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# A Guide to Desert Bioscape



**M. L. Robinson,  
Dr. Wayne S. Johnson  
Richard L. Post  
William J. Carlos**

# A Guide to Desert Bioscape

Whether it's mulching, mowing your lawn or calibrating your irrigation system, this guide can help you do it right.



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## Acknowledgments

The University of Nevada Cooperative Extension's Desert Bioscape program focuses on yard care and design practices that minimize maintenance, provide a beautiful, functional landscape and improve our environment by sustaining natural resources.

## Introduction

There's no doubt about it. Successful garden and lawn care in Nevada requires special skills and knowledge. The Desert Bioscape program shows you how to create attractive and healthy yards by working with Nevada's environment, rather than against it.

We hope this guide will help you through an evaluation of your yard and yard care practices. This can help to develop an environmentally sound and sustainable yard. The payoff is a yard that saves you money, meets your needs, enhances your neighborhood, adds to property values, improves your community's forests, and helps protect Nevada's natural beauty and natural resources.

This workbook will help you develop a sustainable yard. The ultimate goal is to become cities **of** the desert instead of just cities **in** the desert.

The Horticulture staff and Master Gardener volunteers at your county's Cooperative Extension office can provide you with more information and answer questions. They can also tell you about additional services they may provide such as diagnostic tests, workshops, and on-site resources.

Remember, Rome wasn't built in a day and neither is a Nevada yard. Take this adventure a step at a time and enjoy!

University of Nevada  
Cooperative Extension  
Southern Area (Las Vegas)  
(702) 222-3130  
Master Gardener  
(702) 257-5556

University of Nevada  
Cooperative Extension  
Northeast/Central Area (Fallon)  
(775) 423-2844

University of Nevada  
Cooperative Extension  
Western Area (Reno)  
(775) 784-4848

University of Nevada  
Cooperative Extension  
Northeast/Central Area (Elko)  
(775) 738-7291

With a desert bioscape yard, you win and so does Nevada's environment. You don't waste water, fertilizers or pesticides, and Nevada's lakes, rivers, wildlife and children are protected for generations to come.



1. Porous surfaces-lawn, brick driveway and mulch paths—allow water to soak into the ground.
2. Compost bin—use your yard waste to improve soil and control weeds.
3. Wildlife habitat encourages birds, butterflies and desirable animals.
4. Incorporate native areas into the overall landscape when possible.
5. Plant native buffers along waterways or into wild lands.
6. Plant trees and vines to shade southern and western sides of your home.

## What does a Desert Bioscape Look Like?

A desert bioscape can take any form—unique or traditional. In fact, you can create a desert bioscape by simply changing the way you take care of your yard.



Mark all storm drains with pollution prevention messages, such as "Let only rain down the drain."

Use fewer pesticides and keep runoff from leaving your property to reduce water pollution.

7. Mulched plant beds should be lower than the yard, where possible, to retain water and prevent runoff.
8. Rain barrels are most effective for collecting and using the little water Nevada receives.
9. Use environmentally friendly pest control.
10. When using water features keep them small and practical.
11. Use landscape ideas from natural areas such as washes.
12. Collect and filter storm water and other waste water with constructed wetlands and washes.

# Right Plant, Right Spot

Good landscaping design hinges on one basic concept—the right plant in the right spot. Careful planning and site evaluation are the first steps in applying this concept. The following checklists will guide you through some important considerations and decisions you should make when designing a landscape.

Resist (for now) the temptation to rush out and purchase plants—that will come later! If you have an in-ground sprinkler system, or are planning to put one in, make sure the designs for the landscape and sprinkler system match each other. Remember, turf, flower beds, trees and shrubs, and the vegetable garden should be on separate irrigation circuits.

Nevada is a diverse state, which includes several, mostly high desert climatic zones. Soil types, temperature ranges and rainfall patterns differ dramatically around the state. It's important to remember that a plant that thrives in a friend's yard in one area may not succeed in your yard a short distance away.

Once you know your site conditions and have decided how you will use your yard, you are ready to begin selecting plants. Local Cooperative Extension offices have resources, including plant lists, to help you with your selections. Library references are helpful too. Prioritize your landscape projects and then work on

## 1st Determine your needs for an area. (a few suggestions)

- |   |  |
|---|--|
| <input type="checkbox"/> Play area for children             | <input type="checkbox"/> Sitting garden        |
| <input type="checkbox"/> Vegetable/herb/fruit garden        | <input type="checkbox"/> Area for entertaining |
| <input type="checkbox"/> Screen home from road or neighbors | <input type="checkbox"/> Pet area              |
| <input type="checkbox"/> Wildlife habitat/butterfly garden  | <input type="checkbox"/> Storage area          |
| <input type="checkbox"/> Water garden/aquascape             | <input type="checkbox"/> Pool, spa, hot tub    |
| <input type="checkbox"/> Outdoor entertainment              | <input type="checkbox"/> RV and boat storage   |

## 2nd Determine the level of maintenance you want. Time needed for mowing, pruning and weeding. Requirements for water, fertilizers and pesticides.

- High
- Medium
- Low

## 3rd Determine the site conditions, including microclimates, in your yard.

- |  |  |
|--|--|
| <input type="checkbox"/> Northern Nevada       | <input type="checkbox"/> Full shade        |
| <input type="checkbox"/> Central Nevada        | <input type="checkbox"/> Partly sunny      |
| <input type="checkbox"/> Southern Nevada       | <input type="checkbox"/> Full sun          |
| <input type="checkbox"/> Mountain elevation    | <input type="checkbox"/> Well-drained soil |
| <input type="checkbox"/> Valley elevation      | <input type="checkbox"/> Sandy soil        |
| <input type="checkbox"/> Poorly-drained soil   | <input type="checkbox"/> Loamy soil        |
| <input type="checkbox"/> Caliche layer present | <input type="checkbox"/> Clay soil         |
| <input type="checkbox"/> Alkaline soil         |  |
| <input type="checkbox"/> Acidic soil           |  |
| <input type="checkbox"/> Salty soil            |  |

Right plant, right spot. Place a plant where its needs and yours are met.

Your local Cooperative Extension office can give you information on how to collect a soil sample and where to send it for a pH test, soluble salts test, or a complete analysis.

**4th Choose adapted plants with these characteristics to reduce maintenance.**

- \_\_drought tolerant
- \_\_pest tolerant
- \_\_foot traffic
- \_\_sun tolerant

- \_\_shade tolerant
- \_\_freeze tolerant
- \_\_salt tolerant
- \_\_heat/cold tolerant

- \_\_wind tolerant
- \_\_native trees and shrubs
- \_\_slow growing shrubs, groundcovers

**5th Create your design plan.**

Use the graph paper provided on pages 8 and 9. Photocopy extras for making alternate designs. Be sure to indicate where activities will take place, future plans for additions to the home, above and below ground utilities, existing views, large established plants and plantings and your irrigation zones, if you have an in-ground system or plan to install one.

**6th Choose plants to meet all the conditions you've selected in this workbook.**

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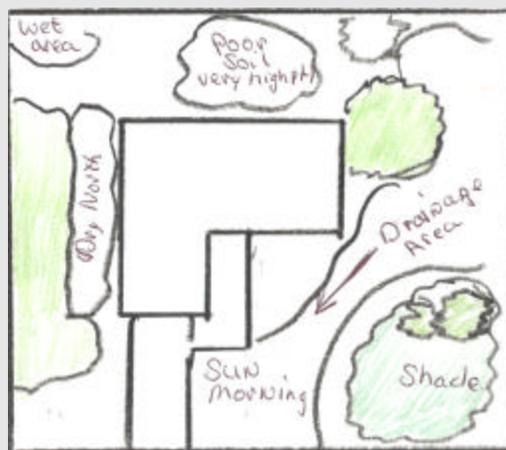
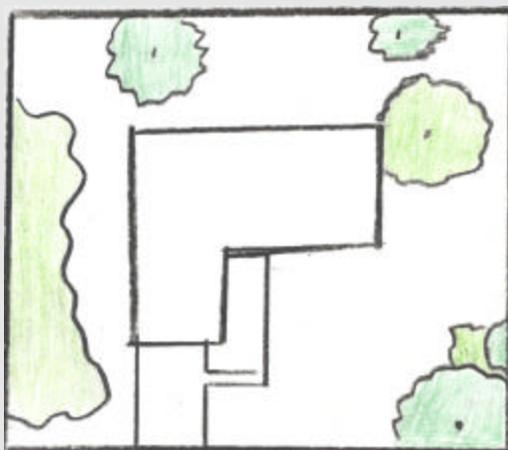
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## Desert Bioscape Actions

- Reduce the need for water, fertilizer, pesticides and pruning by using plants suited to the site conditions in your yard.
- Remember that many native and native-like plants not only use less water, but little or no fertilizer or pesticides.
- Group plants according to their maintenance needs. For example, group drought-tolerant plants with low-water needs separately from lawn areas.
- Reduce yard waste by choosing plants that will not require frequent pruning when they reach maturity.
- Determine how much grass you need for children, pets and recreation. Where possible, use low-maintenance ground covers, shrubs, mulch or other porous surfaces.
- Preserve native plants, especially trees, when building on a new site. Maintain a protective “do not disturb” barrier outside the drip line of trees.
- Save energy by using trees and shrubs to shade the air conditioner’s compressor and southern and western walls of your home.
- Overwatering and overfertilizing causes excessive pruning, more frequent mowing and yard waste removal.
- Use deciduous trees or shrubs on southern exposures to allow sun to passively heat your home in the winter.
- Help stop the spread of invasive exotic plants by removing them from your yard, e.g. Tamarisk (Saltcedar), Purple Loosestrife, Yellow Toadflax and St. Johnswort, Russian knapweed, etc



# The Top Five Common Mistakes in Landscape Plantings

## **Mistake #1: Over-planting**

Small trees and shrubs are often planted too close together for an instant “mature” look. The result several years later is a crowded landscape. Plants must be removed or pruned continually to reduce competition.

### **Solution #1:**

Resist the temptation to have an “instant landscape.” Know the mature size of plants and give them room—and time—to grow. Fill in with temporary plants or use annuals.

## **Mistake #2: Lawn areas are cluttered with trees.**

Trees scattered throughout the lawn appear unorganized. They also create maintenance problems when mowing, dethatching, aerating, fertilizing and irrigating a lawn; they often have different needs.

### **Solution #2:**

Group trees in mulched planting beds with shrubs and ground covers bordering the lawn and landscapes.

## **Mistake #3: Shrubs and large plants around the home are too tall.**

When plants grow too tall, they cover windows and no longer enhance the home’s appearance. We usually try to compensate for this “*misplanting*” by shearing to control the plant size. Constant shearing weakens and disfigures shrubs and destroys wildlife habitat. It also creates extra yard work and yard waste.

### **Solution #3:**

Select foundation plants with an ultimate (mature) size that fits their location. Instead of shearing shrubs, selectively clip stray shoots to keep the plant neat, full and open.

## **Mistake #4: Plants growing too close to the house and other buildings.**

Plants that are too close have an unattractive “cramped” look. They create a maintenance nightmare when it’s time to repair or paint. They may also be a safety and/or fire hazard or damage the foundation.

### **Solution #4:**

Foundation plants should be planted half their mature width plus one foot away from the wall. Therefore, a shrub that will grow to be five feet wide should be planted  $3\frac{1}{2}$  ( $2\frac{1}{2} + 1$ ) feet away from the house. In fire-prone areas, don’t use foundation shrubs, use rock mulch or sparse, well-watered groundcover.

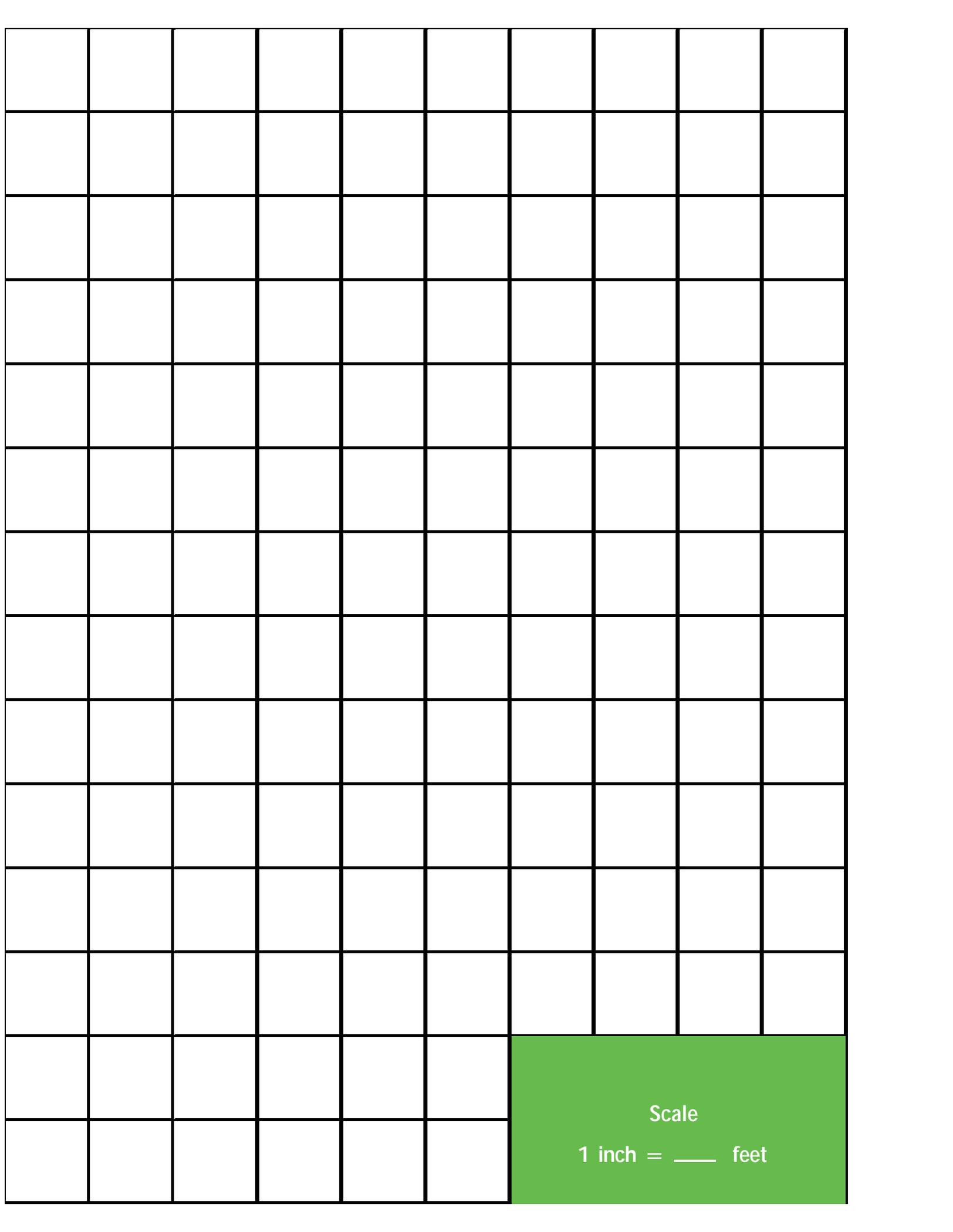
## **Mistake #5: Plants are placed randomly in the yard.**

The landscape is unorganized, unattractive, nonfunctional and environmentally unfriendly.

### **Solution #5:**

Design the landscape to meet your family’s needs, grouping plants attractively and consistently with consideration for their design characteristics, maintenance needs and environmental requirements (climate, sun, water and soil).





Scale

1 inch = \_\_\_\_ feet

# Water Efficiently

Use water efficiently in the yard by designing the irrigation system to the landscape and managing it to meet the plants' needs. Even with a lawn and specialty gardens, it is possible to conserve water in a Nevada yard. Always group plants with similar water requirements together; however, even an ideal landscape design can be over-watered with poor management. It is extremely important that each irrigation zone is set to meet the needs of the plants in that area.

For example, a lawn in full sun will demand more frequent irrigation than an established plant bed of shrubs in the shade. Also, the use of irrigation shutoff devices, will conserve water.



*Irrigation shutoff devices. Clockwise, from upper left: rain, wind and temperature.*

## MOWING HEIGHTS



Graphic by M. L. Robinson and Vicki Paul

## Give your lawn a break during the winter!

Avoid the temptation to keep your lawn green and growing year-round. Lawns go semi-dormant in Central and Northern Nevada from November through March. During this time, the lawn will only need water every 3–4 weeks, at most. Aerate turf area once or twice a year for better water and fertilizer use. In Southern Nevada, water every 10–16 days in winter.

## Let your plants tell you when they need water—and then water them correctly.

Know how to tell when your lawn (steel blue cast) and plants (wilted, dull, yellow-green cast) need water. Also, know how to calibrate your sprinkler system so that your plants get the water they need. Water by inches or volume, not time. The higher the grass, the more extensive the root system. Do not cut off more than 1/3 the leaf height or the root system will die back, making the lawn more prone to water stress and pest attack.



Watered Plant

Dry Plant

## Desert Bioscape Actions

- Design and maintain a yard that thrives predominantly on rainfall once plants are established (Northern NV).
- Water your lawn and other plants only when they show signs of stress. (Comply with any existing watering restrictions in your community.)
- Calibrate your sprinkler(s) to apply ¼ to ¾ inch of water per application. In Northern Nevada follow the recommended ET rates at [www.washoeet.dri.edu](http://www.washoeet.dri.edu).
- Mow lawns high to encourage a deeper, more drought and pest tolerant root system. A higher cut also shades out weeds. Cut no more than 1/3 the height of grass blades with each mowing.
- Put a rain gauge in your yard to track rainfall and to avoid unnecessary watering (Northern NV).
- Connect an automatic rain, wind and freeze shut-off device to your sprinkler system's timer. Set the device to ½ inch so that it will override your system's timer when enough rain has fallen. Replace backup batteries in your system's timer each year. Check to see if the shut-off device is working properly.
- Design or modify your sprinkler system to water lawn areas separately from plant beds, trees and shrubs, and vegetable gardens. Install soil moisture sensors in each.
- Use a drip or micro-spray irrigation system to more efficiently water plant and flower beds.

# Mulch



Mulch keeps moisture in the soil and moderates soil temperature around roots, alleviating plant stress. Mulch also reduces erosion and weeds. Use shredded mulch, large bark or wood chips in windy areas and near pools. Mulch is often sold in bags, by the yard or by the "truckload." Larger amounts are cheapest.

How much mulch do you need to cover the area the recommended 3 inches deep?

By the bag:

1 bag containing 2 cubic feet covers 8 square feet (2 ft. x 4 ft.)

By the bale:

1 bale of pine straw covers 18 to 20 square feet.

By the yard:

1 cubic yard covers 108 square feet (9 ft. x 12 ft.)

By the truckload:

1 mini pickup holds 1½ yards and covers 162 square feet (9 ft. x 18 ft.)

1 full-size pickup holds 2½ yards and covers 270 square feet (9 ft. x 30 ft.)

If you are buying bags containing 2 cubic feet of mulch, you can use the following chart:

Your plant bed in square feet	The depth of mulch		
	2 inches	3 inches	4 inches
25 sq. ft.	2 bags	3 bags	4 bags
50 sq. ft.	4 bags	6 bags	9 bags
100 sq. ft.	9 bags	13 bags	17 bags

## Recycle

In a Nevada yard, grass clippings, leaves and yard trimmings are recycled rather than thrown away. By recycling yard debris, we gain free mulch and return valuable nutrients to the soil.

Composting is a great American tradition that people are rediscovering. Turn plant and kitchen scraps into rich soil for your indoor and outdoor plants. Many tree-trimming companies give away wood chips for free or sell them at a very reasonable cost.



Pull mulch away from stems and trunks to avoid stem rot and rodent damage. Fine mulches blow away; use shredded or large chipped mulches in windy areas.



## Desert Bioscape Actions

- Keep a 3- to 4-inch layer of organic mulch over the roots of trees, shrubs and in plant beds. Remember to leave at least 6 inches of space between the mulch and the plant's trunk or stem.
- Replenish mulch once or twice a year, as needed, to maintain a 3- to 4-inch depth.
- Create self-mulched areas under trees where leaves or pine needles can stay where they fall.
- Recycle grass clippings by leaving them on the lawn. Use mulching lawn mowers or mulching blades for best results.
- Use fallen leaves and pine needles as mulch under trees and shrubs. They make attractive natural mulch and are free. If you have more leaves than you can use, share them with a friend or neighbor.
- Create and maintain a compost pile with kitchen scraps and yard waste (no animal products or pet manure, please).

# Fertilizing

Many trees and landscape plants demand little or no fertilizer once they are established and have matured. In fact, fertilizers can be hazardous to the health of your yard and the environment when they are misused or overused.

Fertilizers, when over-applied, aggravate insect and disease problems and force excessive growth which must be mowed or pruned. Excess fertilizers can run off yards into waterways or leach into groundwater, polluting drinking water.

## ***How much fertilizer should you buy?***

**It is spring and time to fertilize the lawn. Here are the steps you need to take in order to determine how much fertilizer to buy:**

Measure the lawn area and calculate square feet (ft<sup>2</sup>):

Backyard: 60 x 50 feet

(60 x 50 feet = 3,000 ft<sup>2</sup>)

Front yard: 50 x 40 feet

(50 x 40 feet = 2,000 ft<sup>2</sup>)

Total square footage =

5,000 ft<sup>2</sup>. \*

Shop for fertilizer that contains slow-release nitrogen. Look for the three numbers that stand for percentages of nitrogen, phosphorous and potassium.

Use this simple formula to determine the application rate of each fertilizer:

100 divided by the %N = the pounds of fertilizer to spread over 1,000 square feet to equal 1 pound of actual nitrogen per 1,000 square feet.

Therefore, apply six pounds (100/16=6) of 16-4-8 fertilizer to 1000 ft<sup>2</sup> of lawn.

A 2,500 ft<sup>2</sup> lawn would require 15 pounds of the 16-4-8 (2.5 x 6).

Always compare fertilizer prices by figuring the pounds of actual nutrient purchased in a bag divided into the price of the bag = \$/lbs. of element.

Before spreading the fertilizer, calibrate the fertilizer spreader to apply the pounds per 1,000 square feet. Hint: this information is available from the spreader's manufacturer or local Cooperative Extension offices.

\*Most yards in Nevada are small with limited lawns and grass. Turf is used only in areas for play, pet exercise, and entertainment.

## The Fertilizer Label

Federal and state laws require that fertilizer manufacturers supply specific information in a fertilizer label. There's a wealth of information on the label that helps gardeners use the product safely and properly.

Use fertilizer in which 30% or more of the nitrogen is in a slow or controlled-release form.

### Fertilizer Facts:

1. Fertilizer is not plant food. A plant is fed by the sugars it makes through photosynthesis. Fertilizer nutrients are used in this and other processes, but a lawn or plant growing poorly in too much shade will not grow better if you apply fertilizer to it.
2. The truth about "100% Organic:" The "100% Organic" claim often refers only to the nitrogen in the bag. The nitrogen can be derived from natural products such as manure and compost or it can be from synthetic chemicals such as urea. Read the label to determine the source of the "organic" nitrogen.
3. Buy nutrients, not fertilizer. Many fertilizers contain a number of plant nutrients even though only one or two may be needed. What plant response do you want—greener growth, more flowers, larger fruits? Know which nutrients will provide this response and buy only those.

## Desert Bioscape Actions

Fertilize only as needed to maintain the health of lawns and landscape plants. If plants show signs of stress, such as yellow leaves or stunted growth, identify the problem before applying fertilizer. Fertilizer is not a cure all. Do not exceed the rate of 1 pound of nitrogen per 1,000 square feet per application. Remember, many native and nativelike plants need little or no fertilizer.

Use slow-release fertilizers. Buy fertilizers that contain 30% or more of the nitrogen in slow-release forms. Look for % W.I.N. (Water Insoluble Nitrogen) on the label. The greater the percentage, the slower the release of fertilizer.

Use iron (ferrous sulfate or chelated iron) instead of nitrogen to make your lawn green during the summer.

Plant desert leguminous plants that make their own nitrogen fertilizer.



## Managing Yard Pests

It is unrealistic, and even unwise, to strive for an insect-free, disease-free and weed-free yard. Many insects are beneficial, helping to keep pests under natural control. Few are pests, most insects simply coexist with humans and plants causing no harm.

**Meet some of the "Good Guys." Help protect these beneficial organisms so that they can naturally keep pests under control. Also, the use of traps and biopesticides will help.**



**Queen Butterfly**  
(SW version of the Monarch)  
*Danaus gilippus*



**Dragonfly**  
Orange Skimmer  
*Libellula saturata*



**Desert Spiny Lizard**  
*Sceloporus magister magister*



**Toad**



**Bee**  
Carpenter Bee  
*Xylocopa varipuncta*



**Bee Boards**  
(Leaf Cutter Bee Nest)



**Traps**



**Honey Bee**  
*Apis mellifera*



**Tarantula**  
(Male)

## Integrated Pest Management (IPM)

Communities and individuals are successfully managing pests by protecting beneficials and reducing the use of pesticides. By definition, pests include insects, arachnids, diseases (caused by bacteria, fungi, viruses, etc.) and weeds. It is easy to practice IPM in your yard.

- 1st Check your lawn and plant beds regularly for pest problems.
- 2nd Identify the problem. Most people kill larvae of ladybird beetles or green lacewings because they are ugly. They are excellent predators of aphids.
- 3rd When appropriate, first try non-chemical approaches and least toxic pesticides such as insecticidal soaps, horticultural oils, *Bacillus thuringiensis*, and Neem products or just wash them off with water.
- 4th Spot treat. If bill bugs or weeds are a problem, don't treat the entire lawn — treat only the affected area. If one out of ten shrubs has aphids, treat only the infested plant.
- 5th Be tolerant! Low levels of pests will do minimal damage to plants and many are sources of food for beneficial insects and other animals.
- 6th The label is the law! Read pesticide labels carefully for information on using pesticides and disposing of leftover pesticide mixes.

## Desert Bioscape Actions

- Check plants regularly (this is called scouting the landscape). Walk around your yard every week and observe your plants and lawn for signs of problems.
- Avoid routine applications of pesticides. Treat only affected areas rather than spraying your entire lawn or yard. Require that your maintenance company follow these strategies.
- Be able to identify five beneficial\* insects spiders, and animals that provide natural control of harmful pests.
- Use environmentally-friendly pesticides such as horticultural oils, *Bacillus thuringiensis* (Bt.), Neem, and insecticidal soaps. These effective, safe materials can control most plant pests.
- Wherever possible use non-chemical approaches to pest control, such as pruning off affected areas, hand removing insects, high-pressure water, etc.
- Many native and nativelike plants have few harmful pests.

\*The term beneficial applies to bacteria, birds, lizards, toads, insects, arachnids or any other organism that keeps pest populations under control.

## Stop Water Runoff

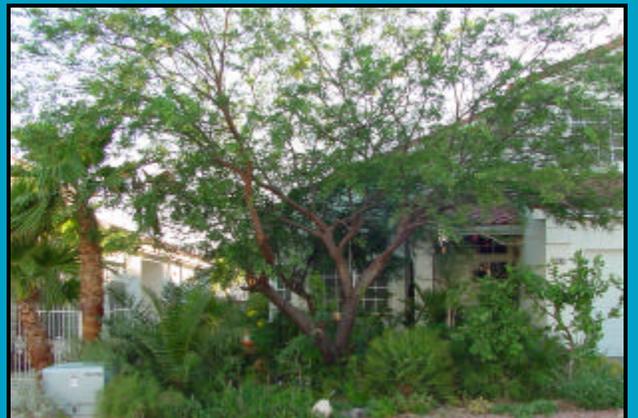
Keeping rain and sprinkler water on the yard—and out of the storm drain—reduces pollution of ponds, rivers and lakes. Because water washes off the yard, it is important to reduce the amount of pollutants on a property. Swales in the yard and using pervious surfaces for patios and walkways are beneficial in preventing run off and helping conserve water. Likewise, shade tree canopies capture rain, preventing soil erosion from heavy downpours.



Swales and washes capture and keep water on your property. This helps maintain a beautiful yard and reduces irrigation requirements.



Deciduous spreading trees offer shade in hot seasons while allowing sunshine to produce beautiful groundcovers during cool periods.



Don't let rain go down the drain, use it in your yard! While storm water travels through pipes under roads, it is not treated at a waste treatment plant. It flows directly into washes, ponds, lakes and rivers carrying pollutants in it. Capture and use rain in your yard. Use a plastic drum to capture and store rain water for your plants.



**Note:** Barrels come in many sizes, shapes and colors.

- Barrels either have sealed lids or lids that can be removed. Barrels with sealed lids have two small round openings. They have flat bottoms and are more stable. Barrels with removable lids have larger openings making cleaning out debris easier.
- Drums made of white plastic seem to disintegrate quicker in the sun.
- Food-grade drums are also available in 48-gallon and 42-gallon sizes.

## Desert Bioscape Actions

- ☐ Where possible, direct downspouts and gutters to drain onto the lawn, plant beds or containment areas where rain will soak into the soil rather than run off the yard.
- ☐ Decrease soil erosion by planting groundcovers where turf doesn't thrive, such as under trees or on steep slopes.
- ☐ Use mulch, bricks, flagstone, gravel, or other porous surfaces for walkways, patios and drives.
- ☐ In northern Nevada, collect and store rain runoff from the roof in a rain barrel or cistern for irrigation.
- ☐ Create swales (low areas), retention basins or terracing to catch, hold and filter storm and irrigation water.
- ☐ Pick up after pets. This will help reduce bacterial and nutrient pollution entering storm drain systems.
- ☐ Clean up oil spills and leaks on the driveway. Instead of using soap and water, spread cat litter over oil, sweep it up and then throw it away in the trash.
- ☐ Sweep grass clippings, fertilizer and soil from driveways and streets back onto the lawn. Remove trash from street gutters before it gets washed into storm drains and washes.

## Backyard Wildlife

With nearly 900 kinds of animals, Nevada is rich in wildlife diversity—335 non-game birds, 103 mammals, 54 reptiles and 350 accidental, migratory species. Providing adequate food, water and shelter can increase the number and variety of species that live in your yard.



Butterflies add beauty to the yard while pollinating plants.

Grow plants that provide food for butterfly larvae, pollen, nectar, and shelter for the adults.



Toads and frogs help keep mosquitoes and other unwanted insects under control.

Bee boards or pithy stems of elderberry or sunflowers are good nesting sites for native bees that pollinate flowers.



## Desert Bioscape Actions

- Plant vines, shrubs and trees that provide cover, nesting areas or food for birds, butterflies and other wildlife.
- Provide a water source, such as a bird bath or a small pond, for wildlife.
- Provide wildlife shelters such as a bat house, bird house, brush pile or a dead tree.
- Identify five kinds of wildlife critters (insects, arachnids, reptiles, birds, etc.) that live in your yard.

## Aquascaping for You and the Wildlife

Even small backyard ponds are beneficial for wildlife. A balanced system that includes fish and plants won't need a pump or filters (as long as you don't feed the fish).

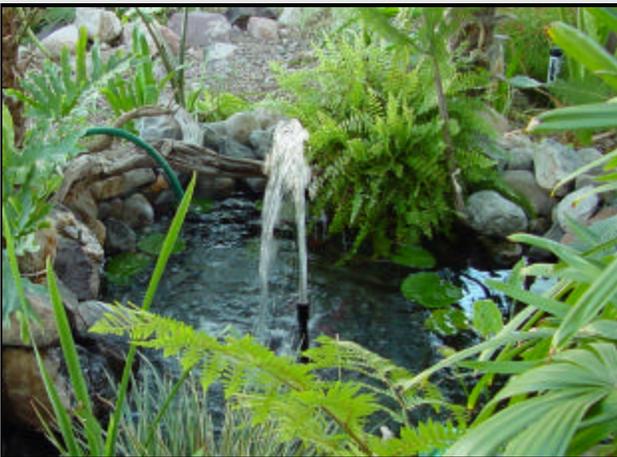
- Flexible PVC or rubber liners allow you to create the pond shape you want. Create a 9-inch wide shelf, about 9 to 12 inches below the water line, for potted aquatic plants. Walls should have a 20 degree slope.
- Preformed ponds are usually rugged, made of fiberglass or PVC. They can be placed above or below the ground.

## On the Waterfront

Waterfront property owners realize the special contribution lakes and waterways make to the quality of life. They also understand how fragile these natural treasures can be.



A beautiful and environmentally sound pond is a great addition to a yard.



Do not apply fertilizer within 10-30 feet of water. Planting adapted, non-invasive vegetation next to the water for wildlife food and habitat would be better!

## Desert Bioscape Actions

- Establish a 10-30 foot "no fertilizer, no pesticide" zone along your shoreline.
- Remove invasive exotic aquatic plants by cutting, pulling or raking. After using herbicides registered for use in water, remove dead plants from the water to reduce pollution.
- Decrease wave action and increase habitat by placing clean native rocks along water fronts without a beach.
- Protect native shoreline plants. Never remove other vegetation without first seeking proper guidelines and permits.
- If possible, plant a border of low maintenance plants between your lawn and shoreline to absorb nutrients and provide wildlife habitat.
- Where feasible, plant native aquatic vegetation along your shoreline.

**Desert Bioscape**  
is a program of the  
University of Nevada Cooperative Extension.



For more lawn and gardening information: [www.unce.unr.edu](http://www.unce.unr.edu)  
Technical Assistance: Vicki Paul and Barbara Toston  
Photos by M. L. Robinson

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For further information: M. L. Robinson  
University of Nevada Reno Extension  
8050 Paradise Road, Suite 100  
Las Vegas, Nevada 89123  
702-222-3130  
[robinsonm@unr.edu](mailto:robinsonm@unr.edu)

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