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Water-Wise Landscaping: Plant Maintenance

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A benefit of established water-wise landscapes is they require less time and money to maintain than a traditional landscape. This assumes you have limited turfgrass to areas where it is practical, you have selected plants adapted to your climate, and you have grouped landscape plants according to their water, soil, and exposure requirements. In such a landscape, you will spend less time trying to manipulate plants to fit your conditions, and more time enjoying their beauty. Although the activities required to maintain a water-wise landscape are not different from those of a conventional landscape, the way you think about them will change as you reconsider your plant selections. The main activities of water-wise landscape maintenance are irrigation and irrigation system maintenance (covered separately in other fact sheets), weed control, fertilization, pruning, and pest and disease control. (For information on irrigating trees and shrubs and irrigation system maintenance, see <http://extension.usu.edu/files/publications/publication/HG-523.pdf> and http://extension.usu.edu/files/publications/factsheet/HG_Irrigation_2004-01.pdf.) Keep in mind that newly planted landscapes will require much more “upfront” maintenance, especially regarding weed control, and that all landscapes require some maintenance, whether they are water-wise or not. With persistence and patience, your water-wise garden will become more self-sustaining and require much less of your time.

Weed Control

A weed is simply a plant out of place. With that in mind, any plant can be a potential weed if it crowds out or uses up resources needed for desirable plants. Some “weedy” plants become such a problem that they end up being declared “noxious” in a particular region. Controlling weeds is critical to maintaining a healthy

water-wise landscape because weeds compete with desirable plants for nutrients, moisture, and sunlight. Remember that water used by a weed is unavailable to desirable plants. Weeds can be annual (germinate, reproduce, and die in one season) or perennial (survive over many years). It is important to learn to recognize and classify weeds in the seedling stage because this will determine your best control options. Perennial weeds are especially difficult to control if you let them grow beyond the seedling stage because they establish deep root systems that are hard to eradicate. You may also find it helpful to learn to distinguish between weed seedlings and seedlings of self-sowing desirable plants, especially if you are using self-sowing plants to fill in some areas of your garden. Methods for controlling weeds include mechanical removal, physical barriers such as landscape fabric and/or mulch, and herbicides.

Mechanical removal of weeds can be accomplished by hand-pulling, hoeing, or tilling. *Even though hand-pulling weeds can be tedious, if done on a regular basis before weeds go to seed, it is the least destructive method of controlling weeds in established plantings.* Hand-pulling works with either annual or perennial weeds, as long as you catch them in the seedling stage. It can be difficult to pull out the entire root system of an established perennial, and if you don't, it can sprout again from the root or crown. Never leave annual or perennial weeds on top of soil or mulch after pulling because some persistent weeds can re-sprout from root crowns and root systems left on the ground. Annual weeds that haven't gone to seed can be composted, but perennial weeds should always be discarded in the trash. Hoeing and tilling are alternatives to hand-pulling, but care must be taken around established plantings so you don't disturb or destroy the roots of desirable plants.

Mulches should be used around landscape plants to inhibit weeds and conserve water. Mulches can be organic materials such as composted wood chips, pine needles, or grass clippings, or they can be inorganic materials such as crushed stone or gravel. Weed seedlings that do come up in mulched areas are much easier to hand-pull, as long as you catch them early. Organic mulches will need to be refreshed regularly as they slowly decompose. Do this by roughing up the old mulch and adding a light layer of new mulch over the top. Inorganic mulches need to be replaced infrequently. Landscape fabric is another effective method for controlling weeds, but its use around landscape plants is controversial. It can interfere with air and water infiltration, and it may inhibit return of organic matter from decomposition of organic mulches to the soil. Landscape fabrics may discourage some desirable perennials from their natural tendency to grow and spread, and it can make division and replacement of these plants difficult. Fabrics also can girdle newly planted trees. The best use of landscape fabric is beneath 3 to 4 inches of mulch in unplanted areas like walkways, where they can form an effective barrier to weed growth. (See http://extension.usu.edu/files/publications/publication/HG_Landscaping_2007-01pr.pdf for more information on the use of mulch.)

The weed control method of last resort should be herbicide use. Of the many options available, pre-emergent herbicides and products containing glyphosate are among the safest and most effective. Pre-emergent herbicides are moved into the soil and activated by moisture. If they are applied in late fall or winter, moisture from either rain or snow precipitation should be adequate to activate them. If precipitation does not occur within three days of application, 1 to 2 inches of water should be applied to treated soil. Areas of your garden that are watered infrequently or not at all may not receive the full benefit of pre-emergent herbicide application unless you remember to water them in soon after application. Pre-emergent herbicides work by killing seedlings as they sprout, but they will eliminate all germinating plants, not just weeds. Use a pre-emergent herbicide only in areas that are, or will be, planted with rooted plants. Do not use them if you rely on self-sowing plants (see insert) to fill in gaps in your perennial flower beds. Glyphosate products eliminate both grasses and broadleaf plants, and are applied directly to emerged, actively growing weeds. Glyphosate takes 7 to 10 days to have an effect. Do not allow glyphosate-containing products to contact desirable plants, and do not spray under windy conditions because spray drift can also cause unintentional damage to desirable plants. Always read the label for safe and effective use. (See "Landscape and Garden Weed Control" for more information:

Some perennials that readily self-sow:

***Aquilegia* spp. (Columbine)**

***Aster* spp. (Aster)**

***Erysimum* spp. (Wallflower)**

***Gaillardia* spp. (Blanketflower)**

***Gaura* spp. (Gaura)**

***Iliamna rivularis* (Mountain Hollyhock)**

***Linum* spp. (Flax)**

***Mirabilis multiflora* (Showy Four O' Clock)**

***Senecio douglasii* (Douglas Groundsel)**

***Sidalcea oregano* (Oregon Checkermallow)**

***Viguiera multiflora* (Showy Goldeneye)**

Fertilization

All plants require nutrients to grow and remain healthy, but many drought-tolerant native and adapted plants can get all the nutrients they need from a properly maintained soil environment. Many of our urban landscape soils, however, have been stripped of organic matter and the soil structure disturbed to the point where nothing but the most persistent weeds will grow. For this reason, it is a good idea to have your soil tested prior to installing landscape plants. (For information on soil testing and soil test results, see the following fact sheets: <http://extension.usu.edu/files/publications/publication/HG-513.pdf> and <http://extension.usu.edu/files/publications/publication/HG-512.pdf>.) Your county Extension office can provide information specific to your area. In most cases, amending soils with composted organic matter prior to planting will improve the fertility of your soil. Adding organic mulch to planted areas also helps to improve soil fertility over time. If part of your garden will be comprised largely of drought-tolerant native plants, organic amendments may be all they need to thrive. Many drought-tolerant plants have adapted to their arid habitats by growing slower than traditional landscape plants. Over-fertilizing these plants only weakens them and results in rank, unsightly growth. In fact, many of the penstemons and desert-adapted shrubs like *Chrysothamnus nauseosus* (Rabbitbrush) and *Fallugia paradoxa* (Apache Plume) thrive on neglect and require the excellent drainage provided by inorganic rock mulch and little to no supplemental fertilization. Knowing the habitat your plants are adapted to is critical

to understanding your plant's needs. If you don't know, err on the side of less rather than more nutrients, and watch plants closely throughout the growing season for signs of deficiency. Nutrient-deficient plants may develop yellow or discolored foliage. If this happens, simply add organic matter or a controlled-release type of complete fertilizer around the root zone, water in thoroughly, and watch for improvement.

Other factors may affect the availability or movement of nutrients through the soil. Plants in sandy soils may need more frequent fertilization than plants in loamy or clay soils. Soils that are alkaline (high pH) may bind essential nutrients and make them unavailable. A soil test will provide this information and make recommendations for amending the soil. An alternative to soil amendment is to choose plants that are adapted to these conditions. Utah soils are often alkaline, and textures can range from rocky or sandy to silty loam or clay. Fortunately, plants native to our region have adapted to these conditions, and you can choose from a variety of native plants to fill almost any microclimate in your landscape. The key is to learn as much as you can about your yard and your plants. Paying attention to the needs of your landscape plants will make you a more successful gardener.

Controlling Plant Growth

Periodically, you will need to control the growth of your landscape plants by pruning, pinching or deadheading, and dividing. These activities will maintain your plants' health and appearance by removing dead or undesirable growth, and by stimulating, reinvigorating, or re-directing their growth. Remember that providing only the amount of water or fertilizer plants need to maintain their health and vigor means less time spent controlling unruly growth. Some locally adapted native plants may quickly grow out of their space when provided with the relatively abundant resources available in a managed landscape. An example is *Gutierrezia sarothrae* (Matchbrush). Withholding water or nutrients will keep growth of this species in check.

Pruning. Pruning is a way to control growth on trees and shrubs. Many forms of pruning exist, and the kind of cut you make depends upon the desired result and the growth habit of the plant. For example, most deciduous shrubs (shrubs that drop their leaves in fall) benefit from *thinning* cuts that open up their canopy and eliminate old or competing stems. Thinning cuts are made by cutting a branch back to its point of origin. The point of origin could be another branch or the main trunk, or it could be near the ground. Thinning can be used to shape or direct growth, but most often it is used to reduce bulk and restore the natural structure of the plant. A *heading* cut is more severe than a thinning cut, and removes part of a branch leaving a short stub



Gaillardia plant with flowers and seed heads

above a bud. This type of cut stimulates a profusion of twiggy growth from a lateral bud just below the cut. It is used to stimulate new growth from a lateral bud to fill in a gap in the canopy, or to increase flower production in some shrubs. Sometimes it is mistakenly used when a thinning cut would have been a better choice. Overuse of heading cuts can ruin the natural shape of a tree or shrub.

Shearing is the most severe type of heading cut and involves cutting a plant's outer foliage to create an even surface. Only certain trees and shrubs will benefit from this type of cut. Shearing can be used to create a hedge or screen with closely spaced plants. Some woody plants can be treated like herbaceous perennials and sheared almost to the ground to control their growth or to restore them to a more natural shape (see insert). Most pruning should be done in late winter or early spring before spring growth begins. For plants that flower on last year's growth, prune after flowering. With only a few exceptions, most native conifers require no pruning. For example, junipers are highly valued for their natural shape. Junipers that have outgrown their space should be removed rather than pruned. (For more information on pruning trees, see the following extension bulletin: http://extension.usu.edu/files/publications/publication/NR_FF_004.pdf.)

Management of dead plant material. The bloom time of some annuals and herbaceous perennials can be extended by removing flowers as soon as they start to decline. This is called *deadheading*, and some plants can be stimulated to repeat bloom when you remove the spent flowers. In the case of plants with a flower on a single stem, cut back the entire stem to avoid a gangly, headless stem. If you don't deadhead plants that repeat bloom, the plant will set seed, signaling the end of flower production for the season.

Some herbaceous perennials can be sheared by one half to two thirds after they have gone dormant in the fall. This will remove unsightly stems and rejuvenate plants that have become gangly and have reduced flowering. Consider delaying cleanup until late winter for plants that have persistent and attractive stems and seed heads. Plants like *Gaillardia* (blanketflower), *Astilbe* (false spiraea), and many native grasses can add structure, texture, and color to an otherwise drab fall/winter landscape.

Division is another way of rejuvenating herbaceous perennials that have become weakened by age or overgrowth. A sign that your plants need dividing is when flower production is reduced and the stems become thin and nonproductive. Perennials are divided by digging up the plant, taking care to dig around, not through, the root system. Using a shovel, two pitchforks, or a sharp blade, pry the plant root system apart to separate into two or more separate plants. Plant roots should be kept cool and moist during this process, and new plantlets should be installed and watered in soon after division. Most perennials need to be divided every three to five years.

Pest and Disease Control

The best way to fight insect or disease problems is to prevent them from happening in the first place. When a system called integrated pest management (IPM) is used, you will rarely need to spray chemical-based pesticides to control pests in your yard. IPM emphasizes prevention and involves several strategies to control pests, including using landscape plants adapted to your climate, diversifying your planting choices, and maintaining optimal plant health by not over-fertilizing and over- or under-watering. Also keep the landscape free of plant debris, and regularly inspect landscape plants for problems. When potential problems are found, contact your local Extension office for help in diagnosing and correcting the problem. (See the following USU Extension Web site for detailed information on plant pest control, <http://utahpests.usu.edu>.)

Plants that can be sheared almost to the ground:

***Artemisia cana* (Silver Sage)**

***Buddleia davidii* (Butterfly Bush)**

***Ceratoides lanata* (Winterfat)**

***Chamaebatiaria millefolium* (Fernbush)
(occasionally to rejuvenate)**

***Chrysothamnus nauseosus* (Rubber
Rabbitbrush)**

***Cornus sericea* (Red-twig Dogwood)**

***Caryopteris x clandonensis* (Blue Mist
Spirea)**

***Cercocarpus ledifolius* (Curl-leaf Mountain
Mahogany)**

***Fallugia paradoxa* (Apache Plume)
(occasionally to rejuvenate)**

***Kolkwitzia amabilis* (Beauty Bush) (after
bloom)**

***Lavandula angustifolia* (English Lavender)
(up to 2/3 of plant)**

***Mahonia fremontii* (Fremont Holly)
(occasionally to rejuvenate)**

***Potentilla fruticosa* (Shrubby Cinquefoil)
(occasionally to rejuvenate)**

***Prunus virginiana* (Chokecherry)**

***Symphoricarpos oreophilus* (Mountain
Snowberry)**

WEED CONTROL	
WEEKLY MAINTENANCE	<ul style="list-style-type: none"> • Pull weeds from landscape beds on a weekly basis to maintain a tidy look to the landscape and to reduce competition with desirable landscape plants.
MONTHLY MAINTENANCE	<ul style="list-style-type: none"> • Spot-treat weeds with post-emergent herbicides, like glyphosate products. Products containing 2,4-D (common in many lawn weed killers) should be used only in the spring and fall, because they can volatilize and cause damage to desirable plants when used in the heat of summer.
ANNUAL MAINTENANCE	<ul style="list-style-type: none"> • Because organic mulches (grass clippings, shredded bark, etc.) slowly decompose, they need to be refreshed periodically. Apply ½ to 1 inch of new mulch over “roughed-up” existing mulch. • Apply pre-emergent herbicides in the fall to control winter annual weeds and in early spring to control summer annual weeds.
TREES and SHRUBS	
WEEKLY MAINTENANCE	<ul style="list-style-type: none"> • Remove weeds from under the canopy of trees and shrubs. • Check soil conditions around the root zones of landscape plants at least monthly to ensure they are being watered correctly. Established drought-adapted plants can tolerate dry soil conditions, and if they appear healthy (leaves are not wilting) they probably do not need supplemental water. • Provide water to newly planted trees and shrubs regularly until established. Newly installed drought-tolerant plants need to be deeply watered every 1 to 2 weeks. This is a general guideline and care should be taken to avoid over- or under-watering.
ANNUAL MAINTENANCE	<ul style="list-style-type: none"> • Minor pruning will not adversely affect trees and shrubs at any time of the year. Major pruning should be done in late winter to early spring. • Trees and shrubs usually do not need to be fertilized once established. Plants that look unhealthy may have a nutrient deficiency. Before fertilizing, make sure the symptoms are not the result of over-irrigation. Your county Extension office can provide information on nutrient needs in soils typical of your area.
HERBACEOUS PLANTS	
WEEKLY MAINTENANCE	<ul style="list-style-type: none"> • Newly planted perennials and annuals need regular water, but established drought-tolerant plants may need to be watered only 2 or 3 times during the growing season. Water deeply to make sure the entire root zone is wetted. Watering frequency also depends on soil type, sun exposure, and outdoor temperatures.
MONTHLY MAINTENANCE	<ul style="list-style-type: none"> • Many drought-tolerant herbaceous plants require little to no supplemental fertilizer throughout the growing season. When you do fertilize, apply products that contain slow-release fertilizer to minimize leaching into groundwater. • You can extend the flowering period of herbaceous plants by removing flower heads as soon as they begin to decline and look unsightly. If the flower heads occur singly on a bare stem, cut that stem back towards the base of the plant to maintain its appearance.
ANNUAL MAINTENANCE	<ul style="list-style-type: none"> • Cut perennials 2 to 3 inches above the ground after foliage has died back in the fall. Compost disease-free trimmings or send them to a green-waste recycling facility. • Most perennials need to be divided every 3 to 5 years. Signs to watch for include reduced flowering and development of weak, spindly stems.

TURFGRASS	
WEEKLY MAINTENANCE	<ul style="list-style-type: none"> • Mow turfgrass at least weekly at a height of 2 ½ to 3 inches. • Drought-tolerant turfgrasses, like buffalograss and blue grama, are slower growing and require mowing every 2 to 4 weeks only.
MONTHLY MAINTENANCE	<ul style="list-style-type: none"> • Fertilize turfgrass 3 or 4 times during the growing season. • Drought-tolerant turfgrasses require half the fertilizer that other turfgrasses need to maintain their health and vigor. Fertilize them twice a year, once when they begin to green up in the spring and a second time approximately 60 days later. • If you need to spray broadleaf weeds in bluegrass, fescue, or perennial ryegrass, do so when daytime temperatures are consistently below 80° F. • Do not apply broadleaf weedkillers to buffalograss and blue grama when they are actively growing. Instead, spray weeds in the grass with a glyphosate product when the grasses are dormant in early spring or late fall.
ANNUAL MAINTENANCE	<ul style="list-style-type: none"> • Aerate cool-season turfgrasses (Kentucky bluegrass, perennial ryegrass and fescues) in the spring, especially if they experience heavy traffic.
PEST and DISEASE CONTROL	
WEEKLY MAINTENANCE	<ul style="list-style-type: none"> • Visually inspect all landscape plants for potential pest problems. If you find something that is unfamiliar to you, contact your local county Extension office for help in diagnosing the problem.
ANNUAL MAINTENANCE	<ul style="list-style-type: none"> • In the fall, incorporate all yard waste such as dead annuals and perennial trimmings and leaves into the soil, or send them to a green-waste recycling facility. Spent garden plants such as tomatoes, peppers, and squash should be sent to a recycling facility. Tilling them into the soil can increase the chances of harboring unwanted pests and diseases.

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