

	W	Ou	r Program Priorities		v
3	Climate Change: We teach ways to create resilient landscapes that are adapted to our changing climate.		Soil Health: We encourage building healthy soils to prevent depletion and ensure the long-term viability of local food security & natural resources.		Plant Biodiversity: We promote stewardship of diverse ecosystems through invasive species management, native species conservation and restoration in landscapes.
	Clean Water: We promote integrated pest management to minimize polluted runoff.	%	Pollinators: We teach ways to help native bees and other pollinators thrive in home and community landscapes.		Nearby Nature: We seek to increase access to plants, green spaces, and public landscapes to benefit the health & well-being of all members of our communities.
	Water Conservation: We promote water-wise gardening and landscaping practices to conserve water.	8	Local Food: We promote sustainable techniques to growing local food to improve individual & community health and wellness.	0	Wildfire Preparedness: We teach landscaping principles to reduce the risk of loss due to wildfire.





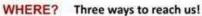


WSU Cowlitz Master Gardeners

cowlitzmastergardener@gmail.com

360-577-3014 Ext 1





NAME OF TAXABLE

Cowlitz County

360-577-3014 Ext.1

cowlitzmastergardener@gmail.com

Extension Office: 304 Cowlitz Way, Kelso, WA

WHEN? Email any time

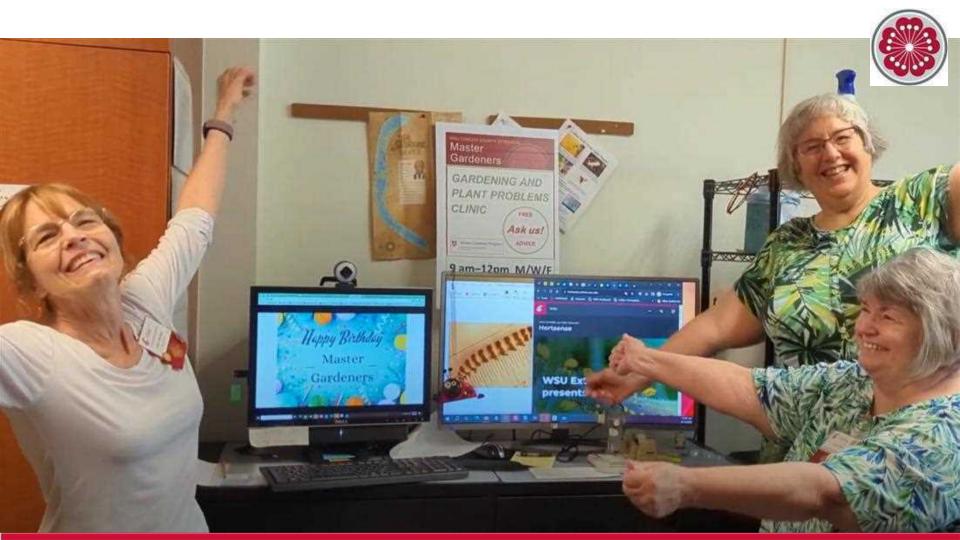
Office: 10 am - 12pm Mar.-Oct.- MWF

Nov.-Feb.- Wed.

Send your photos. Bring your plant & insect specimens!



ADVICE



Visit our website

Tons of great gardening information Recordings and slides from past workshops.

cowlitzcomg.com/workshops-videos



UPCOMING WORKSHOPS



HAVE A GARDENING PROBLEM: ASK A MASTER GARDENER!



SUBSCRIBE TO OUR YOUTUBE CHANNEL-SEE WORKSHOPS YOU MISSED!





MONTH-BY-MONTH GARDEN TIPS



LEARN WITH US







LANDSCAPE GARDENING



FRUITS



VEGETABLE GARDENING



LAWNS/TURE/PASTURE





COMPOSTING



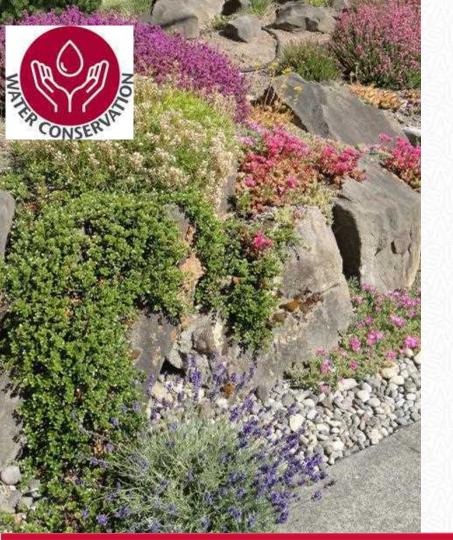
POLLINATORS, SPIDERS, BENEFICIALS, INSECT PENTS



HOW-TO DEMONSTRATIONS for adults and kids



WEEDS





Water-efficient Landscaping





Why use water-efficient landscaping in home gardens?

- Save money on water bills
- Environmental concerns-protect our water supply
- Save time and labor maintaining the garden
- Try something new
- Hotter summers are hard on my existing trees, shrubs, and flowers.

What we'll be talking about

- It's wet here--why worry?
- Key concepts of water-wise gardening
 - 1) Planning and design
 - 2) Soil that works
 - 3) Turf that works
 - 4) right plant right place
 - 5) smart watering
 - 6) Why mulch?
 - 7) Maintaining your garden
- Plant Choices

It's wet here--why worry about water?



It's getting warmer around here--about 2° in the past 100 years.

Seasonal streamflow timing changes

- Less snow, more winter rain, less winter snowpack
- More water in rivers in winter, and <u>less in summer when it's</u> needed.
- Population growth water use
- Our water use limits the water that returns to rivers and stream to support fish, native plants, and wildlife

Our water supply comes from our streams and rivers!

Water-efficient (waterwise) landscaping

- •Dry summers-tough on most of our water guzzling plants
- "Summer-dry "climate plants are "sippers."
- Native plants
- •Plants from "summer dry" climates
 - Western North and South America, Australia, and the Mediterranean
- Lots of choices for eye pleasing color, diversity, and texture
 - Bulbs Native Plants Herbs Ornamental Grasses Selected lists of trees, shrubs & vines

Misconceptions







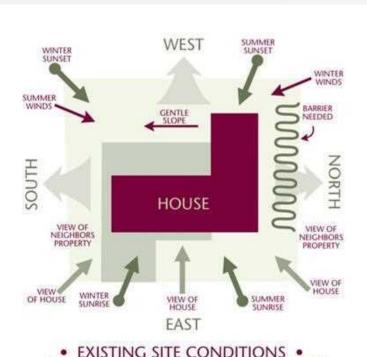
Erysimum, Artemesia, Rosa

Key concepts of water-wise gardening



1) Planning and design

- 2) Soil that works
- 3) Turf that works
- 4) Right plant right place
- 5) Smart watering
- 6) MULCH!
- 7) Maintaining your garden



https://www.corvallisoregon.gov/publicworks/page/

SAND IN IT, FAIR TO POOR DRAINAGE. CHECK WITH

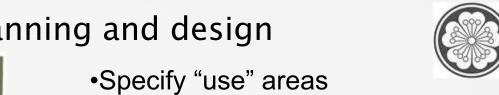
https://www.corvallisoregon.gov/publicworks/page/ water-efficient-plant-guide

Planning and design



- It can be really tempting to start planting right away!
- Create a plan
- Site inventory--All-seasons checkup
- Install your landscape in phases--avoid \$\$ mistakes

Planning and design



- GARDEN SHED RECREATION/ACTIVE AREA . OPEN AREA POSSIBLE VEGTABLE GARDEN BR **OUTDOOR LIVING AREA** TRANSITION/ BUFFER AREA . EATING AREA/SOCIAL AREA В BAR-BE-QUE/COOKING DR WORK SERVICE AREA • TRASH STORAGE K LR · POTTING G PUBLIC/ENTRANCE AREA ATTRACTIVE ENTRANCE PARTIAL ENCLOSURE AT ENTRANCE FOR SEMI-PRIVACY
 - DIAGRAM SPACE NEEDS

https://www.corvallisoregon.gov/publicworks/page/ water-efficient-plant-quide

- Connecting spaces -paths?
- Environment
- microclimates--
 - Summer shade, breezes
 - Warm winter sun
 - Wind protection

ook at books, around your neighborhood, internet, MG demonstration gardens, UW **Botanical Garden**

Great ideas here

Key concepts of water-wise gardening

- 1) Planning and design
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Soil that works



- This step is ESSENTIAL for success.
- Good soil provides infrastructure support, moisture, moisture retention, air, nutrients for the plants and the soil critters.
- Roots need air and water. 40-60% of soil volume is spaces 'pores" between soil particles.
 - Home construction--topsoil removed, soil compaction
 - If compaction is less than 10 inches deep, a chisel plow can be used to break up the compacted layer.
 - Clay soil--resist tilling! Add organic matter to TOP of soi!

Soil that works



Soil compaction



Drainage



Soil that works



- So what can we do?
- Get a soil test!
- ADD ORGANIC MATTER!
 - Remediates compaction
 - Improves moisture retention
 - improves health of soil organisms
 - Soil will supply more nutrients, less fertilizer needed.
 - Incorporate compost to a depth of 6-8 inches and add top layer



Yard trimmings compost
Leaves from deciduous trees
Crop residues
Manures and manure composts
Separated dairy manure solids

^{*}Improving Garden Soils with Organic Matterhttps://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/ec1561.pdf



Tips for turf and high use areas

- Plan your lawn where it will be most useful.
- Plan it so you can irrigate it easily.
- Edge your lawn for neatness and easier mowing.
- Place thirstiest plants (like annuals) closest to the lawn.
- Plant groundcovers, not grass, on slopes.
- Allow your lawn to go dormant in the summer.



- Grass is the thirstiest and most labor intensive element of most landscape designs.
 - 100' x 100' lawn uses 6,230 gallons of water each week
- Plan turf areas carefully for various activities.
- Consider adding hardscape areas, groundcovers, low water need plants, mulch and ecolawn mixes to existing turf areas.
- Replace some of your lawn with water-permeable patio areas--wood, rock, pavers, gravel



How to get rid of your lawn

- Cut your lawn as short as you can in summer--scalp it!
- 2. Cover the area with a very thick layer of arborist wood chips--8-12 inches.
- 3. Wait--Check after 4 weeks. Warm and moist conditions are best to hurry decomposition. When it's easy to dig through it, it's time to -->
- 4. Plant! Uncover the area to dig your hole, plant, and re-cover with the mulch.

https://gardenprofessors.com/how-to-get-rid-of-your-lawn/





WaterWise Landscape Guide https://www.bendoregon.gov/government/departments/utilities/conservation/waterwise-guides

https://ptlawnseed.com/collections/eco-and-alternative-lawns

Protime Lawn Seed
https://ptlawnseed.com/collections/eco-and-alternative-lawns



PT 701 Let It Grow Grasses--A No Mow 516.95



PT 770 Water Less Eco-Lawn Mix \$24.95



PT 764 Verdant Lawn 524.95



PT 702 Lef It Bee--A No Mow \$17.95



PT 706 Herb de Lawn



PT 705 Xeriscope Lawn Alternative



PT 710 Flowering Meadow Mix



PT 712 Butterfly & Hummingbird Meadow Mix

Turf that works--Eco-lawns



- Includes a variety of plant species like clovers and flowers, not just grass.
- Clovers in ecology lawns naturally enrich the soil with nitrogen, reducing the need for fertilizers.
- More resilient to drought and diseases compared to regular grass lawns.
- Once established, eco-lawns stay green even during dry periods.

- Frequently asked questions about Eco-lawns
- More tips

Turf that works--Eco-lawns



- Prepare the soil using your preferred method (e.g., sod cut, solarize, arborist wood chips, sheet mulch) and add necessary amendments like lime or compost and an organic starter fertilizer.
- Eco-lawns with flowers and herbs thrive when sown on bare soil.
- You can overseed into mature sod by creating bare spots for seed-to-soil contact, but newly laid sod should root before overseeding









Reduce the size of your lawn

- Start small--replace a portion of your lawn with planting beds and low water and/or native plants. (4' x 4')
- Groundcovers, especially evergreen ones, can define sharp angles and driveway strips, and are a must on slopes.
- Ornamental grasses- stunning colors, sizes, heights, growing habits, and textures. Cut back in late winter to keep size.

Groundcovers



- Kinnikinnik
- Angelina Stonecrop
- <u>Coastal Strawberry</u> (Fragraria chiloensis)
- Cotoneaster dammeri (pronounced "koe TOE nee ass ter")

You can search according to the site you want to plant, sun/drought tolerant, etc.

http://www.pnwplants.wsu.edu/Search.aspx

This is Portland Nursery's excellent guide to other groundcovers.

https://portlandnursery.com/docs/groundcovers/GroundCovers.pdf

Groundcovers







Turf th





Key concepts of water-wise gardening

- 1) Planning and design
- 2) Soil that works
- 3) Turf that works
- 4) Right plant right place
- 5) Smart watering
- 6) Why mulch?
- 7) Maintaining your garden

Right plant right place

- Remember your microclimates?
 - USDA Hardiness zones--10° increments
- Designate watering zones-high, medium, low
 - Plants with similar water, light, and soil needs together
- High water needs--closest to water source
- Medium water needs--may need occasional supplemental watering in addition to rainfall
- Low water needs--usually little or no additional water after established--locate on landscape perimeter

Right pla









Figure 8. Group plants with similar water, soil and sunlight requirements.

Right plant right place



- Do your homework!
- Know your plants' light needs--where is the sun IN SUMMER?
- Full sun minimum 6 hours.
- Light shade three and five hours of direct summer sun
- Partial shade two hours of direct sun each day or shaded for at least half the day
 - azaleas, rhododendrons and macrophylla hydrangeas.
- Full shade less than an hour of direct sunlight each day or dappled light for most of the day
- Deep shade--no direct or indirect light--under your porch

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Smart watering



- Least effective: overhead watering
 - evaporation
 - Increases plant disease
 - no control over actual soil moisture
- Drip irrigation emitters
 - more control for individual plants and limits weeds
- Soaker hose
 - Good for watering densely planted areas
- Small sprinklers
 - General areas
 - Use timer for time duration--not same time each day.

Smart watering



- Water deeply and less frequently. Why?
- Check--if water is running off surface, water more slowly.
- Water to the weather--plants need more in high heat, low humidity.
- Lawn--thirstiest plants in your landscape!
 - Tuna can at ground level--time sprinkler for 1 inch
 - 1 inch per week, divided into 5 sessions of 2/10 inch

NOTE: All new "dry-summer" plants will require watering for the first 1-3 years as they become established, but will require much less in following years.

Smart Watering



- Prioritize your needs
 - Spend your water resources wisely. E.g., \$\$ trees, shrubs
- Rely on perennials for summer color. They have better developed root systems than annuals and can withstand dryer conditions.

Dogwoods are shallow rooted trees, and leaf scorch may occur on foliage after severe drought.

Joey Williamson, @2018 HGIC, Clemson Extension

Smart Watering



- Familiarize yourself with the signs of drought stress
 - Soil too dry OR too wet
 - If soil is dry and hard, water.
 - Burnt leaves, especially tips and edges
 - premature leaf drop
- "Mid day wilt"- If your soil is damp, save your water.
- Cut your losses and move on.
 - Trim off dried leaves
- Learn from your mistakes!



Dogwoods are shallow rooted trees, and leaf scorch may occur on foliage after severe drought. Joey Williamson, @2018 HGIC, Clemson Extension

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Mulching



- Mulch options
 - Organic: aged manure, compost, bark, or wood chips (firewise 1st choice!)
 - Inorganic: landscape cloth, river rock, grave;
- Reduces evaporation--keeps soil moist longer
- Weed control--less competition
- Organic mulch
 - Moderates soil temperatures
 - Improves soil structure and soil organisms
 - Releases nutrients into soil as it decomposes
- 2-4 inches, keep 2 inches away from base of plant

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Maintain your landscape

- Visit your plants frequently.
 - Pruning, pest control, fertilizing
- Weed if necessary.
- Maintain irrigation system.
 - Right amount, right time, right place!
- · Aerate your lawn annually, and thatch if necessary.



A drought tolerant plant is

A plant which, after a short establishment period, will grow and flower normally with minimal or no supplemental irrigation.

Plant selection for **year-round interest**

- Native flowering plants
- Bulbs
- Flowering shrubs-3 seasons
- •Plant in large groupings of similar water needs needs

Broadleaf Trees Evergreen Trees Shrubs Bulbs **Perennials Ground Covers Ornamental** Grasses

Plant choices

Plants they mostly get by on annual rainfall ce established) will be adapted to local conditions and won't require as much water or work to keep them happy.

- Native plants placed in similar native habitat area
- Plants from a "summer dry" climate
- Place plants close together, so the leaves will help to protect the soil and keep weeds down.
- Low growing varieties are best--they lose less moisture to transpiration--and are more "firewise."



Neil Bell's Garden Arctostaphylos, Grevillea, Cistus, Pittosporum



Photos by Neil Bell

Ceanothus 'Anchor Bay', Juniperus deppeana, Berberis (barberry)

https://extension.orgpostote.ods/hitra/default/files/2018-07/watenese plants for willamette valley Lindscapes compressed.pd





WaterWise gardens can be full of color and interest and still be drought tolerant

Photos: Neil Bell

Erysimum, Artemesia, Rosa



Halimium, Salvia



Lavendula cultivar



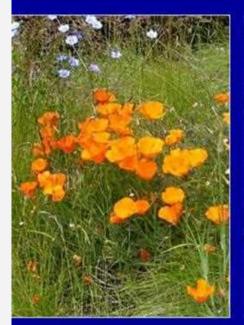
Lavendula angustifolia

Rosmarinus officinalis, rosemary

https://extension.oregonstate.edu/sites/def autt/files/2018-07/waterwise_plants_for_willamette_valley_ Landscapes_compressed.pdf

Plant choices Selected Annuals









Clarkia sp. Photo: Neil

Bell

Helianthus annuus Sunflower

http://www.wsu.edu/~lohr/

wcl/

Eschscholzia californica California poppy http://www.wsu.edu/~ lohr/wcl/



Selected Perennials & Subshrubs



Euphorbia sp.



Helianthemum, rock rose



Epilobium canum (Zauchneria californica), California fuschia

https://extension.oregomatate.edu/sites/default/files/2018-07/waterwise_plants_for_willamette_valley_landscapes_compressed.pd

Photos: Neil Bell

Plant choices Vines





Wisteria Photo: Neil Bell

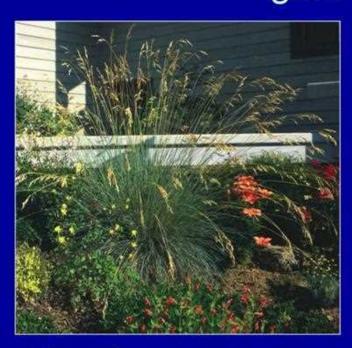
https://extension.oregonstate.edu/sites/default/fles/2018-07/waterwise_plants_for_willamette_valley_landscapes_compressed.pdf



Vitis vinifera 'Purpurea' http://www.huntingtonbotanical.org/Wh atsInBloom/dec05/dec05-Images/157.jpg

Plant choices grasses





Helictotrichon sempervirens
Blue oat grass
http://www.wsu.edu/~lohr/wcl/

https://extension.oregonstate.edu/sites/dofault/files/2018-07/waterwise plants for willametic valley landscapes compressed.p



Northern sea oats,

Chasmanthium latifolium

http://www.botany.wisc.edu/garden
/db/plantimages/Chasmanthium la
tifolium L.JPG

Plant choices More Groundcovers





Fragaria chiloensis, Beach strawberry http://oregonstate.edu/d ept/ldplants/frch3.htm



Juniperus horizontalis

http://oregonstate.edu/dept/ldplants/juho1.htm



Sedum spathulifolium,

spoon-leaf stonecrop http://flightli ne.highline.edu/gbarclay /bloom2000/sedum.jpg





Before After



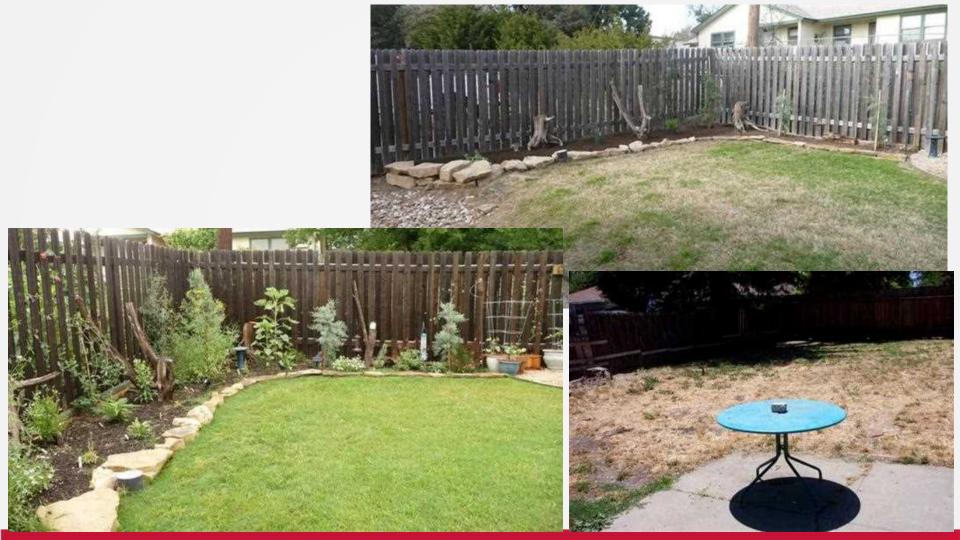


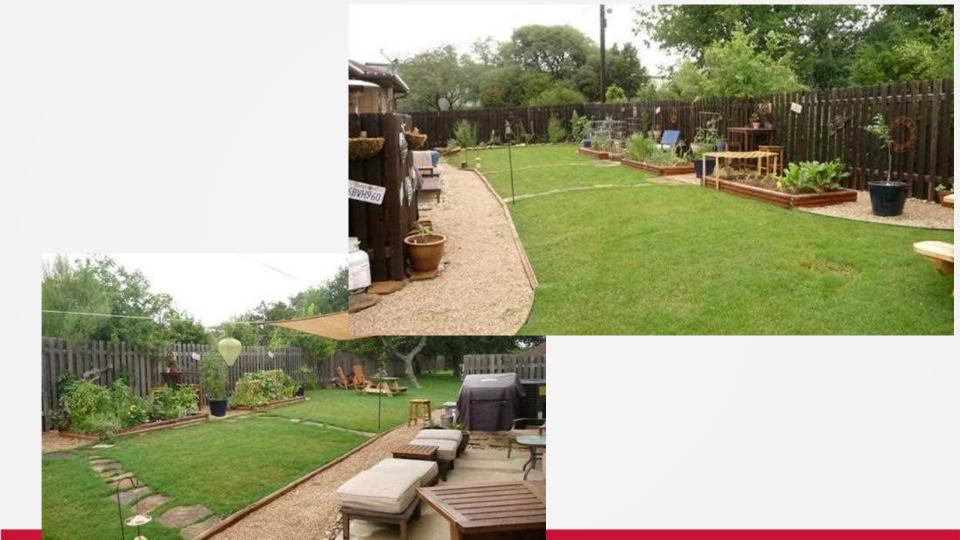
























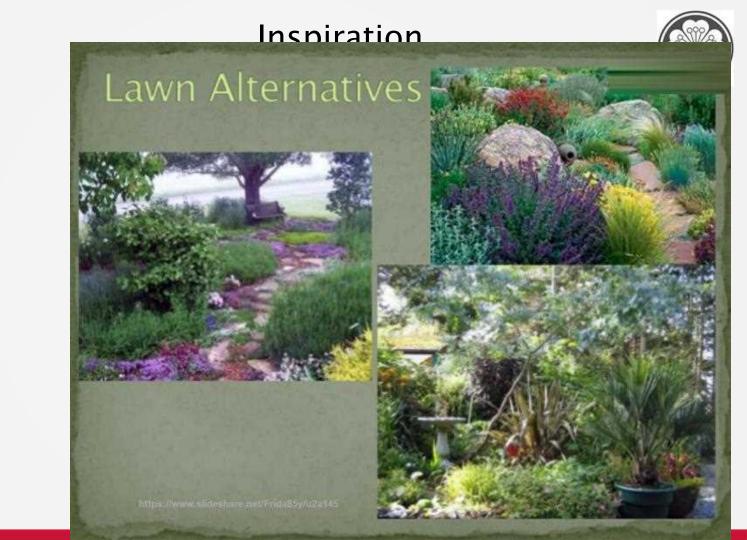




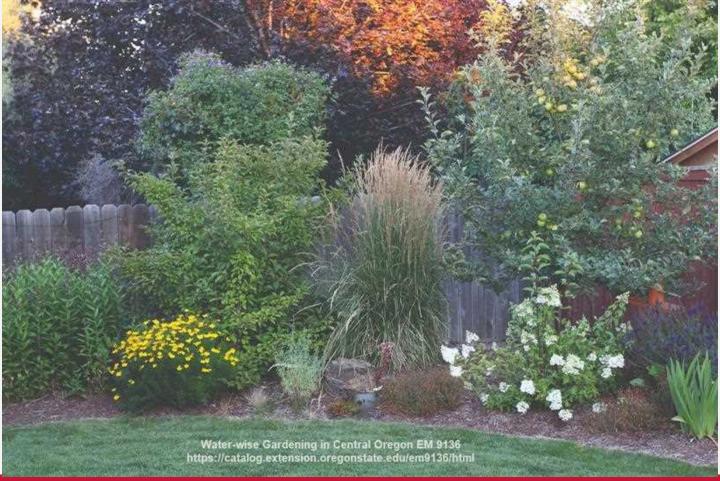




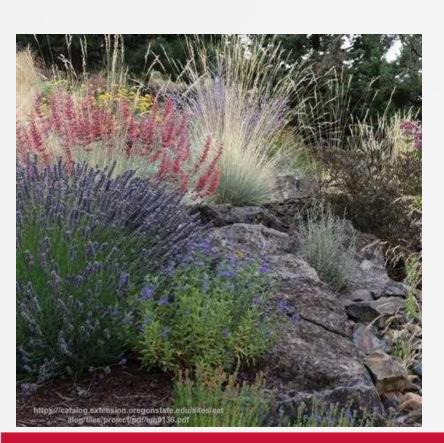




















https://catalog.extension.oregonstate.edu/sites/catalog/ites/pcoiect/pdf/em9136.pdf













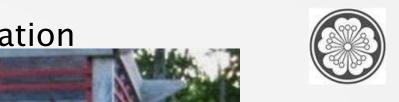


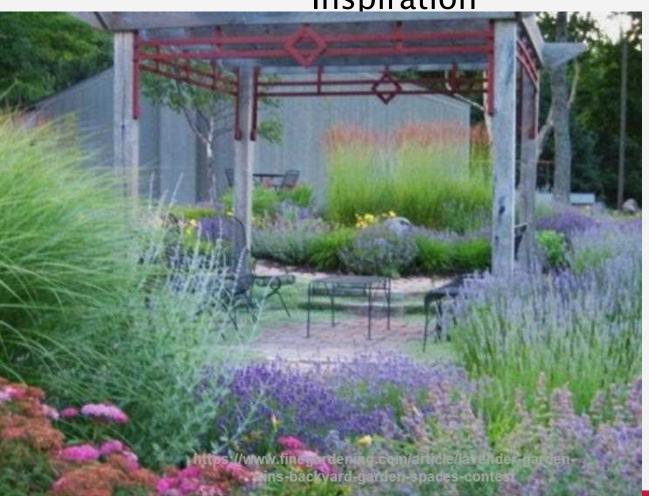


Inspiration



Inspiration





Take homes



- It's wet here--why worry?
- Key concepts of water-wise gardening
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- Plant Choices



For information about **becoming a WSU Extension Master Gardener in**

Cowlitz Co., contact Gary Fredricks, garyf@wsu.edu, 360-577-3014 ext. 3





Creating waterwise landscapes—"How-to"

Drought Tolerant Landscaping for Washington State

https://www.whidbeycd.org/uploads/1/1/6/8/11683986/drought_tolerant_landscaping_wsu_extension-min.pdf

Waterwise gardening in Central Oregon

https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/em9136.pdf

In-depth Waterwise Landscaping—This is great—sample plans and suggestions http://region8water.colostate.edu/PDFs/waterwis.pdf

Good, short overall view of planning a waterwise landscape

https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/em9125.pdf

Incorporate "Firewise" guidelines: https://www.bartlett.com/resources/fire-safe-landscaping.pdf

Watershed approach to landscape design

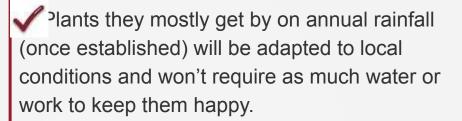
https://www.bendoregon.gov/home/showpublisheddocument/49465/637535588463330000

Rain Garden Handbook for Washington

https://seagrant.oregonstate.edu/file/376/download?token=E7k-EFWa

- Broadleaf Trees
- Evergreen Trees
- Shrubs
- Bulbs
- Perennials
- Ground Covers
- Ornamental Grasses

Plant choices



- Native plants placed in similar native habitat area
- Plants from a "summer dry" climate
- Place plants close together, so the leaves will help to protect the soil and keep weeds down.
- Low growing varieties are best--they lose less moisture to transpiration--and are more "firewise."





Landscape Design Basics

Planning the Home Landscape https://aggie-horticulture.tamu.edu/extension/homelandscape/home.html

Basic landscaping templates for water-efficient gardening

https://www.slideshare.net/zavesond/waterwise-design-templates?next_slideshow=1

Landscape plants for garden spaces https://green2.kingcounty.gov/gonative/Plan.aspx

Great examples/Inspiration

https://www.slideshare.net/zavesond/waterwise-garden-styles-pp-tminimizer-1863261

Eye-candy—waterwise landscaping is BEAUTIFUL!

https://extension.oregonstate.edu/sites/default/files/2018-07/city of newberg water-wise garden.pdf

Gorgeous collection of examples on Pinterest

https://www.pinterest.com/OctoGreen/water-wise-landscaping/Soil and Mulch

Soil Testing http://www.simplysoiltesting.com/

FREE Arborist Woodchips

Improving Garden Soil with Organic

Matter--https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/ec1561.pdf



Soil and Mulch

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Matter--https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/ec1561.pdf

Growing Healthy Soil

https://snohomishcountywa.gov/DocumentCenter/View/7257/Growing-Healthy-Soil?bidId=

Watering

Watering Home Gardens and Landscape Plants

http://pubs.cahnrs.wsu.edu/publications/wp-content/uploads/sites/2/publications/eb1090.pdf

Drip Irrigation for the Home and Garden

http://pubs.cahnrs.wsu.edu/publications/wp-content/uploads/sites/2/publications/fs030e.pdf

Conserving Water in your Yard and Garden (good instructions on tree watering) https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/em9125.pdf

Watering priorities in the landscape—Inspiration and guidelines

https://estelogrextension.comerconstetesedu/sites/estelog/files/poiset/pdf/em9488.cof/



Lawns

How to get rid of your lawn!

Lawn Care Cheat Sheet

Eco/Alternative lawn options https://ptlawnseed.com/collections/eco-and-alternative-lawns

- Frequently asked questions about Eco-lawns
- More tips
- Detailed directions for preparing and planting an eco-lawn

Water-Wise Groundcovers as Living Mulch to Hide a Dead Lawn

https://www.sunset.com/garden/garden-basics/drought-tolerant-groundcovers-front-yard-landscaping#sedum-rupestre-plant

Waterwise Lawn Alternatives

http://sonomamg.ucanr.edu/Lawn Replacement/Water-Wise Lawn Alternatives/

Resources- Groundcovers



- Kinnikinnik
- Angelina Stonecrop
- <u>Coastal Strawberry</u> (Fragraria chiloensis)
- Cotoneaster dammeri (pronounced "koe TOE nee ass ter")

You can search according to the site you want to plant, sun/drought tolerant, etc. http://www.pnwplants.wsu.edu/Search.aspx

This is Portland Nursery's excellent guide to other groundcovers. https://portlandnursery.com/docs/groundcovers/GroundCovers.pdf



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http://sonomamg.ucanr.edu/Lawn Replacement/Water-Wise Lawn Alternatives/



Plant Choices

EXCELLENT! Comprehensive list of <u>water efficient plants</u>

Introduction Evergreen Trees Perennials

7 Basic Steps Shrubs Ground Covers

Broadleaf Trees Bulbs Ornamental Grasses

USDA Plant Hardiness map search https://planthardiness.ars.usda.gov/PHZMWeb/InteractiveMap.aspx

Great Plant Picks (choose "Plants for a Better Planet" from the column on the left) https://www.greatplantpicks.org/searchnav

Great listing of firewise AND waterwise plant choices for the PNW -- firewise plants that are tagged for low water needs—https://www.firefree.org/wp-content/uploads/2016/02/Fire-Resistant-Plants.pdf

Native plant choices—browse by category and photo https://green2.kingcounty.gov/gonative/Photo.aspx?Act=browse

Monrovia plant search for low water plants

https://www.monrovia.com/shop.html?water_icons=5476&cold_hardiness_zones_filter=



Plant Choices

Plants for Dry Shade https://s3.wp.wsu.edu/uploads/sites/2073/2020/09/Planting-in-Dry-Shade.pdf

Drought-tolerant ground covers

https://www.sunset.com/garden/garden-basics/drought-tolerant-groundcovers-front-yard-landscaping#fescue-grass

Great list of plants, with good description. Separate sections for plants with different needs: Wet Winter/Dry Summer, Drought Tolerant, Native, and Moisture-loving plants https://www.savingwater.org/wp-content/uploads/The-Plant-List.pdf

Books

Sunset Western Garden Book of Landscaping: The Complete Guide to Beautiful Paths, Patios, Plantings, and More The Editors of Sunset

The New Sunset Western Garden Book: The Ultimate Gardening Guide The Editors of Sunset

Gardening in Summer-Dry Climates: Plants for a Lush, Water-Conscious Landscape Nora Harlow