mountain Hollyhock



Ipomopsis aggregata

Scarlet Gilia



Lewisia columbiana

Columbia Lewisia



Trond Steen

Lewisia cotyledon
Siskyou lewisia



Lewisia rediviva

Bitterroot



Trond Steen

Lewisia tweedyi
Tweedy's lewisia



Linum lewisii

Blue Flax



Lupinus polyphyllus
Bigleaf Lupine



sericeusLupinus
Silky lupine



Lupinus wyethii
Wyeth Lupine



Mentzelia laevicaulis
Blazing Star



Mirabilis multiflora
Wild Four o'clock



Monardella odoratissima

Coyote Mint



Oenothera caespitosa
Tufted Evening Primrose



Oenothera macrocarpa
Ozark Evening Primrose



Oenothera pallida
Pale Evening Primrose



Oenothera speciosa
Showy Evening Primrose



Penstemon cardwellii
Cardwells Penstemon



Penstemon davidsonii
Davidson's Penstemon



Penstemon deustus
Hot Rock Penstemon



Penstemon eatonii
Firecracker Penstemon



Penstemon fruticosa

Shrubby Penstemon



Penstemon gairdneri
Rock Penstemon



Penstemon hirsutus
Hairy Penstemon



Penstemon palmeri
Palmer's Penstemon



Penstemon pinifolius
Pineleaved Penstemon



Penstemon procerus

Small-flowered Penstemon



Penstemon pruinosus
Chelan Penstemon



Penstemon richardsonii
Cut-leaved Penstemon



Penstemon speciosus
Showy Penstemon



Penstemon strictus

Rocky Mountain Penstemon



Penstemon venustus
Lovely Penstemon



Penstemon whippleanus

Whipple's Penstemon



Phacelia sericea
Silky Phacelia



Ratibida columnifera
Prairie Coneflower



Sedum lanceolatum
Lance-leaved Stonecrop



Sphaeralcea munroana

Orange Globemallow



Wyethia amplexicaulis
Mule's Ears



- Plant list compiled by Ted Alway,
Derby Canyon Natives, Peshastin, WA
- Some photos by Paul Slichter, Thayne
Tuason, Trond Steen and Cynthia
Calbick

