

Water Smart™

LANDSCAPE PRINCIPLES

A proven seven step low maintenance landscaping method results in attractive outdoor living spaces using water smart plants, trees and shrubs.

Research plants and the site in relation to sun, soils, water and maintenance demands. Consider site geography, wildlife, views and privacy.



THE 7 PRINCIPLES

1 Design a Plan – Sketch area including existing and proposed walkways, outdoor spaces, structures and planted areas. Group plants, trees and shrubs with similar light and water needs on the same irrigation zone. Consider how outdoor spaces will be used, and their function to indoor spaces.

2 Amend the Soil – Most plant and turf areas require some organic compost; native plants are the exception. Improve soil during site preparation, especially turf areas for long term water saving and turf health.

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3 Select Low Water Use Plants – A variety of native plants, available through local nurseries, are suitable for water smart landscaping. They are divided into three categories: very low, low, and moderate water use. Consider the long term water demand, fire resistance, mature size and maintenance needed.

4 Create a Practical Lawn Area – Lawns have a place in water smart landscapes. Options include seasonal native grasses, turf, ground covers and native wildflowers. Consider at least 6” of top soil during site prep, estimate long term water demand, maintenance and cost.



5 Install an Irrigation System – Design an efficient watering system during the planning phase. Permit and install the required backflow prevention device. Hydrozone trees, shrubs and turf areas. Adjust watering systems to account for plant maturity, topography and seasonal precipitation.

6 Mulch Top Dress – Install 2 to 3” of mulch or rock over a woven fabric weed barrier. Shredded wood chips and garden compost help conserve soil moisture. Decomposed granite and select rock types work best in unplanted areas. Consider pre-and post-emergent to reduce weed growth.

7 Maintain the Landscape – Seasonal maintenance and an efficient irrigation system will ensure outdoor living areas remain healthy and water smart.

For more information and helpful community links,
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POPULAR LOW WATER USE PLANTS

Save water and reduce maintenance by growing drought-tolerant plants. This list includes xeric options that require little-to-periodic deep watering after three years. Research plant characteristics and mature size when planning a landscape.



TREES

Common Name

Deodar Cedar
Oklahoma Redbud

Chitalpa
Arizona Cypress
Arizona Ash
Thornless Honeylocust

One-seed Juniper
Rocky Mountain Juniper
Austrian Black Pine
Chinese Pistache
London Plane Sycamore
Locust

Botanical Name

Cedrus deodora
Cercis canadensis ‘
Oklahoma’
Chitalpa tashkentensis
Cupressus arizonica
Fraxinus velutina
Gleditsia triacanthos
inermis
Juniperus monosperma
Juniperus scopulorum
Pinus nigra
Pistacia chinensis
Platanus acerfolia
Robinia spp.



SHRUBS

Sagebrush/Wormwood
Butterfly Bush
Blue Mist

Mountain Mahogany
Gray Rabbit Brush
Purple Smokebush
Cotoneaster
Desert Spoon
Apache Plume
New Mexican Privet
Red Yucca
Juniper
Oregon Grape
Fremont Barberry
Bear Grass
Russian Sage

Artemisia spp.
Buddleia davidii
Caryopteris x
clandonensis
Cercocarpus spp.
Chrysothamnus nauseosus
Cotinus coggygria
Cotoneaster spp.
Dasyliion wheelerii
Fallugia paradoxa
Forestiera neomexicana
Hesperaloe parviflora
Juniperus spp.
Mahonia aquifolium
Mahonia fremontii
Nolina microcarpa
Perovskia atriplicifolia

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Common Name

Mugho Pine
Shrubby Cinquefoil
Firethorn
Sumac

New Mexico Locust
Pendulous Yucca

Botanical Name

Pinus mugo
Potentilla fruticosa
Pyracantha spp.
Rhus aromatica, *R. glabra*,
R. trilobata
Robinia neomexicana
Yucca recurvifolia



PERENNIALS

Yarrow
Desert Marigold
Coreopsis Grandiflora
California Poppy
Daylily
Red Hot Poker
English Lavender
Blue Flax
Blackfoot Daisy
Mexican Evening Primrose
Beardtongue
Russian Sage
Sandpaper Verbena

Achillea spp.
Baileya multiradiata
Coreopsis, Tickseed
Eschscholzia californica
Hemerocallis flavum
Kniphofia uvaria
Lavendula angustifolia
Linum lewisii
Melampodium leucanthum
Oenothera berlandieri
Penstemon spp.
Pervoskia atriplicifolia
Verbena rigida



GROUNDCOVERS

Lowfast Cotoneaster
Emerald Gaiety
Blue Carpet Juniper
Buffalo Juniper
Hall's Honeysuckle
Creeping Oregon Grape
Virginia Creeper
Boston Ivy
Germander
Creeping Thyme

Cotoneaster damerii
Euonymus fortunei
Juniperus horizontalis wiltonii
Juniperus sabina
Lonicera japonica halliana
Mahonia repens
Parthenocissus quinquefolia
Parthenocissus tricuspidata
Teucrium chamaedrys
Thymus praecox arcticus



GRASSES

Sideoats Grama
Blue Grama
Buffalograss
Feather Reedgrass
Blue Fescue
Blue Oat Grass
Pink Deergrass
Deergrass
Mexican Feathergrass
Plains Switchgrass
Little Bluestem

Bouteloua curtipendula
Bouteloua gracilis
Buchloe dactyloides
Calamagrostis x acutiflora
Festuca glauca
Helictotrichon sempervirens
Muhlenbergia capillaris
Muhlenbergia rigens
Nassella tenuissima
Panicum virgatum
Schizachyrium scoparium

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TREES AND SHRUBS

Low water use drought tolerant trees and shrubs are an integral part of water smart landscaping.

This list includes xeric options that require little-to-periodic deep watering after three years. Research plant characteristics and mature size when planning a landscape.



TREES

Common Name	Botanical Name
Atlas Cedar	<i>Cedrus atlantica</i>
Deodar Cedar	<i>Cedrus deodora</i>
Common Hackberry	<i>Celtis</i> spp.
Oklahoma Redbud	<i>Cercis canadensis</i> 'Oklahoma'
Desert Willow	<i>Chilopsis linearis</i>
Chitalpa	<i>Chitalpa tashkentensis</i>
Arizona Cypress	<i>Cupressus arizonica</i>
New Mexico Privet	<i>Forestiera neomexicana</i>
Arizona Ash	<i>Fraxinus velutina</i>
Thornless Honeylocust	<i>Gleditsia triacanthos inermis</i>
Kentucky Coffeetree	<i>Gymnocladus dioica</i>
Juniper	<i>Juniperus</i> spp.
Black Hills Spruce	<i>Picea densata</i>
Bristlecone Pine	<i>Pinus aristata</i>
Austrian Black Pine	<i>Pinus nigra</i>
Chinese Pistache	<i>Pistacia chinensis</i>
Arizona Sycamore	<i>Platanus wrightii</i>
Chokecherry	<i>Prunus virginiana</i>
Emory Oak	<i>Quercus emoryi</i>
Gambel Oak	<i>Quercus gambelii</i>
Locust	<i>Robinia</i> spp.
Chinese Elm	<i>Ulmus parvifolia</i>



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SHRUBS

Common Name	Botanical Name
Manzanita	<i>Arctostaphylos</i> spp.
Sagebrush/Wormwood	<i>Artemisia</i> spp.
Four-wing Saltbush	<i>Atriplex canescens</i>
Butterfly Bush	<i>Buddleia davidii</i>
Desert Bird of Paradise	<i>Caesalpinia gilliesii</i>
Siberian Peashrub	<i>Caragana arborescens</i>
Blue Mist	<i>Caryopteris x clandonensis</i>
Mountain Mahogany	<i>Cercocarpus</i> spp.
Fernbush	<i>Chamaebatiaria millefolium</i>
Gray Rabbit Brush	<i>Chrysothamnus nauseosus</i>
Purple Smokebush	<i>Cotinus coggygia</i>
Cotoneaster	<i>Cotoneaster</i> spp.
Cliffrose	<i>Cowania mexicana</i>
Desert Spoon	<i>Dasyliion wheelerii</i>
Silverberry	<i>Elaeagnus pungens</i>
Turpentine Bush	<i>Ericameria laricifolia</i>
Apache Plume	<i>Fallugia paradoxa</i>
New Mexican Privet	<i>Forestiera neomexicana</i>
Red Yucca	<i>Hesperaloe parviflora</i>
Juniper	<i>Juniperus</i> spp.
Tatarian Honeysuckle	<i>Lonicera tatarica</i>
Oregon Grape	<i>Mahonia aquifolium</i>
Fremont Barberry	<i>Mahonia fremontii</i>
Heavenly Bamboo	<i>Nandina domestica</i>
Bear Grass	<i>Nolina microcarpa</i>
Russian Sage	<i>Perovskia atriplicifolia</i>
Mugho Pine	<i>Pinus mugo</i>
Shrubby Cinquefoil	<i>Potentilla fruticosa</i>
Western Sand Cherry	<i>Prunus besseyi</i>
Firethorn	<i>Pyracantha</i> spp.
Scrub Live Oak	<i>Quercus turbinella</i>
California Buckthorn	<i>Rhamnus californica</i>
Sumac	<i>Rhus aromatica, R. glabra, R. trilobata</i>
New Mexico Locust	<i>Robinia neomexicana</i>
Rugosa Rose	<i>Rosa rugosa</i>
Autumn Sage	<i>Salvia greggii</i>
Spanish Broom	<i>Spartium junceum</i>
Pendulous Yucca	<i>Yucca recurvifolia</i>



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GRASSES AND PERENNIALS

A water smart landscape is not limited to cacti, succulents, or narrow-leaved evergreens. The perennials and grasses on this list are well adapted to low levels of soil moisture. Prior to planting any grass or perennial, consider researching its suitability at a particular site.



GRASSES

Common Name

Buffalograss
Sideoats Grama
Blue Grama
Feather Reedgrass
Blue Fescue
Blue Oat Grass
Pink Deergrass
Deergrass
Mexican Feathergrass
Indian Ricegrass
Plains Switchgrass
Little Bluestem
Alkali Sacaton

Botanical Name

Buchloe dactyloides
Bouteloua curtipendula
Bouteloua gracilis
Calamagrostis x acutiflora
Festuca glauca
Helictotrichon sempervirens
Muhlenbergia capillaris
Muhlenbergia rigens
Nassella tenuissima
Oryzopsis hymenoides
Panicum virgatum
Schizachyrium scoparium
Sporobolus airoides





PERENNIALS

Common Name	Botanical Name
Yarrow	<i>Achillea</i> spp.
Texas Hummingbird Mint	<i>Agastache cana</i>
Gold Dust	<i>Alyssum saxatile</i>
Butterfly Weed	<i>Asclepias tuberosa</i>
Desert Marigold	<i>Baileya multiradiata</i>
Chocolate Flower	<i>Berlandiera lyrata</i>
Chamomile	<i>Chamaemelum nobile</i>
Spider Flower	<i>Cleome spinosa</i>
Coreopsis	<i>Coreopsis</i> spp.
Purple Coneflower	<i>Echinacea purpurea</i>
Buckwheat	<i>Eriogonum</i> spp.
California Poppy	<i>Eschscholzia californica</i>
Blanket Flower	<i>Gaillardia</i> spp.
Gaura	<i>Gaura lindheimeri</i>
Snakeweed	<i>Gutierrezia Sarothrae</i>
Daylily	<i>Hemerocallis flavum</i>
Bearded Iris	<i>Iris germanica</i>
Red Hot Poker	<i>Kniphofia uvaria</i>
English Lavender	<i>Lavendula angustifolia</i>
Blue Flax	<i>Linum lewisii</i>
Blackfoot Daisy	<i>Melampodium leucanthum</i>
Giant 4 O'clock	<i>Mirabilis multiflora</i>
Bee Balm	<i>Monarda</i> spp.
Evening Primrose	<i>Oenothera</i> spp.
Beardtongue	<i>Penstemon</i> spp.
Russian Sage	<i>Pervoskia atriplicifolia</i>
Paper Flower	<i>Psilostrophe</i> spp.
Sage	<i>Salvia</i> spp.
Grey Santolina	<i>Santolina chamaecyparissus</i>
Stonecrop	<i>Sedum</i> spp.
Hen and Chicks	<i>Sempervivum</i> spp.
Globemallow	<i>Sphaeralcea</i> spp.
Scarlet Hedgenettle	<i>Stachys coccinea</i>
Angelita Daisy	<i>Tetraneuris acaulis</i>
Germander	<i>Teucrium chamaedrys</i>
Thyme	<i>Thymus</i> spp.
Sandpaper Verbena	<i>Verbena rigida</i>



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INVASIVE SPECIES

AGGRESSIVE PLANTS

As we work to save water by thoughtfully selecting plants for our landscapes, it is important to remember that the vigorous growth characteristics of some plants can create problems. Aggressive plants tend to dominate areas and spread beyond their intended coverage. These plants were introduced because they had value: ornamental, erosion control, wind breaks and other landscape functions. However, we have learned that some plants can become aggressive in the landscape and should be viewed with caution.



Common Name	Botanical Name
Tree of Heaven*	<i>Ailanthus altissima</i>
Giant Reed*	<i>Arundo donax</i>
Rabbit Brush	<i>Chrysothamnus nauseosum</i>
Pampas Grass	<i>Cortaderia selloana</i>
Russian Olive	<i>Elaeagnus angustifolia</i>
Weeping Lovegrass	<i>Eragrostis curvula</i>
Mexican Feathergrass	<i>Nassella tenuissima</i>
Russian Sage	<i>Perovskia atriplicifolia</i>
Saltcedar*	<i>Tamarix ramosissima</i>
Siberian Elm	<i>Ulmus pumila</i>
Bigleaf Periwinkle	<i>Vinca major</i>

*DO NOT PLANT – HIGHLY INVASIVE



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NOXIOUS/INVASIVE WEEDS

The word “noxious” designates a plant that is particularly problematic – so much so, it has a law or regulation restricting its use. The word “invasive” designates a plant that has the characteristics of a noxious weed, but has not been designated as such.

Noxious/invasive plants arrived in North America in a variety of ways. Some were brought intentionally to use in erosion control, for their quick rates of growth, or as forage plants.

Others were introduced unintentionally in seed, with animals, or inadvertently aboard ships. Once

established, noxious/invasive plants reduce biological diversity and can have severe impacts on both plant and animal communities.



Common Name	Botanical Name
Russian knapweed	<i>Acroptilon repens</i>
Hoary cress	<i>Cardaria draba</i>
Diffuse Knapweed	<i>Centaurea diffusa</i>
Malta starthistle	<i>Centaurea melitensis</i>
Yellow starthistle	<i>Centaurea solstitialis</i>
Spotted knapweed	<i>Centaurea stoebe ssp. micranthus</i>
Bull thistle	<i>Cirsium vulgare</i>
Leafy Spurge	<i>Euphorbia esula</i>
Dalmatian toadflax	<i>Linaria dalmatica</i>
Scotch thistle	<i>Onopordum acanthium</i>

RESOURCES

Arizona Invasive Species/Noxious Weed Information
www.ecbarranch.com/adeq%206001/Weeds/handbook.htm

Arizona Noxious Weed List
<http://www.azda.gov/PSD/quarantine5.htm>

NRCS Plant Material Centers
<http://plants.usda.gov>

Yavapai County
University of Arizona Cooperative Extension
928-445-6590
www.cals.arizona.edu/yavapai/



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PLANTING TIPS

Select plants that are suitable for water smart landscapes. When watered correctly, these plants require less water than their higher-use counterparts. Select trees and shrubs of varying growth habits and textures to add interest and seasonal changes to the landscape.



1 A successful water smart landscape begins with a good design. Water efficiency in the landscape can be maximized if it is considered in the initial planning phase. For assistance, consider contacting a local landscape designer or nursery professional.

2 Select and install an efficient irrigation system.

3 Research plant species to determine appropriate time to plant.

4 Consider a soil analysis. Contact the County Cooperative Extension Office for more information. Amend soil, as necessary.



5 Dig a drainage test hole (one cubic foot) and fill with water. Allow to drain. Refill with water. Note the drainage characteristics of the soil. If water has not drained within twelve hours, the soil is poorly drained and may not be suitable for plantings without drainage modification.

6 Irrigation delivery rates will differ based on soil drainage. Clay soils require less volume and frequency of water than granite-based or sandy soils.

7 Make certain that plants with similar water needs are placed on the same irrigation zone.



8 Clear all planting areas of weeds. Consider mulching or installing a layer of weed barrier covered by decorative rock or gravel to control weed growth. Avoid weed barrier directly underneath trees and shrubs.

9 Research mature plant size. Leave enough area between each plant to allow for future growth.

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10 Make sure mature plants will not grow too close to buildings or interfere with power lines.



11 A planting hole should be as deep as the rootball and 2 to 3 times as wide. The top of the rootball should be even with the surface when placed in the hole.

12 If plant is root bound, roots will be visibly circling the rootball. Lightly loosen outside roots prior to planting.

13 Water immediately after planting and closely watch for signs of stress for the first several months. If signs of stress are apparent, seek advice from local landscape or nursery professionals or the County Cooperative Extension Office.

14 Immediately remove weeds that grow around new plants. Weeds compete for water and nutrients.



15 Fertilize sparingly. Too much fertilizer may harm plants. Many drought tolerant plants require little or no fertilization. Research specific plant needs to determine type of fertilizer needed and frequency of application.

16 Prune with care to preserve a plant's natural shape. Learn proper pruning techniques for the plants you have chosen.

17 New plants have a smaller root zone and require more frequent watering than established plants.

18 Landscapes require regular maintenance. A well maintained landscape and irrigation system will ensure outdoor living areas remain healthy and water smart.

19 A plant's leaves provide clues to its health.

- A dull or bluish leaf means the plant is stressed for water.
- Wilting is a result of under or over watering, over fertilization, or incorrectly applied herbicide. Dig to find the cause, and aerate around the root, if necessary.
- Dead leaves can be the product of hot, windy conditions when a plant needed water. Dead spots are a sign of sun burning.
- Brown edges can be caused by poor drainage, excessive salts in the soil, or compacted soil.
- Older leaves naturally fall from trees, but it can also point to a lack of sunlight or stress after transplant.
- Yellow leaves signify a lack of nitrogen.

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EFFICIENT IRRIGATION

The key to efficient irrigation is to apply only the amount of water a landscape needs. A properly installed and correctly programmed irrigation system will ensure shrubs, trees and groundcovers receive adequate water on a regular schedule. Remember to water deeply, but less often and winterize irrigation systems.



WATER SMART IRRIGATION INCLUDES

- Plants irrigated in zones based on similar water needs
- Automatic controller allowing each zone to be watered on a schedule that can be adjusted for plant needs and season
- Backflow prevention device installed per city code
- Frequent checks for clogged emitters, leaks, broken sprinkler heads, and overspray onto walks and drives
- Annual irrigation consultation by a certified auditor



BASIC IRRIGATION GUIDELINES

- Do not combine spray irrigation with drip irrigation on the same zone.
- Mulch soil surface to reduce evaporation.
- Irrigate established trees and large shrubs at the drip line to encourage a healthy root system. Extend/expand irrigation system as plants grow.
- Avoid mid-day irrigation.
- Make use of automatic control systems.
- Ensure irrigation system is appropriate for plant type (e.g., drip vs. spray).



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LAWN CARE GUIDELINES

- Consider reducing or eliminating large or unused lawn areas.
- Select a grass that is well suited to the area. Buffalo grass or native groundcovers require little or no supplemental irrigation once established.
- Soil preparation for new lawns is critical for health and irrigation efficiency.
- When irrigating, avoid puddling or runoff.
- Water only as much as can be readily absorbed. Consider an irrigation audit to determine proper irrigation scheduling.
- Monitor lawn for moisture stress. Tip: Walk across the lawn, if footprints appear, it is time to water.
- Raise the mower height. Never remove more than one-third of the total height of the grass at any one time.
- Install an irrigation system that allows for the even distribution of water.
- Use fertilizer sparingly to avoid excessive growth.
- Use extreme caution when applying weed-and-feed products, as they can harm nearby ornamental plants.
- Always follow label instructions.
- Adjust irrigation controllers for seasonal changes.



RAINWATER HARVESTING

Rainwater harvesting is a tool to capture and use water (that does not come from the municipal water supply) to supplement landscape water needs. A simple method involves rainwater falling from the roof into a container where it is stored for later use or into a diversion channel where gravity carries it to the planted area(s).



RESOURCES

Harvesting Rainwater for Landscape Use, Patricia H. Waterfall, University of Arizona Cooperative Extension

Rainwater Harvesting for Drylands and Beyond, Brad Lancaster

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Water Smart™

HOUSEHOLD CONSERVATION

Implement proven conservation practices at home to save water and money.

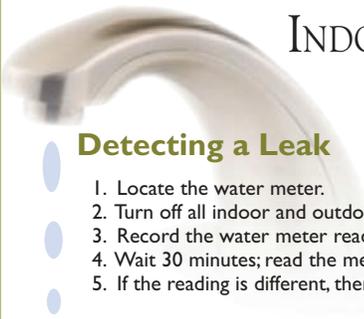
OUTDOOR WATER SAVINGS

- 1 Water only between 8 p.m. and 8 a.m., April 15th through October 1st.
- 2 Water only as rapidly as the soil can absorb.
- 3 Install an automated drip irrigation system.
- 4 Check irrigation system often for clogs or damage; repair or replace immediately.
- 5 Adjust sprinkler heads so that they do not spray onto walkways, driveways, roads or buildings.
- 6 If watering with a hose, set a kitchen timer or alarm clock as a reminder to shut it off.
- 7 Adjust irrigation controllers for seasonal changes.
- 8 Group plants with similar water needs on the same irrigation zone.
- 9 Consider an annual irrigation consultation by a certified auditor.
- 10 Consider reducing or eliminating large or unused lawn areas.
- 11 When adding or replacing a plant, consider a drought tolerant species.
- 12 Plant seasonal flowers in sheltered areas.
- 13 Add mulch on planting beds to reduce evaporation.
- 14 Monitor lawn for moisture stress. Tip: Walk across the lawn, if footprints appear, it is time to water.
- 15 Increase water-use efficiency by watering plants deeply but less often.
- 16 Winterize irrigation systems to avoid costly repairs and water loss.

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- 17 Use a soil probe to determine depth of water infiltration.
- 18 Harvest rainwater to supplement irrigation needs.
- 19 Redirect runoff to landscaped areas.
- 20 Install an automatic irrigation controller.
- 21 Aerate and dethatch lawns as needed to allow water to reach roots.
- 22 Use commercial car washes that recycle water.
- 23 Raise the mower height. Never remove more than one-third of the total height of the grass at any one time.
- 24 Sweep, do not use water to clean walks and driveways.



INDOOR WATER SAVINGS

Detecting a Leak

- 1. Locate the water meter.
- 2. Turn off all indoor and outdoor water using devices.
- 3. Record the water meter reading.
- 4. Wait 30 minutes; read the meter again.
- 5. If the reading is different, there is a leak.

Repairing a Leak

- Check the toilets first. Put 10-15 drops of food dye in the tank and wait 5-10 minutes. If the dye color is in the bowl; there is a leak. The flapper or tank ball is most likely the cause.
- Replace worn out washers in faucets and showerheads.
- Make sure all faucets are turned off. A faucet drip can waste up to 5,148 gallons of water per year.
- Check all household appliances, including the hot water heater and evaporative cooler, for leaks at connection points.
- Make certain the level in the water pan of evaporative coolers is below the top of the overflow pipe.



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CONTACTS & RESOURCES

MUNICIPALITIES

Upper Verde River Watershed Protection Coalition |
www.UVRWPC.org

City of Prescott – 928-777-1130 |
www.prescott-az.gov/services/water/conservation.php

Town of Chino Valley
928-636-7140 | www.chinoaz.net

Town of Dewey-Humboldt
928-632-7362 | www.dewey-humboldt.net

Town of Prescott Valley
928-759-3000 | www.pvaz.net/Index.aspx?page=280
928-759-3070 | Water and Wastewater Utilities

Yavapai County | www.co.yavapai.az.us
928-771-3100 | Prescott and Surrounding Area
928-639-8100 | Verde Valley Area

Yavapai-Prescott Indian Tribe
928-445-8790 | www.ypit.com

CHAMBERS OF COMMERCE

Arizona Department of Commerce
602-771-1100 | www.azcommerce.com

Chino Valley
928-636-2493 | www.chinovalley.org

Prescott
928-445-2000 or 800-266-7534 | www.prescott.org

Prescott Valley
928-772-8857 | www.pvchamber.org

DEMOGRAPHICS

City Data | www.city-data.com

US Census Bureau | www.census.gov



LOCAL

Agua Fria Open Space Alliance |
www.aguafriaopenspace.org

Arizona Department of Water Resources
Prescott Active Management Area
928-778-7202 | www.azwater.gov/prama

Citizens Water Advocacy Group | www.cwagaz.org

Community Supported Agriculture |
www.prescott.edu/csa

www.uvrwpc.org

Farmers Market | www.prescottfarmersmarket.org

Highlands Center for Natural History
928-776-9550 | www.HighlandsCenter.org

NEMO | www.snr.arizona.edu/nemo/index

Prescott Public Library
928-777-1500 | www.PrescottLibrary.info

Prescott Creeks
928-445-5669 | www.PrescottCreeks.org

Yavapai County Cooperative Extension
928-445-6590 | www.ag.arizona.edu/yavapai

Yavapai County Contractor's Association
928-778-0040 | www.ycca.org

Yavapai County Nursery and Landscape Association
Participating nursery and landscape professionals



STATE

The Arboretum at Flagstaff | www.thearb.org

American Rivers | www.americanrivers.org

Arizona @ Your Service - Official Web of the State |
www.az.gov

Arizona Dept of Environmental Quality | www.azdeq.gov

Arizona Department of Water Resources |
www.azwater.gov

Arizona Game and Fish | www.gf.state.az.us

Arizona Meteorological Network |
www.ag.arizona.edu/azmet/

Prescott Meteorological Network |
www.ag.arizona.edu/azmet/31.htm

Arizona Municipal Water Users Association |
www.amwua.org

Arizona Native Plant Society | www.aznps.com

Arizona Water | www.arizonawater.org

Sonoran Institute | www.sonoraninstitute.org

University of Arizona

Yavapai County Cooperative Extension |
www.ag.arizona.edu/yavapai

Water Resources Research Center |
www.ag.arizona.edu/AZWATER

Southwest Hydrology | www.swhydro.arizona.edu

Project WET – Water Education for Teachers |
www.cals.arizona.edu/arizonawet

For more information and helpful community links,
visit the Coalition website at

www.uvrwpc.org



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Water Smart™

APPLIANCES & FIXTURES

Installing water smart appliances and fixtures will save water and reduce monthly utility bills. Governments are adopting incentives that provide utility bill credits for purchase and installation of approved low water use appliances and fixtures. Homeowners should check with the local utility company for incentives in their area. The Consortium for Energy Efficiency www.cee1.org includes a wealth of information on appliances and fixtures.



APPLIANCES



WASHING MACHINES

Washing machines that spin on a horizontal axis reduce water used per load of laundry by 20 to 50% resulting in an annual household savings of about 7,000 gallons. These water smart machines also require less detergent and consume 50 to 69% less energy.



DISHWASHERS

A standard dishwasher consumes 9 to 12 gallons of water per cycle, and hand washing 20 gallons per sink load. Water smart dishwashers use between 6 and 10 gallons per cycle and require little or no pre-rinsing.



TANKLESS OR ON-DEMAND WATER HEATERS

Point of demand hot water circulators eliminate the need to let water run while waiting for hot water to reach the tap. They can reduce energy costs by 10 to 20% over traditional tank models.

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FIXTURES



TOILETS

Toilets are the biggest indoor water users accounting for more than 30% of household consumption. Replacing an inefficient toilet with a low-flow model will save thousands of gallons of water per year.

Replace...	Save
1970s toilet →	5.4 gallons per flush
1980s toilet →	3.4 gallons per flush
1990s toilet →	1.9 gallons per flush



SHOWERHEADS

Showerheads are inexpensive to replace and easy to install. Switching to a high-performance showerhead with an output of no more than 2.5 gallons per minute can reduce water use by up to 75%. Check existing showerhead output by turning on the shower to full force and measure the amount of water collected in a container for 10 seconds. Multiply that number by 6 to get the gallons per minute.



FAUCETS

Adding aerators (small circular screens) to the tips of faucets will save 1 to 2 gallons of water per minute. After installation of an aerator, water flow should be less than 2.5 gallons per minute for the kitchen and 0.75 to 1.5 gallons per minute for the bathroom. To determine the gallons per minute used by a faucet, turn it on and measure the amount of water collected in a container after 10 seconds. Multiply that number times 6 to get the gallons per minute.



LEAKS!

Faucet leaks are a large source of water loss, and most are caused by worn out washers. Repairing a leaky faucet can save hundreds to thousands of gallons of water a year.

Drips/min.	Gallons lost/month	Gallons lost /year
10	43	526
30	130	1,577
60	259	3,153
120	518	6,307
300	1,296	15,768

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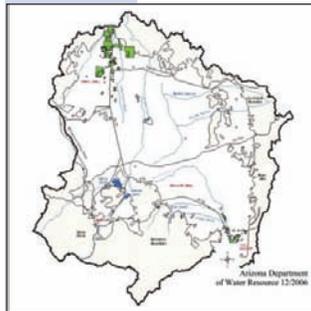
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UPPER VERDE RIVER WATERSHED PROTECTION COALITION

The Upper Verde River Watershed Protection Coalition (UVRWPC) is a joint effort between the City of Prescott, Town of Chino Valley, Town of Prescott Valley, Yavapai County and the Yavapai-Prescott Indian Tribe. Organized in 2006, the coalition is committed to protection



of the Upper Verde River base flow while balancing the reasonable water needs of residents who live and businesses that operate within the watershed boundaries.

Coalition members integrate science-based planning to forward responsible utilization of water resources, and preserve the vitality, health and future flows of the Upper Verde River by:

- Identifying and promoting effective conservation practices for all water users.
- Efficiently managing projects that lead to the realization of safe yield.
- Adoption of Best Management Practices that are based on sound research and unbiased scientific information.
- Operating in an environment that fosters public participation, and open and honest dialog.



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UVRWPC is governed by a five-member executive board of elected officials representing each partner, and charged with setting policy for and monitoring progress of the coalition. A Technical Advisory Committee (TAC) is the project-driven arm taking direction from and making recommendations to the board. It is comprised of technical and scientific personnel from each jurisdiction in the partnership. The Executive Board and TAC convene monthly in open meetings with times, locations and agendas posted on the coalition website at www.uvrwpc.org.



An intergovernmental agreement between all partners established the parameters under which the coalition operates. Recognizing that adequate water resources are critical to the quality of life and economic well-being of residents living in the

Upper Verde River Watershed area, the coalition was formed to create a forum for regional cooperative action. Its intention is to achieve a working equilibrium between water needs and the necessity to protect Upper Verde River water resources.



For more information and helpful community links, visit the Coalition website at

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WINTERIZING THE LANDSCAPE

To avoid damage, many irrigation systems require winterization each year before the first freeze. Backflow prevention devices are required and regulated by municipalities, and proper winterization can be complex. Homeowners unsure of proper winterization techniques should call a licensed contractor.



THE BASICS

If your system requires draining, here are some general guidelines.

1. Turn off water to the irrigation system at the main valve. The shutoff valve should be below the freeze line (the depth to which the ground may freeze) or in a heated environment.
2. Insulate and drain the backflow prevention device and valves*. Insulation blankets can be purchased at irrigation supply stores. Heat tape or a hot box enclosure is highly recommended.
3. It may not be necessary to drain underground pipes if they are below the freeze line.
4. Turn on an irrigation zone to release pressure in the pipes and open all manual drain valves.
5. Set the automatic irrigation controller to the off setting.
6. Drain all water from irrigation components that might freeze.

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SPRING RESTART

Restart is as important as winterization.

1. Turn on water to the irrigation system at the main valve.
2. Close all manual drain valves.
3. Check the system by running each zone. Look for leaking valves, clogged emitters and nozzles.
4. If the system uses a backup battery, replace it with the manufacturer's recommended type.
5. Program each zone for correct run times. Reset timer seasonally to avoid over/under watering.

WINTER LANDSCAPE MANAGEMENT

The unique winter climate of north-central Arizona often requires supplemental irrigation. Freezing temperatures remove humidity from the air. During winter, evergreen plants require more moisture than deciduous plants. Plant roots continue to grow in winter. Therefore, maintaining some soil moisture during the winter months is critical.

THE BASICS

- Although you may have winterized your irrigation system, you will likely need to irrigate periodically during the winter months.
- Monitor soil moisture frequently. If soil is dry in the top four inches, irrigate the root zone.
- Light snow and rain events may not provide enough moisture to the root zone.
- Careful use of automatic irrigation systems may be appropriate provided they are properly re-winterized after each use.
- 2 – 4" of mulch in non-turf areas will reduce soil moisture loss and moderate soil temperature fluctuations.
- Within your landscape there may be several different microclimates. A microclimate is an isolated area that has different climatic conditions than the surrounding area. This can result from several factors such as: shade, wind, reflected heat, northern and southern exposures, etc.
- Familiarize yourself with the unique microclimates within your landscape. Manage different microclimates appropriately. For example, southern exposures should be monitored more frequently for soil moisture content.



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