Creating landscapes for wildlife

... A Guide for Backyards in Utah

Creating Landscapes for Wildlife

...a guide for back yards in Utah

Table of Contents

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1 Landscaping for wildlife

Utah residents live in an environment of incomparable natural beauty. Our state has a range and abundance of habitats that would be hard to match in any other, and this variety provides another precious resource—a rich diversity of wildlife. Wherever we live, we are fortunate to have opportunities to see and enjoy a variety of fascinating wildlife species.

We can bring a part of this great resource even closer to our day-to-day lives. By "landscaping for wildlife," we can design a residential yard which attracts and supports native birds, mammals, reptiles and amphibians.

The purpose of this booklet is to help you select and arrange plants and other elements that fulfill wildlife needs, so that you can attract, observe and enjoy wildlife within your own yard.

Why landscape for wildlife?

The world is losing its wildlife. Cities grow and extend into areas of natural landscape; and other human activities encroach on native plant and animal communities. As a result, wildlife must seek food and shelter in areas that decrease in size each year.

We can bring some of this "lost" habitat back into our communities. The satisfaction of attracting birds to our yard is doubled when we realize that we are not only contributing to the well-being of wildlife, but rebuilding habitat in our corner of the world.

Landscaping for wildlife can be challenging and educational as we tune in to the natural processes in our yards. Children and adults can explore, discover and learn with every season in the nature garden. Knowledge and appreciation of nature are gifts we can give to children, gifts that they will value all their lives and will pass along to their own children.

We also benefit economically from landscaping for wildlife: most of the habitat guidelines in this booklet save time, energy and water; and a well-planned, landscaped yard increases home value substantially. Imagine the additional value of a nest of hummingbirds or a screech owl that returns every summer.

In all of these ways, a wildlife garden repays our investment many times over. But just as important, landscaping to attract wildlife is fun.

The consideration we extend to wildlife in our yard will be rewarded more and more each year as we discover new wild visitors and enrich our lives with an awareness of the birds and animals that share our environment.

The common blue butterfly depends on lupine flowers and leaves for food and cover.

How to use this booklet

Whether you are planting a yard from scratch, or modifying an established yard, this booklet will assist you in defining and meeting your wildlife gardening objectives.

This guide is divided into three sections that correspond to the phases you would go through in planning and caring for a residential landscape. Read through the book, become generally familiar with the processes described, and think about how the recommendations fit into your particular landscaping situation. Then, when you are ready to begin your wildlife garden, return to each section for the detailed information.

Part 1 will familiarize you with wildlife needs and how they are combined in habitat; so that before you begin your wildlife garden, you will have a good idea of what you will be trying to achieve. This section describes four main climatic and geographic regions of the state, and helps you locate your home within a region. This information is key to your landscaping success.

Part II is a step-by-step guide to creating wildlife habitat. It explains how to analyze the existing conditions in your yard, and how to use this information in your landscape plan. It lists and describes some general principles to guide habitat planning and to help you structure wildlife plantings.

Then it lists recommended plants for each of the four regions, so that you can select the plants best suited for your conditions.

Part III provides additional information that will help you put the finishing touches on your wildlife garden or refine the garden over the years.

A checklist summarizes the steps of planning a landscape to attract wildlife and provides space for you to begin a plan for your own yard.

References are listed on the back cover of this booklet. For any topic that you want to know in greater depth, there is a listing of where to go for further information or assistance.

2 The world of habitat

A crucial step in landscaping for wildlife is understanding the needs of the animals that you want to attract to your yard. To survive, all living animals need food, water, and some kind of cover for shelter and protection. They also need a certain amount of space. A yard that provides these will attract and support wildlife.

Each species has its own needs for food and cover. The Yellow Warbler, for example, eats insects that live on leaves in the canopies of shrubs and trees. Therefore, it can survive only where woody plants with leafy growth occur. The elements that meet a species' particular needs for food, water, cover and space make up its habitat.

Some animals have very specific habitat needs and cannot meet them in a suburban residential area. However, a surprisingly high number of desirable wildlife species can be attracted to a residential yard.

For many species of wildlife, plants are the fundamental source of food and cover and are, therefore, the most important features of wildlife habitat. Because of the key role that plants play, they offer some easy and exciting opportunities for creating wildlife habitat in your own yard.

Food and food groups

We think of berries or other fruits as the main wildlife foods, but all parts of plants and trees are used in some way.

Leaves, twigs, roots, buds, stems, grasses, mosses and lichen are eaten. Fruit and nuts provide nutrition in the fall and winter when other food isn't as readily available. Seed-eaters, such as the American Goldfinch or least chipmunk, depend on the grasses especially, but also flowers, shrubs and trees. Flowers provide the nectar that sustains bees, butterflies, moths, orioles and hummingbirds.

Many wildlife species prefer not only certain food types, but also certain locations for finding food. Birds are an example of this. Some birds spend their lives at ground level hiding and foraging among unmown grasses, roots or accumulated leaves. Others stay mainly in the shrubs between three and ten feet from the ground. Some birds might not venture beyond the trunk and branches of trees in their searches for food while others might have as their domain the very highest tree branches. For this reason, when planning backyard habitat it is important to include a variety of plant sizes, shapes and ages.

Air and water support an astounding variety of insects that are scooped up by birds and bats or eaten by water dwellers such as the chorus frog. The insects we may tend to regard as pests or annoyances are really a lifeline for most wildlife species. Wildlife, in fact, play a key role in keeping insect populations in check.

Most animals' diets change with seasons as different foods become available and as their needs vary. The Lark Sparrow that resides in Utah lives in open, grassy fields and eats seeds. Come spring, it enriches the diet of its young with protein-rich insects.

Cover

Habitat must also provide cover for wildlife. Most wildlife will not venture for long into unprotected sites where they are exposed and vulnerable to predators or extreme weather conditions. Birds and other animals constantly seek protective cover whether they are foraging for food, taking care of their young, or simply resting. Including and arranging plants and other features to provide cover, especially near food and water sources, is important in landscaping for wildlife.

Plants offer many kinds of cover for wildlife and each wildlife species has its own requirements for cover. Tall grasses, spiny cacti, dense shrubs, leaf litter on the ground, evergreen boughs, high leafy tree canopies, downed logs, stumps, and cavities in decaying trees provide valuable cover for a variety of wildlife. Vegetation, rock piles, brush piles, snow, water and burrows in the ground are just some of the forms of protective cover used by wildlife.

Water

Water is another critical need. It may attract a concentration of birds, amphibians and other animals. Most species depend on water for drinking and some require water for special needs during certain phases of their life cycle. Frogs, toads, and salamanders, for example, need water for the development of their eggs and young; and most birds need to be near water for nesting.

Wildlife use all parts of plants and trees for food.

In Utah, habitats with permanent or intermittent water have vegetation different than the other, more arid parts of the state. These areas support greater numbers of wildlife species than their surroundings.

Special needs

Food, cover and water requirements of any species change during the year; and a fourth habitat need involves any special combination of these elements that are needed during breeding seasons, migration, hibernation or times of severe weather conditions.

One special need is a safe nest location. Some species prefer to nest on the ground in a swirl of grass. Others prefer a dense, thorny shrub such as raspberry. Another might seek a tree that has a particular branching habit, or even a hobbit-like retreat in a hole inside a decaying tree.

Movement

All animals have mobility needs—daily movement in search of food or a seasonal migration to wintering or breeding grounds.

Terrestrial animals such as rabbits, fox and deer use hedgerows, irrigation canals, stream beds, ravines and arroyos in their daily or nightly forays. Their survival depends on undisturbed travel lanes that have an abundance of vegetative cover.

Many migrating bird species seek heavily vegetated areas as stopover resting and feeding sites. Warblers, vireos, flycatchers, tanagers, and buntings pass through in spring and fall, and these brilliant messengers of the seasons take advantage of prime back yard habitat when they spot it.

More valuable with age...

A youthful tree may provide a lush canopy of leaves that shelters a variety of songbirds. As the tree ages and the production of leaves wanes, the tree assumes a different, but important habitat role.

Dead and decaying trees are especially important for wildlife. Without them, some birds and other animals could not exist. In the aging process, the woody portion of a tree begins to soften and develop holes that are used by owls, woodpeckers or squirrels as nesting or resting cover. As wood softens with age and decay, woodpeckers excavate their nest sites. Woodpeckers, bluebirds, chickadees, house wrens, nuthatches, tree swallows, American Kestrels, flying squirrels, and many other animals are all cavity-nesters that depend on the availability of holes in trees.

The composition of a snag changes during the decay process, and different mosses, lichens and insects are attracted. These in turn provide a source of food and nesting materials for wildlife species that reside in and near older trees.

Snags and dead, or partially dead, trees are treasured by wildlife and they are the focal point of life and support for many plants, insects, birds and mammals. Many people who have retained or incorporated snags or branches in their yards report that these are the most often-used elements of their wildlife gardens.

If you have a dead or partially dead tree in your yard, consider it to be a blessing. Remove any branches that might pose a safety threat, and then watch the snag become a center of wildlife activity over the years. If a snag just isn't a possibility for your yard, there are other ways that you can include older tree parts in your wildlife garden.

Rescue dead logs and branches that are set out at the curb or that have blown down in a windstorm, and place them in your yard near food, cover or water. A branch for perching is especially useful near bird feeders; and logs can be placed among the thicker plantings of shrubs and groundcovers.

In some areas of your wildlife plantings, let the fallen leaves accumulate and decay naturally. These not only help enrich the soil and conserve moisture, but they also provide nesting, feeding, and hiding opportunities for wildlife species not commonly seen in a back yard.

Look for ways to include all ages of trees and other plants in your yard!

3 Regions and vegetation zones in Utah

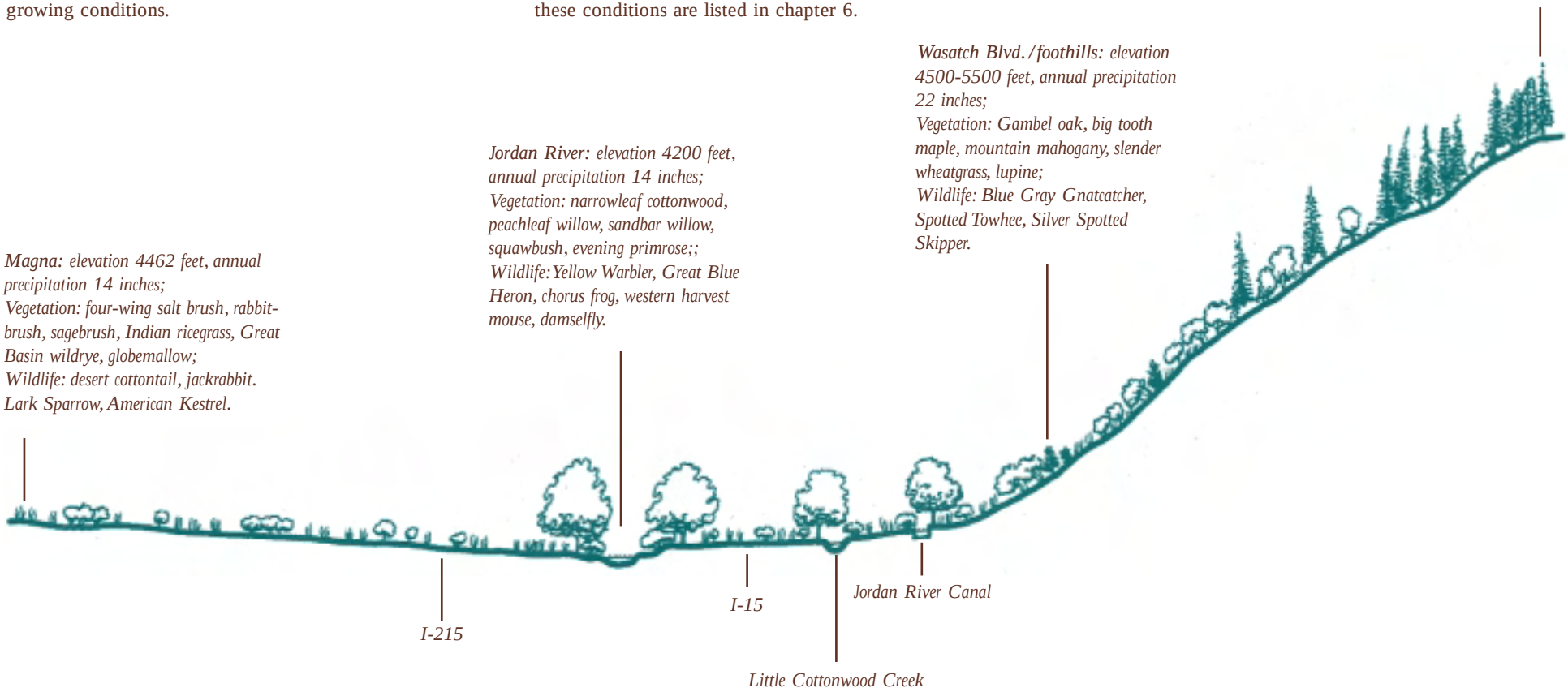
Pinpointing your location

The deep canyons, lush valleys, steep rock faces, sandstone forms and wooded foothills that we see in Utah produce a diverse range of plant growing conditions around the state. As a result, many different plant and wildlife species are present.

The four regions shown on the map on the next page denote areas in Utah that have similarities in geology, soils and climate. Within each region there are different plant communities—plants that occur together under certain growing conditions.

The main factor that causes plant communities to differ within the same region is elevation. In Utah, elevations range from 2,350 feet at Beaver dam Wash in the southwest corner of the state, to 13,528 feet atop King's Peak in the Uinta Mountains. The tremendous variety in topographic relief, even within regions, is illustrated by the range of different plant communities that occur in each region.

The first step in the process of landscaping for wildlife is to identify which region you live in. Next, identify which elevation level and plant community type your home is located within. The plants for landscaping that grow in these conditions are listed in chapter 6.



A cross-section along the Wasatch Front, from Magna to Alta. Different plant and wildlife communities occur with changes in elevation and presence of water. Such diversity of plants and wildlife because of topographic variety is a phenomenon that occurs throughout Utah.

Great Basin Desert

The Great Basin Desert region is characterized by a series of mountain ranges from 7,000-12,000 feet in elevation, interspersed by basins and valleys 4,500-6,000 feet in elevation. The annual rainfall can be as low as 4 inches in the Great Salt Lake desert, but the average precipitation in Delta, Milford and Cedar City is 7-11 inches. Towns such as Filmore and Tooele receive as much as 14-24 inches annually. The soils are generally alkaline because of the arid climate and the heavy concentration of salt and minerals in Lake Bonneville, which covered this area in prehistoric times. The region is known for its hot, dry summers and cold winters. Most of the annual precipitation occurs as snow, making this a cold desert region.

Southwest Desert

With the venerable Joshua tree as a prominent indicator, the Mojave Desert reaches into a very small section of southwestern Utah. Known as warm desert, this region is characterized by hot, dry summers and mild winters. It does have a winter season, however, with below-freezing temperatures on 75-100 nights annually. Rainfall at St. George averages 8-9 inches per year, and May and June are generally the driest months. The conditions in this region foster plant and animal species that are unique to this small, but special, part of Utah.

Mountains and Valleys

This region consists of the 9,000-10,000 foot Wasatch Mountains on the north, the Uinta Mountains to the northeast, and a group of high plateaus, 9,000-10,000 feet high, that range from Spanish Fork and Price canyons toward the southwest corner of Utah. The major factors affecting plant growth in this region are elevation and aspect (the direction that a slope faces). A south-facing slope is generally warmer and drier than a north-facing slope. You can observe this by travelling up any of the canyons along the Wasatch Front where, in the lower portions, the south-facing slopes are vegetated with the sun-and drought-tolerant Rocky Mountain and Utah Junipers, while shade loving Douglas firs predominate along the cooler, north-facing slopes.

The mountains in this region provide much of Utah's water. Even so, annual rainfall averages reflect those of a semi-arid region, ranging from 10-11 inches at Panguitch and Manti, to 14-20 inches at Heber City, Ogden, Provo and Logan, to 20-36 inches at Park City. Most of the annual precipitation in this region occurs as snowfall.

Canyons and Plateaus

This region is the most diverse topographically, with elevations that range from about 2,500 feet in canyon bottoms to 10,000 feet along the Tavaputs Plateau, 11,000 feet in the Abajo Mountains, and 12,000 feet in the La Sals. The majority of towns are located at elevations between 4,000 and 5,600 feet, with Monticello higher than the rest at 7,050 feet.

In this environment, a great variation in temperature highs and lows accompanies the topographic diversity. Rainfall averages are generally 6-10 inches yearly—from 5-6 inches at Green River, to 7-10 inches at Vernal, Price, Moab, Blanding and Bluff, to 14-16 inches in Monticello.

4 Fitting your yard into the picture

This chapter is written for people who are starting their landscape "from scratch." Those who have an established yard, but want to add some habitat areas, should skip to Chapter 5.

The process of preparing a landscape plan has four main steps:

1. You assemble information about your yard and your family's needs.
2. You set landscaping objectives to meet the outdoor living space needs of your family and also to attract wildlife. The combination of the existing conditions and the landscaping objectives forms the basis for the landscape plan. This chapter describes how to do these steps.
3. You determine what kind of habitat plantings you will have and where they will go, based on the guidelines in Chapter 5.
4. You select the plants for habitat areas from the lists in Chapter 6.

This approach enables you to add wildlife habitat to your landscape and still meet the other needs and uses that your family has for the yard. Inventorying the existing conditions in your yard also helps you understand your growing conditions and to choose the plants that are best suited for them.

Step 1: Inventory existing conditions

The tools you will need are a plot plan of your property and your own knowledge and observations. If you do not have a plot plan, sketch a rough bird's-eye view of your property and record the following information:

Preliminaries

First, draw on the plan all property lines, built structures and their access points, paved areas, utilities (both buried and overhead), and any areas requiring solar access. It is a good idea to contact the municipal planning and zoning office for information about any landscaping regulations in your community.

Family Uses

Label the location of all areas used for lawn games, outdoor cooking and entertainment, children's play, vegetable gardening, clothes drying, outdoor storage, pet confinement and snow piling.

Environment and Climate

Annual Rainfall: Which times of year receive the most precipitation? Which areas of your yard are mostly shady? Which are mostly sunny, and where are the areas of the most intense sun? Topography and Drainage: Describe the general lay of the land. If your property slopes, which direction does it slope?

Water: Is there any water existing on or near the site? Make note of any stream, pond, irrigation canal, spring or the location of the drainage downspouts from your roof.

Soils: Check the soil in your yard. Most plants grow best in certain types of soil. If you know what kind of soil you have, then you can select the plants that thrive in it.

Dig into the soil and take a close look at it. Are the grains relatively rough, gritty and large-textured? This would indicate a sandy soil. Are they fairly small and shiny, and do they stick together when you squeeze them? This would indicate that the soil has a higher clay content. Is the soil more alkaline or acid? For more detailed information about soils, refer to page 19.

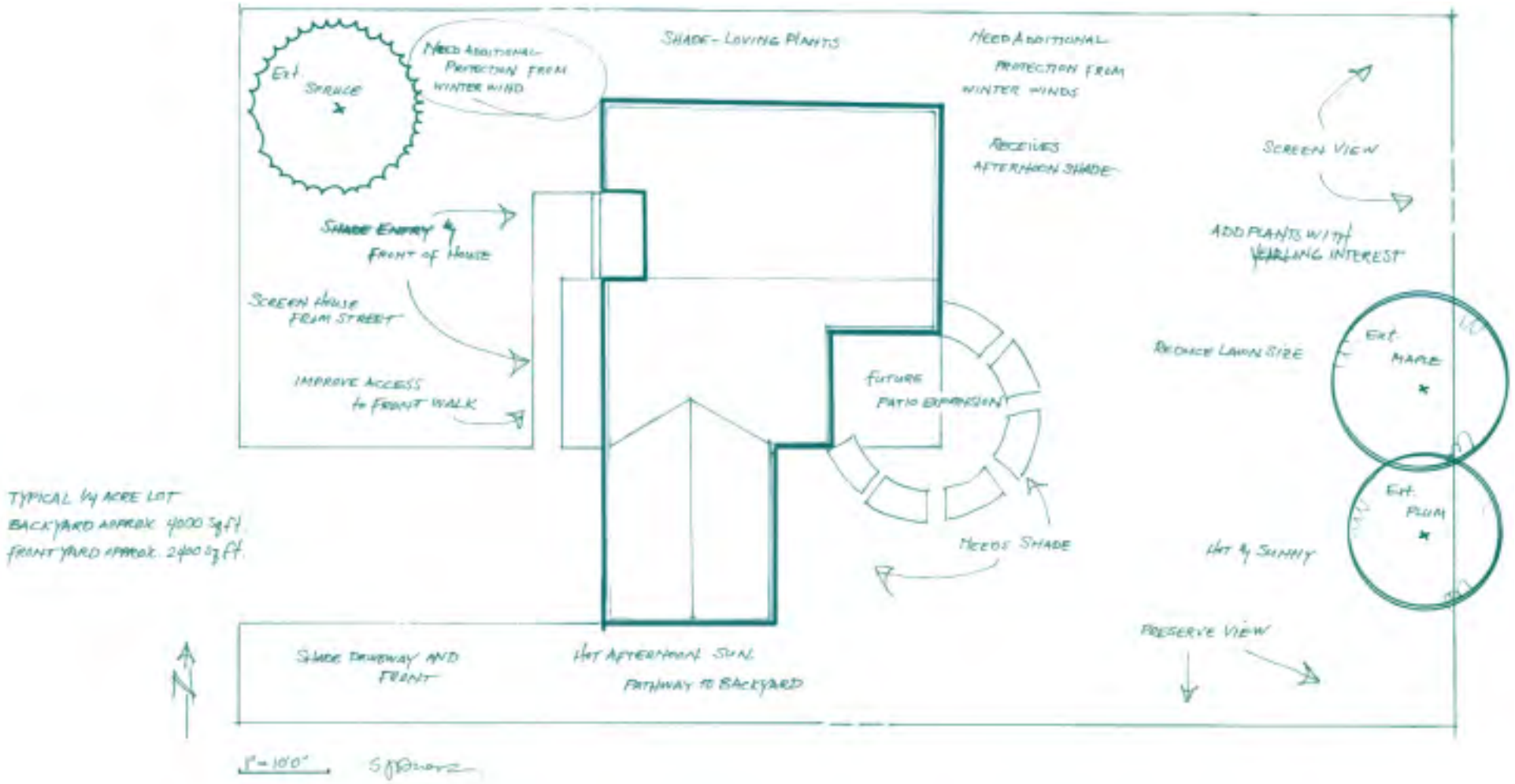
Vegetation: Draw all existing ground cover, shrubs, and trees to scale on the plan. For trees, draw a circle that represents the size of the canopy, rather than the trunk, so that the shaded area beneath it will be apparent. Write down the plant species, approximate age and condition of each. Are any of the species native plants? The references listed at the back of this booklet can help you answer these questions.

Provide ample space for family activities as you plan your landscape.

Step 2: Analyze the information and set your objectives

Now look at the information you have collected about your yard and set your landscaping objectives by answering the following questions:

1. What kind of soil type, sunlight and climate conditions must plants be able to tolerate in order to thrive in this yard?
2. Which areas of the yard are best-suited for family uses and needs? How should these areas be modified to make them more suitable or comfortable? Do they need screening from sun, wind or neighbors? Chapter 6 will describe how to do this.
3. Are there any areas of lawn that are not used for any activity and could be replaced with wildlife habitat plantings?
4. What are the existing features that can become a starting point for building the wildlife landscape? Examples might include:
   - an existing stand of native vegetation
   - large, old, shade trees
   - scattered trees and shrubs that could be connected into one large planting
   - presence of water—stream, pond, canal, spring or wetland
   - presence of wildlife species
   - topographic variety



Take inventory of the existing vegetation and climactic factors in your yard before starting the landscape plan. Include family use areas.

5 Developing the Landscape Plan

Once you have a good idea of what currently exists in your yard and what your landscaping objectives are, you can add wildlife habitat considerations to the planning process. This chapter will help you determine the best location for habitat plantings, and how to arrange the plants within them.

The best way to attract wildlife is to increase the amount of and diversity of vegetation in the yard.

The keys to landscaping for wildlife are to increase the number of plants and to provide several different species and sizes of plants. Try to connect all the planted areas together to make one large mass of vegetation.

Planting vegetation is a long-term investment that provides more for wildlife with each year. Plantings offer year-round cover, nesting sites and a dependable supply of food. Bird feeders are good additions to yards and let us see birds at close range, but the best foundation for wildlife support is diverse and abundant vegetation.

The following guidelines will help you select and arrange plants to create backyard wildlife habitat.

1. Choose plant materials that offer the best year-round food and cover resources for wildlife. Select plants so that there will be some kind of food available in the yard from early spring through late fall, and even into winter . Evergreen plants offer good winter cover. Wildlife plants are listed for each region on pages 10 through 17.
2. Include as many plants as possible and make habitat areas as large as possible. As illustrated here, include several different vertical layers within the plantings so that wildlife have a variety of habitat choices—from a rich vegetation layer on the ground, to different shrub heights, to the tallest trees. Connect the plantings so that they form a continuous flow across your yard without gaps between them.
3. Include different sizes, shapes and ages of plants and a variety of plant species. However, group the same plant species together. This will look better to us and be more valuable as habitat to wildlife.
4. Reduce or eliminate lawn areas that are not needed or used. Open lawn areas do not fulfill many wildlife habitat needs. Replace bluegrass turf with trees, shrub masses, ground covers, perennial flowers or native grasses.
5. Add variety to the edges of planted areas. Try curved or undulating borders, rather than straight ones. Or, increase the number of plant species and heights along borders by mixing grasses, flowers, low shrubs and ground covers.
6. Provide water in the wildlife garden. This is an important feature to attract wildlife. More ideas for providing water are described on pages 20 and 28.

Remember Also...

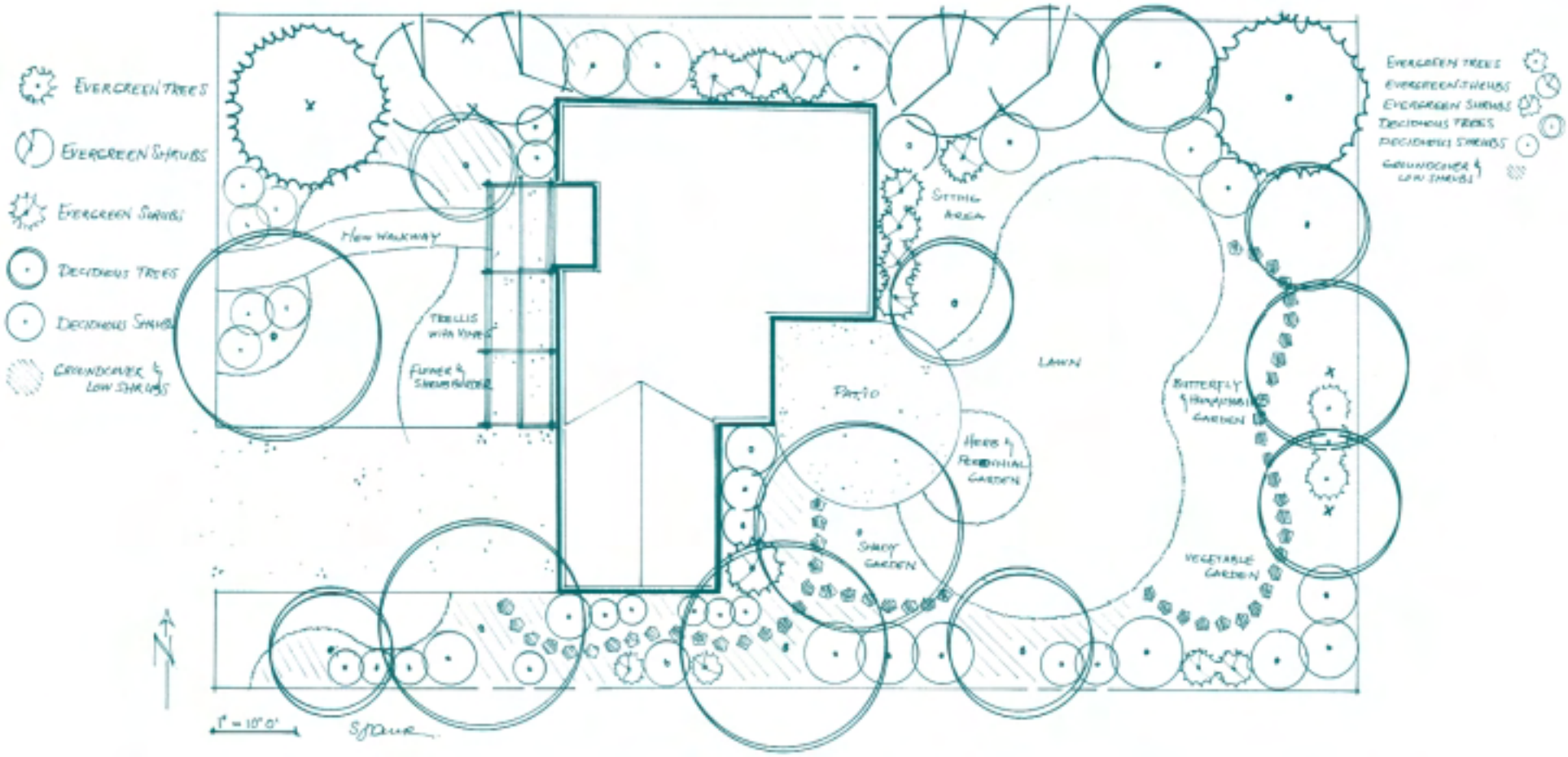
When preparing your landscape plan, be sure to draw the plants at their mature size. Space them so that they will not crowd one another as they grow.

When locating habitat areas, consider window locations in the home so that wildlife watching will be possible from inside the house.

Match the plants listed on pages 10 through 17 with the particular climate, soil, light and water conditions that exist in your yard.

Do not plant large trees near buried or overhead utility pipes, cables or wires.

Plan so that the wildlife garden and your investment in plant materials can be phased in over the years. Start the first year by planting trees and connect these over the years with various heights of shrubs, ground covers, flowers and grasses.



Creating a landscape for wildlife: The number of plants has been increased; the mown lawn area has been reduced and replaced with native flowers, grasses, shrubs and trees.

Southwest Desert Region

Southwest Desert Region: plants for sites over 4000' elevation

Plant Name	Height	Spread	Sun Exposure	Drought Tolerance	Deciduous / Evergreen	Wildlife and Ornamental Value
Trees						
Utah Juniper *Juniperus osteosperma*	30'	25'	Sun	Excellent	Evergreen	Food and cover for birds and small mammals. Attractive bark and sculptural form.
Pinyon Pine *P. monophylla* or *Pinus edulis*	20'	15-20'	Sun	Excellent	Evergreen	Small mammals, jays and other birds or eat pine nuts. Small, slow-growing tree with picturesque form.
Gambel Oak *Quercus gambelii*	30'	12-15'	Sun	Excellent	Deciduous	Small mammals and birds eat acorns; important winter cover. Small, slow-growing, stately tree.
Velvet Ash *Fraxinus velutina*	25-40'	20'	Sun	Good	Deciduous	Seeds for birds and small mammals. Doubtful commercial availability; may have to try to grow from seed or cutting, but an excellent tree.
Shrubs						
Birchleaf Mountain Mahogany *Cercocarpus montanus*	4-9'	6'	Sun	Excellent	Deciduous	Important deer browse; fruit and seeds for birds and small mammals. Ornamental seeds and fall color.
Curl-leaf Mountain Mahogany *Cercocarpus ledifolius*	8-16'	15-20'	Sun	Excellent	Evergreen	Excellent winter fruit and seeds for birds and small mammals. Ornamental spiraled seeds.
Sandbar Willow *Salix exigua*	5-15'	10-15'	Sun	Poor	Deciduous	Dense cover for wildlife. Attractive branch color in winter.
Mormon Tea* *Ephedra nevadensis*	2-4'	4'	Sun	Excellent	Evergreen	Seeds attract quail. Interesting shrub accent.
Utah Serviceberry *Amelanchier utahensis*	6-15'	10-15'	Sun	Good	Deciduous	Birds eat berries; deer browse leaves. Showy, fragrant spring flowers, purple berries, muted fall leaf color.
Sand Sage *Artemisin filifolin*	4'	4'	Sun	Excellent	Evergreen	Seeds and cover for birds. Lovely, feathery foliage.
Squawbush Sumac *Rhus trilobata*	2-6'	8'	Sun	Excellent	Deciduous	Food and cover for ground birds, small mammals and deer. Red fruit; spectacular red fall color.
Shrub Live Oak *Quercus turbinella*	4-8'	6'	Sun	Excellent	Evergreen	Food and year-round cover for birds, small mammal. Attractive evergreen shrub.

*indicates tolerance of alkaline soils

Southwest Desert: native grasses

Plant Name	Warm / Cool Season	Seeding Time	Bunch or Sod	Height	Drought Tolerance
Indian Ricegrass *Stipa hymenoides*	Cool	Fall	Bunch	12-24"	Excellent
Blue Grama *Bouteloua gracilis*	Warm	Summer	Bunch and sod	12-18"	Excellent
Side-oats Grama *Bouteloua curtipendula*	Warm	Summer	Bunch	12-24"	Excellent
Galleta *Hilaria jamesii*	Warm	Spring	Bunch and sod	6-12"	Excellent
Alakali Sacaton* *Sporobolus airoides*	Warm	Fall	Bunch	12-24"	Excellent

*indicates tolerance of saline and alkaline soil

Warm-season grass: Grows and stays green during the summer; dormant in winter.
Cool-season grass: Grows and stays green in the spring and fall; dormant in summer and winter.
Bunch: Grows in separate clumps.
Sod forming: Spreads and grows together like a turfgrass (mowing may accelerate spreading).

Southwest Desert: native flowers

Plant Name	Height	Color	Bloom Period	Other Comments
Firecracker Penstemon *Penstemon eatoni*	24"	Red	Spring/ early summer	Attracts hummingbirds.
Palmer Penstemon *Penstemon palmeri*	36-48"	Cream/pink	Spring/early summer	Very fragrant, tubular flowers.
Sunflower *Helianthus annuus*	72"	Yellow	Late summer	Provides bird seed for fall and winter.
Skyrocket Gilia *Cilia aggregate*	12-18"	Orange.	Summer	Attracts hummingbirds.
White-tufted Evening Primrose *Oenothera caespitose*	8"	Whitish-pink	Spring/early summer	Very drought tolerant, tough, and fragrant; attracts moths.
Four O'clock *Mirabilis multiflora*	24"	Brilliant purple	All summer	Stunning ornamental; attracts hummingbirds.
Desert Marigold *Baileya multiradiata*	18-24"	Bright yellow	All summer	Very drought tolerant and showy.
Globemallow *Sphaeralcea grossulariaefolia*	24-36"	Red-orange	May to September	Very hardy; long blooming period.

Evening primrose

Southwest Desert Region: plants for sites at 2500'-4000' elevation

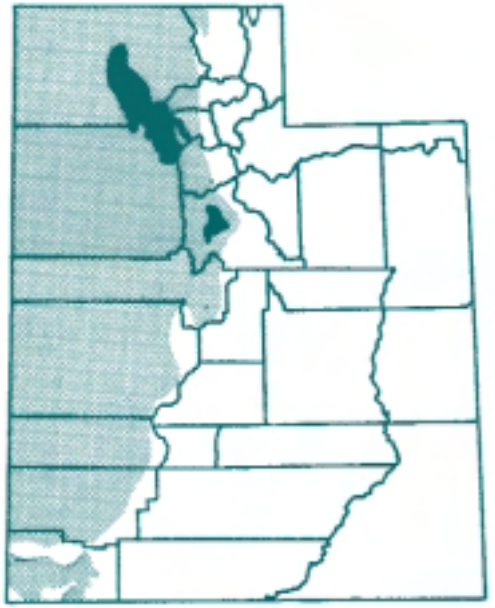
Plant Name	Height	Spread	Sun Exposure	Drought Tolerance	Deciduous / Evergreen	Wildlife and Ornamental Value
Trees						
Desert Willow *Chilopsis linearis*	25'	20'	Sun	Good	Deciduous	Nectar for hummingbirds. Profuse pink flowers.
Catclaw Acacia *Acacia greggii*	20'	10-15'	Sun	Excellent	Deciduous	Nectar for bees and butterflies. Forms thorny thicket.
Velvet Ash *Fraxinus velutina*	40'	15-20'	Sun	Good	Deciduous	Provides seeds for birds. Velvety leaves.
New Mexico Locust *Robinia neomexicana*	25'	15'	Sun	Good	Deciduous	Nectar for bees, seeds for quail and squirrels. Pendulous lavender flowers in early summer.
Fremont Cottonwood *Populus fremontii*	50-60'	50-60'	Sun	Good	Deciduous	Soft wood for nest cavities; perches for large birds. Bright yellow fall leaf color. Female tree produces cotton.
Velvet Mesquite *Prosopsis glandulosa*	30'	20'	Sun	Excellent	Deciduous	Nectar for bees; seeds are an important food for birds. Bright green foliage with 3-6" long seedpods.
Shrubs						
Roundleaf Buffaloberry *Shepherdia rotundifolia*	3-4'	4'	Sun	Excellent	Evergreen	Food and cover for quail and small mammals. Reflective, silvery foliage.
Rubber Rabbitbrush *Chrysothamnus nauseosus*	2-6'	4'	Sun	Excellent	Evergreen	Seeds and cover for birds and small mammals. Excellent yellow fall color.
Apache Plume *Fallugia paradoxa*	3-6'	3'	Sun	Good	Deciduous	Seed for birds and small mammals. White flowers in Spring and feathery seed heads from fall into winter.
Indigo Bush *Dalea fremontii*	3'	3'	Sun	Excellent	Deciduous	Late summer nectar for bees and butterflies. Profuse fragrant purple flowers.
Creosotebush *Larrea tridentata*	4-10'	4-10'	Sun	Excellent	Evergreen	Nectar for bees; year round cover for birds and small mammals. Good screen or windbreak.
Four-wing Saltbush* *Atriplex canescens* or *Atriplex polycarpa*	4-6'	4'	Sun	Excellent	Evergreen	Profuse fruits on female plants provide excellent bird seed. Rose-hued fruits.
Soap Tree Yucca *Yucca elata*	6'	3'	Sun	Excellent	Evergreen	Nectar for moths. Creamy white blooms.
Winterfat* *Ceratoides lanata*	1-3'	3'	Sun	Excellent	Deciduous	Important winter food for deer, small mammals, and birds. Profuse whispy white fruits from fall into winter.
Vines						
Canyon Wild Grape *Vitis arizonica*	Vine	Vine	Sun	Good	Deciduous	Colorful and aromatic fruit for birds and small mammals; bark for nest material.

*indicates tolerance of alkaline soils

Great Basin Region

Great Basin Region: wildlife plants for homes in the foothills

Plant Name	Height	Spread	Sun Exposure	Drought Tolerance	Deciduous / Evergreen	Wildlife and Ornamental Value
Trees						
Singleleaf Pinyon *Pinus monophylla*	20'	25-20'	Sun	Excellent	Evergreen	Small mammals, jays, and other birds eat pine nuts. Slow-growing; picturesque form.
Utah Juniper *Juniperus osteosperma*	30'	25'	Sun	Excellent	Evergreen	Food and cover for birds and small mammals. Interesting bark and rugged form.
Curl-leaf Mtn. Mahogany *Cercocarpus ledifolius*	8-15'	15-20'	Sun	Excellent	Evergreen	Excellent winter deer food; frujt and seeds for birds and small mammals. Ornamental spiraled seeds.
Gambel Oak *Quercus gambelii*	30'	15'	Sun	Good	Deeiduous	Small mammals eat acorns; important winter cover for deer, birds, and mammals. Small, slow-growing tree
Shrubs						
Squawbush *Rhus trilobata*	2-6'	8'	Sun	Excellent	Deciduous	Food and cover for ground birds. Red fruit, spectacular fall color.
Chokecherry *Prunus virginiana*	15-20'	15-20'	Sun or Shade	Good	Deciduous	Fruit and nesting cover for birds. Showy spring flowers, dark purple fruit, red-orange fall color.
Big Sage *Artemisia tridentata*	2-4'	4'	Sun	Excellent	Evergreen	Food and cover for deer, elk, antelope, Sage-Grouse, and other birds. Yellow flowers in fall on upright stalks; aromatic foliage.
Rabbitbrush *Chrysothamnus* species	2-6'	4-6'	Sun	Excellent	Evergreen	Seeds and cover for small mammals. Stunning golden flowers in fall.
Fernbush *Chamaebatiaria millefolium*	6-8'	3-4'	Sun	Excellent	Deciduous	Browse for large mammals. Fragrant, fern-like leaves; showy, long-lasting flowers in mid-summer. Good in mass or as screen.
Bitterbrush *Purshia tridentata*	2-6'	4'	Sun	Excellent	Evergreen	Birds and small mammals eat seeds; important winter browse for deer, elk, and antelope. Yellow flowers in spring.
Cliffrose *Purshia mexicana*	6'	3-8'	Sun	Excellent	Evergreen	Important winter deer browse. Profuse, fragrant light yellow flowers in summer; long silky seed plumes in fall.
Fringed Sage *Artemisia frigida*	1-2'	5'	Sun	Excellent	Evergreen	Provides seeds for birds. Delicate, silvery-gray foliage forms dense mounds.



Great Basin Region: native grasses

Plant Name	Warm / Cool Season	Seeding Time	Bunch or Sod	Height	Drought Tolerance
Indian Ricegrass *Stipa hymenoides*	Cool	Fall	Bunch	12-24"	Excellent
Alakali Sacaton* *Sporobolus airoides*	Warm	Fall	Bunch	12-24"	Excellent
Sand Dropseed *Sporobolus cryptandrus*	Warm	Late Summer	Bunch	12~24"	Excellent
Western Wheatgrass* *Elymus smithii*	Cool	Fall or Spring	Sod	12-24"	Excellent
Bluebunch Wheatgrass *Elymus'Spicatus*	Cool	Fall or Spring	Bunch	12-24"	Good
Desert Needlegrass *Stipa speciosa*	Cool	Fall	Bunch	12-24"	Good
Great Basin Wildrye *Elymus cinereus*	Cool	Fall or Spring	Bunch	24-36"	Excellent

*indicates tolerance of saline and alkaline soil
Warm-Season Grass: Grows and stays green during the summer; dor:rnant in winter.
Cool-Season Grass: Grows and stays green in the spring and fall; dormant in summer and winter.
Grows in separate clumps.
Sod-forming. Spreads and grows together like a turfgrass (mowing may accelerate spreading).

Great Basin Region: native flowers

Plant Name	Height	Color	Bloom Period	Other Comments
Globemallow *Sphaeralcea grossulariifolia*	24-36"	Red-orange	May-September	Very hardy; blooms all summer.
Arrowleaf Balsamroot *Balsamorhiza sagittate*	16-30"	Yellow	Spring	Early season color; large plant.
White-Tufted Evening Primrose *Oenothera caespitosa*	8"	Whitish-pink	Early summer	Very drought tolerant and tough; fragrant; attracts moths.
Palmer Penstemon *Penstemon palnreri*	36-48"	Cream/ pink	Early	Very fragrant, tubular summer flowers.
Firecracker Penstemon *Penstemon eatoni*	24"	Red	Spring/early summer	Attracts hummingbirds.
Wasatch Penstemon *Penstemon cyananthus*	18-36"	Blue	Summer	Showy ornamental.
Narrowleaf Indian Paintbrush *Castilleja linariaefolia*	12-40"	Red	Summer	Difficult to establish, but attracts hummingbirds.
Tailcup Lupine *Lupinus argenteus*	12-24"	Dark blue	Early summer to fall	Attracts butterflies.
Prairie Aster *Machaeranthera tanacetifolia*	12-18"	Purple	Summer to fall	Blooms late into season.
Blue Flax *Linum lewisii*	24"	Blue	All summer	Prolific bloomer; spreads rapidly —use only in large areas.

Indian ricegrass

Great Basin Region: wildlife plants for homes in the valleys and basins

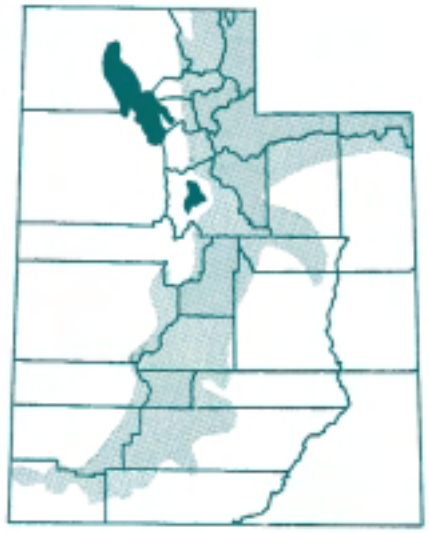
Plant Name	Height	Spread	Sun Exposure	Drought Tolerance	Deciduous / Evergreen	Wildlife and Ornamental Value
Trees						
Fremont Poplar - *Populus frenwntii*	50-70'	50-60'	Sun	Moderate	Deciduous	Soft wood for nest cavities; nesting , cover; perching for larger birds. Bright yellow fall leaf color. Female tree produces cotton.
Narrow leaf Cottonwood *Populus angustifolia*	40'	30-40'	Sun	Moderate	Deciduous	Soft wood for nest cavities. Moderate-sized shade tree.
Shrubs						
Sand Sage *Artemisia filifolia*	4'	4'	Sun	Excellent	Evergreen	Seeds and cover for birds and small mammals. Feathery ornamental foliage.
Silver Sagebrush *Artemisia cana*	2-5'	3'	Sun,	Excellent	Deciduous	Food and cover for deer, elk, antelope; Sage-Grouse and other birds eat seeds. Aromatic foliage.
Big Sage *Artemisia tridentata*	3-6'	5'	Sun	Excellent	Evergreen	Food and cover for deer, elk, antelope; Sage-Grouse and other birds eat seeds. Aromatic foliage, yellow flowers on spikes in fall.
Four-wing Saltbush* *Atriplex canescens*	4-6'	4'	Sun	Excellent	Evergreen	Food and cover for quail, native sparrows, and small mammals. Unique, rose-hued fruits on female plants.
Winterfat* *Ceratoides lanata*	1-3'	3'	Sun	Excellent	Deciduous	Important winter food for deer, small mammals, and birds. Profuse whispy white fruits from fall into winter.
Mormon Tea* *Ephedra nevadensis*	2-4'	4'	Sun	Excellent	Evergreen	Seeds attract quail; deer browse foliage. Unique shrub accent.
Bitterbrush *Purshia tridentata*	2-6'	4'	Sun	Excellent	Evergreen	Birds and small mammals eat seeds; important winter browse for deer, elk, and antelope. Yellow flowers in spring.
Rabbitbrush *Chrysothamnus* species	2-6'	4-6'	Sun	Excellent	Evergreen	Seeds and cover for small mammals. Stunning golden flowers in fall.
Greasewood* *Sarcobatus vermiculatus*	2-6'	4-6'	Sun	Excellent	Evergreen	Food and cover for jackrabbits; excellent year-round cover for small mammals. Light green foliage.

*indicates tolerance of alkaline soils

Mountains and Valleys Region

Mountains and Valleys Region: plants for homes in the foothills

Plant Name	Height	Spread	Sun Exposure	Drought Tolerance	Deciduous / Evergreen	Wildlife and Ornamental Value
Trees						
Utah Juniper *Juniperus osteosperma*	30'	25'	Sun	Good	Evergreen	Food and cover for birds, small mammals. Interesting bark and rugged, sculptural form.
White Fir *Abies concolor*	60-80'	25-30'	some shade	Moderate	Evergreen	Beautiful in mass or alone.
Big Tooth Maple *Acer grandidentatum*	30'	20'	Sun	Good	Deciduous	Food and cover for birds, small mammals, and deer. Outstanding fall color.
Gambel Oak *Quercus gambelii*	30'	12-15'	Sun	Good	Deciduous	Small mammals eat acorns; important winter cover. Not hardy north of Ogden.
Shrubs						
Birch-leaf Mtn. Mahogany *Cercocarpus montanus*	4-10'	6'	Sun	Excellent	Deciduous	Important deer browse; fruit and seeds for birds and small mammals, Ornamental seeds and fall color.
Silver or Big Sagebrush *Artemisia cana* or *A. tridentata*	2-5'	3'	Sun	Excellent	Deciduous	Seeds and cover for deer, elk, antelope, sage grouse, other birds. Silvery, aromatic foliage.
Woods Rose *Rosa woodsii*	2-6'	5'	Sun	Good	Deciduous	Year-round cover; winter food for birds and animals. Pink flowers in spring; ornamental red hips from fall into winter.
Bitterbrush *Purshia tridentata*	2-6'	4'	Sun	Good	Evergreen	Birds and small mammals eat seeds; important winter browse for deer. Yellow flowers in spring.
Serviceberry *Amelanchier alnifolia* or *A. utahensis*	4-12'	10-15'	Sun	Good	Deciduous	Birds eat berries; deer browse leaves, Showy, fragrant spring flowers, purple berries, muted fall leaf color.
Chokecherry *Prunus virginiana*	15-20'	15-20'	Sun or shade	Good	Deciduous	Fruit and nesting cover for birds. Showy spring flowers, dark purple Fruit, red-orange fall color.
Squawbush *Rhus trilobata*	2-6'	8'	Sun	Excellent	Deciduous	Food and cover for ground birds and small mammals. Outstanding fall color.
Rubber Rabbitbrush *Chrysothamnus nauseosus*	2-6'	4-6	Sun.	Excellent	Evergreen	Seeds and cover for small mammals; Stunning golden flowers in fall.



Mountains and Valleys Region: native grasses

Name	Warm / Cool Season	Seeding Time	Bunch or Sod	Height	Drought Tolerance
Western Wheatgrass* Elymus smithii	Cool	Fall or Spnng	Sod	12-24"	Excellent
Slender Wheatgrass Elymus trachycaulus	Cool	Fall	Sod	12-24"	Moderate
Bluebunch Wheatgrass Elymus spicatum	Cool	Fall or Spring	Bunch	12-24"	Good
Sheep Fescue Festuca ovina	Cool	Fall or Spring	Bunch	12-24"	Moderate
Prairie Junegrass Koeleria macrantha	Cool	Fall	Bunch	12-24"	Good
Sandberg Bluegrass* Poa secunda	Cool	Fall or Spring	Bunch	12-24"	Excellent
Sand Dropseed Sporobolus cryptandrus	Warm	Fall	Bunch	12-24"	Excellent
Indian Ricegrass Stipa hymenoides	Cool	Fall	Bunch	12-24"	Excellent

* indicates tolerance of saline and alkaline soil
Warm-Season Grass: Grows and stays green during the summer; dormant in winter.
Cool-Season Grass: Grows and stays green in the spring and fall; dormant in summer and winter.
Bunch: Grows in separate clumps.
Sod-forming: Spreads and grows together like a turfgrass (mowing may accelerate spreading).

Mountains and Valleys Region: native flowers

Name	Height	Color	Bloom Period	Other Comments
Arrowleaf Balsamroot *Balsamorhiza sagittate*	16-30"	Yellow	Spring	Early season color accent; large plant.
Firecracker Penstemon *Penstemon eatonii*	24"	Red	Spring/ early summer	Attracts hummingbirds.
Palmer Penstemon *Penstemon palmeri*	36-48"	Off-white/pink	Early summer	Very fragrant, tubular flowers.
Rocky Mtn. Penstemon *Penstemon strictus*	24"	Blue-purple	Early summer	Hardy; easy to grow.
Wasatch Penstemon *Penstemon cyananthus*	18-36"	Blue	Spring/ early summer	Showy ornamental.
Silvery Lupine *Lupinus argenteus*	12-24"	Blue	Summer	Attracts butterflies.
Wild Geranium *Geranium viscosissimum*	12-36"	Pink	Summer into fall	Long blooming season.
Sulpher Buckwheat *Eriogonum umbellatum*	6-12"	White/yellow	Summer	Attracts bees; seeds in fall and winter for birds forms matted ground cover.
Aspen Daisy *Erigeron speciosus*	12-24"	Purple	Summer	Showy, aster-like flowers.
Sunflower *Helianthus annuus*	72"	Yellow	Late summer	Excellent fall bird seed.
Aster *Aster* species	18"	Purple	Summer into fall	Blooms late into season.
Blue Flax *Linum lewisii*	24"	Blue	Summer	Prolific bloomer; spreads rapidly —use only in large area.

Golden Currant

Mountains and Valleys Region: plants for areas near water

Plant Name	Height	Spread	Sun Exposure	Drought Tolerance	Deciduous / Evergreen	Wildlife and Ornamental Value
Trees						
Water Birch *Betula occidentalis*	5-20'	15-20'	Sun'	Good	Deciduous	Seed, cover, and nest sites for birds. Excellent winter form, branch color
Thinleaf Alder *Alnus* incana	30'	15-20'	Sun or shade	Poor	Deciduous	Seed, cover, and nest sites for birds. Small, ornamental "cones" in spring and attractive bark in winter.
River Hawthorne *Crataegus douglasii*	5-25'	10'	Sun	Poor	Deciduous	Nesting cover and fruit for birds Attractive blossoms and fruit.
Shrubs						
Red-osier Dogwood *Cornus sericea*	10-15'	20'	Sun or shade	Poor	Deciduous	Fruit for birds. Spring flowers, fall white berries, red twigs ornamental in winter.
Willow *Salix* species	3-15'	15'	Sun	Poor	Deciduous	Cover for birds and small mammals.

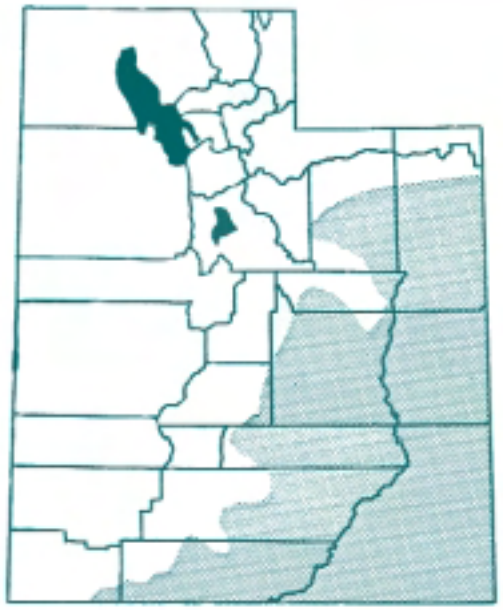
Mountains and Valleys Region: wildlife plants for homes in the mountains

Trees						
Douglas Fir *Pseudotsuga menziesii*	60-100'	30'	Shade	Moderate	Evergreen	Year-round cover for birds, small and large mammals. Ornamental screen or windbreak.
Subalpine Fir *Abies lasiocarpa*	60-100'	20'	Shade	Poor	Evergreen	Cover for birds and small mammals; food for squirrels and grouse. Excellent evergreen for tight spaces.
Blue Spruce *Picea pungens*	70'	30'	Sun or shade	Poor	Evergreen	Cover for birds, small and large mammals; food for grouse. Interesting blue-green foliage.
Dwarf Mountain Ash *Sorbus scopulina*	12-15'	5-10'	Sun or shade	Poor	Deciduous	Fruit for birds. showy white spring flowers; clusters of red-orange berries in the fall.
Shrubs						
Snowberry *Symphoricarpas* species	3'	5'	Sun or shade	Good	Deciduous	Fruit for birds and small mammals. White berries in fall and winter.
Golden currant *Ribes aureum*	4-6'	4'	Some	Moderate	Deciduous	Fruit for birds. Yellow spring flowers, deep red berries and red leaf color in fall.
Blue Elderberry *Sambucus caerulea*	6-12'	5-8'	Sun	Poor	Deciduous	Large quantities of fruit for birds and small mammals. Small white spring flowers and showy dark blue fruit.
Snowbrush Ceanothus *Ceanothus velutinus*	1-3'	10'	Sun	Moderate	Evergreen	Cover for ground-loving birds and Small mammals; also nectar, glossy leaves and spring flowers.
Utah Honeysuckle *Lonicera utahensis*	2-5' .	5-8'	Shade	Good	Deciduous	Fruit for birds and chipmunks. Yellow flowers in late spring.
Chokecherry *Prunus virginiana*	15-20'	15-20'	Sun or shade	Good	Deciduious	Fruit and nesting cover for birds. Showy spring flowers, purple fruit.

Canyons and Plateaus Region

Canyons and Plateaus Region: wildlife plants for homes in foothills or mountains

Plant Name	Height	Spread	Sun Exposure	Drought Tolerance	Deciduous / Evergreen	Wildlife and Ornamental Value
Trees						
Pinyon Pine *Pinus eduJis* or *P. monophylla*	20'	20'	Sun	Excellent,	Evergreen	Small mammals, jays, and other birds eat pine nuts. Picturesque evergreen.
Rocky Mountain Juniper or Utah Juniper *Juniperus scopulorum* or *J. osteosperma*	30'	25'	Sun	Excellent	Evergreen	Food and cover for birds and small mammals. Rugged, sculptural form.
Gambel Oak *Quercus gambelii*	30'	15'	Sun	Good	Deciduous	Small mammals eat acorns; important winter cover. Small, slow-growing tree.
Shrubs						
Curl-leaf Mountain Mahogany *Cercocarpus ledifolius*	8-12'	12-15'	Sun	Excellent	Evergreen	Excellent winter deer food; fruit and seeds for birds and small mammals. Ornamental spiraled seeds.
Utah Serviceberry *Amelanchier utahensis*	6-15'	10-15'	Sun	Good	Deciduous	Birds eat berries; deer browse leaves. Showy, fragrant spring flowers, purple berries, muted fall leaf color, and interesting winter form.
Squawbush *Rhus trilobata*	2-6'	8'	Sun -	Excellent	Deciduous	Food and cover for ground birds and Small mammals; deer and antelope browse foliage. Red fruit; red fall color.
Golden Currant *Ribes aureum*	4-6'	4'	Some shade	Moderate	Deciduous	Fruit for birds. Yellow spring flowers, deep red berries and red leaf color in fall.
Cliffrose *Purshia mexicana*	6'	3-8'	Sun	Excellent	Evergreen	Important winter deer browse. Profuse, fragrant light yellow flowers in summer; long seed plumes in fall.
Birchleaf Mountain Mahogany *Cercocarpus montanus*	4-9'	6'	Sun	Excellent	Deciduous	Excellent winter deer food; fruit and seeds for birds and small mammals. Ornamental seed heads and fall color.
Wavyleaf Oak *Quercus undulata*	4-8'	6'	Sun	Good	Evergreen	Food and year-round cover for birds, Small mammals. Attractive evergreen shrub.
Roundleaf Buffaloberry *Shepherdia rotundifolia*	3-4'	4'	Sun	Excellent	Evergreen	Fruit for quail, chipmunks, and squirrels. Reflective, silvery leaves.



Canyons and Plateaus Region: native grasses

Plant Name	Warm / Cool Season	Seeding Time	Bunch or Sod	Height	Drought Tolerance
Galleta* *Hilaria jamesii*	Warm	Spring	Bunch and sod	6-12"	Excellent
Saltgrass* *Distichlis spicata*	Warm	Summer	Sod	6-20"	Excellent
Sand Dropseed *Sporobolus cryptandrus*	Warm	Fall	Bunch	12-24"	Excellent
Alkali Sacaton* *Sporobolus airoides*	Warm	Fall	Bunch	12-24"	Excellent
Slender Wheatgrass *Elymus trachycaulus*	Cool	Fall	Bunch	12-24"	Moderate
Needle and Thread *Stipa comate*	Cool	Fall	Bunch	24-36"	Excellent
Indian Ricegrass *Stipa hymenoides*	Cool	Fall	Bunch	12-24"	Excellent

* indicates tolerance of saline and alkaline soil
Warm-Season Grass: Grows and stays green during the summer; dormant in winter.
Cool-Season Grass: Grows and stays green in the spring and fall; dormant in summer and winter.
Bunch: Grows in separate clumps.
Sod-forming: Spreads and grows together like a turfgrass (mowing may accelerate spreading).

Canyons and Plateaus Region: native flowers

Plant Name	Height	Color	Bloom Period	Other Comments
Butterfly Weed *Asclepias tuberosa*	36"	Orange	Summer	Attracts butterflies.
Prairie aster *Machaeranthera tanacetifolia*	18"	Purple	June to October	Attracts butterflies.
Western Sunflower *Helianthus anomalus*	72"	Yellow	Late summer	Provides bird seed in fall.
Four O'clock *Mirabilis multiflora*	24"	Brilliant purple	All summer	Stunning ornamental and favorite of hummingbirds.
Scarlet Globemallow *Sphaeralcea coccinea*	6-12"	Orange	April to September	Flowers resemble small hollyhocks.
Bee Balm *Monarda* species	24"	Purple	All summer	Attracts bees and butterflies.
White-tufted Evening Primrose *Oenothera caespitose*	8"	Whitish-pink	Early summer	Very drought-tolerant and tough; fragrant. Attracts moths.
Lupine *Lupinus* species	24"	Blue/lavender	Early to mid-summer	Attracts butterflies.
Rocky Mountain Beeplant *Cleome serrulata* and *C. lutea*	36"	Pink/purple	Spring to summer	Attracts bees.
Sulpher Buckwheat *Eriogonum umbellatum*	4-10"	Yellow	Summer	Flowers attract bees; seeds in fall and winter for birds. Forms matted ground cover.
Rocky Mountain Penstemon *Penstemon strictus*	24"	Blue-purple	Early summer	Hardy; easy to grow.

Datil yucca

Canyons and Plateaus Region: plants for areas near water

Plant Name	Height	Spread	Sun Exposure	Drought Tolerance	Deciduous / Evergreen	Wildlife and Ornamental Value
Trees						
Narrow leaf Cottonwood *Populus angustifolia*	40'	30-40'	Sun	Moderate	Deciduous	Soft wood for nest cavities Moderate-sized shade tree.
Thinleaf Alder *Ainus incana*	30'	15-20'	Shade in youth	Moderate	Deciduous	Seeds, cover and nests for birds; some mammals eat bark. Attractive "cones" in spring.
Shrubs						
Chokecherry *Prunus virginiana*	10-20'	15-20'	Sun	Moderate	Deciduous	Fruit and nesting cover for birds. Showy spring flowers, dark purple fruit, red-orange fall leaf color,
Blue Elderberry *Sambucus caerulea*	6-12'	5-8'	Sun	Poor	Deciduous	Excellent food plant for birds and small mammals. Showy white flowers and blue fruit.
Sandbar Willow *Salix exigua*	5-15'	10-15'	Sun	Poor	Deciduous	Dense cover for wildlife. Attractive branch color in winter.
Wood's Rose *Rosa woodsii*	2-6'	5'	Sun	Good	Deciduous	Year-round cover; winter food for birds and animals. Pink flowers in spring; ornamental red hips from fall into winter.

Canyons and Plateaus Region: low, dry sites

Plant Name	Height	Spread	Sun Exposure	Drought Tolerance	Deciduous / Evergreen	Wildlife and Ornamental Value
Trees						
Singleleaf Ash *Fraxinus anomalus*	20'	20'	Sun	Good	Deciduous	Seeds for birds and small mammals. Doubtful commercial availability; start from seed or cutting, it is an excellent tree.
Shrubs						
Sand Sage *Artemisia filifolia*	3-4'	4'	Sun	Excellent	Evergreen	Seeds and cover for birds. Lovely, feathery foliage.
Big Sage *Artemisia tridentata*	4'	4'	Sun	Excellent	Evergreen	Seeds and cover for deer, antelope, and birds. Subtle, yellow fall flowers.
Rubber Rabbitbrush *Chrysothamnus nauseosus*	2-6'	4'	Sun	Excellent	Evergreen	Seeds and cover for birds and small mammals. Showy yellow flowers in fall.
Winterfat* *Ceratoides lanata*	1-3'	3'	Sun	Excellent	Deciduous	Important winter food for birds, small mammals, and deer. Profuse whispy fruits in fall.
Four-wing Saltbush* *Atriplex canescens*	4-6'	4'	Sun	Excellent	Evergreen	Food and cover for quail, native sparrows, and small mammals. Rose-hued fruits on female plants.
Roundleaf Buffaloberry *Shepherdia rotundifolia*	3-4'	4'	Sun	Excellent	Evergreen	Fruit for quail, chipmunks. and squirrels. Silvery leaves; stunning shrub.
Purple Sage *Poliomintha incana*	3'	3'	Sun	Excellent	Deciduous	Nectar for bees and butterflies. Blue/purple flowers all summer.
Yucca *Yucca harrimaniae*	2-3'	2-3'	Sun	Excellent	Evergreen	Nectar for moths. Creamy flowers on tall stalks.

* indicates tolerance of alkaline soils

6 Growing native plants

Natives or ornamentals?

The plants listed on the previous pages are natives: plants that grow naturally in the region. Ornamentals, or exotics, are plants that are imported from another place. If you are making a plant selection and you find both a native and an exotic that fit the plan, consider these reasons for choosing the native plant:

First, native plants are naturally adapted to the soil, rainfall and sunlight of your region so they are apt to thrive once established and require less maintenance.

Second, native plants form the food base that wildlife species depend on. Their presence will attract wildlife species that don't normally come into residential areas.

Third, nonnative plant species often lack the natural controls that help keep their population in check. As they proliferate, they choke out the native plant species.

If you include nonnative, ornamental plants in your landscape, select them by keeping in mind the wildlife habitat needs outlined in Chapter 2.

Gardening with natives

Using native plants for beauty and habitat is fun, interesting and challenging to both novice and experienced gardeners. A good way to begin might be to devote a corner of the yard to experimentation with natives. As you discover the excitement of working with these new materials, you will also discover that your wildlife garden is enriched by their presence.

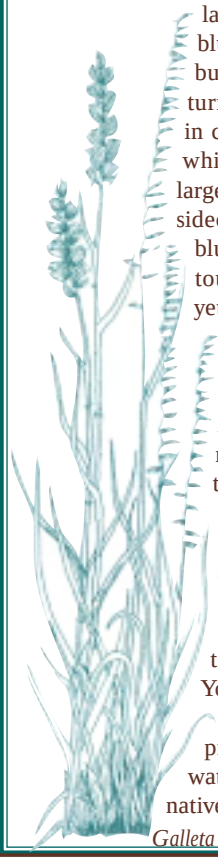
Nurseries are increasing their native plant offerings every year. If you purchase native plants or seeds, find out where they were collected and try to use only those that originated in your region. Consult the references at the back of this booklet for more information about native plants.

Native grasses

As described in Chapter 2, grasses are an important food base for wildlife. They form the basis of human sustenance as well—wheat, corn and rice are all grasses. In an equally essential role, grasses protect soil from wind and water erosion.

Best of all, grasses are beautiful. The native grasses of Utah have unique textures, forms and colors that are enhanced in the movement of a breeze and made more brilliant by the illumination of the sun.

In addition to beauty, the qualities that grasses bring to residential landscapes are sturdiness and adaptability to arid conditions. We can find a native grass species to suit almost any soil type and landscaping objective. Some, such as blue grama, creeping red fescue and buffalograss can be grown as a lawn turf. Wheat grasses have proven value in controlling erosion on steep slopes, while others provide excellent food for large mammals. Many, including sideoats grama, Indian ricegrass, and blue fescue, are durable in the toughest landscaping situations and yet can also be planted to provide ornamental accents in garden borders.



Galleta and sideoats grama grasses.

If your landscaping goals include minimizing the maintenance time and water devoted to the bluegrass in your yard, try a patch of native grass. The steps for seeding and establishment are similar to bluegrass lawns, but the difference is that after about three months the native grass will need to be watered only occasionally. Your nursery or seed supplier will provide full instructions for soil preparation, seeding, mulching, watering, weeding and mowing a native grass lawn or meadow.

A different approach to maintenance

Natural landscapes are dynamic; they are always changing. This active quality contributes to the diversity of a landscape and its value to wildlife. By contrast, our manicured yards are static, and most of our maintenance techniques are aimed at keeping things the same. Moreover, our raking, pruning, mowing and clipping removes nutrients and energy from the landscape.

A fruitful approach is to let your yard be dynamic. Let it change, and open the doors to diversity. This approach can be exuberant or modest. One moderate example could be to design a back yard with mown and irrigated bluegrass turf near the house, mown native grass beyond it, and a patch of unmown native grass that links the turf areas with other habitat plantings.

Or, more simply, when leaves or grass clippings are raked from some areas, rather than going to the landfill, they can be placed elsewhere in the yard to replenish soil nutrients and provide habitat for ground-loving creatures. When native plants reseed and "volunteers" appear in your yard, encourage diversity by letting some of them remain, or transplant some to other locations in the yard.

Try not to prune excessively. Pruning removes wildlife food and cover. In some areas of the yard, encourage varietyand diversity in the structure of plants by letting dead branches remain on shrubs or small trees.

Make an effort to minimize and eventually eliminate the use of chemical pesticides. Their killing is not limited to the insects you want to get rid of. Several effective biological controls for ornamental and vegetable garden use are available, and four of these are listed on page 29.

Some native grasses can be left unmown; this can increase the habitat potential of your yard to include spring nesting areas and a fall seed supply.

Mind the Soil...

Soil is the foundation of life. Well-nourished soil produces healthy plants, which are the best attractors of wildlife and also more resistant to insect pests. Soil is a resource as valuable as water and plants, and it will work even more for us if we help protect and conserve it by preventing erosion and by replenishing nutrients.

If you have slopes or large bare surface areas on your property, stabilize them with vegetation to hold and protect the soil. Consult a local Soil Conservation Service office or the County Agricultural Extension agent for specific recommendations.

An ideal way to improve soil is to use mulch. Mulch is any material that covers soil and the most common mulches include dead leaves, grass clippings, pine needles, shredded bark and compost. Mulch returns nutrients to the soil and also improves soil texture. It helps control erosion by protecting the soil and it conserves water by preserving soil moisture beneath it.

How does healthy soil produce healthy wildlife plants? In addition to providing physical support for plants, soil supplies oxygen, water and nutrients. The ideal soil texture allows water to penetrate and drain, yet retains enough moisture, nutrients and oxygen in the spaces between soil particles for plant growth.

The tiny particles characteristic of clay soils stick together. Pore spaces between the particles are very small, making air and water penetration difficult. Sandy soils have the opposite condition. Particle sizes and pore spaces are large, causing water and nutrients to drain through rapidly before being taken up by the plants. If soil in your yard is too clayey or too sandy, you must take care to choose plants that will grow in that condition.

A key aspect of success in wildlife gardening is to identify and nourish the natural resources that abound in and around your yard.

Planting for Energy Conservation

Since the majority of household energy use goes to heating and cooling, a landscaping priority is to protect the house from direct sun and freezing winds. Along with the native trees listed on pages 10-17 , the following ornamentals may help moderate house temperatures while providing food and cover value for wildlife in your yard:

English Oak
Crabapple, Apple
Pine species
Common Hackberry
Alder species
Washington Hawthorn
Green Ash
Russian Mulberry
Eastern Red cedar

Getting Along with the Climate

The majority of Utahns live in areas that receive between 6 and 16 inches of rainfall each year. We design our landscapes, however, in the style of those in areas that receive over 30 inches per year. In the Intermountain West, 30-50 percent of the water used in the home is for outdoor landscaping. Not only does this cost us a lot, but we are drawing water away from natural streams and habitats in order to keep our yards in an artificially lush condition.

Try to creatively adapt your landscape to our arid environment. In addition to having a new, more interesting look, this can provide significant savings on utility bills. Conserving water and energy in landscape planning takes wildlife habitat conservation beyond the back yard by helping to preserve resources in Utah's natural areas. Here are some tips for conserving water in your yard:

Setting water use areas: Low-water landscaping does not have to mean no-water landscaping. An efficient way to use water and also to enhance the appearance and comfort of outdoor living areas is to organize the yard into different zones. A high-use zone nearest the home is planted with plants that require the most water. This concentrates the irrigation in a smaller area, and also helps cool the house and outdoor living areas.

Moving outward from the house, the next zone would be ground covers, native grasses, shrubs and trees that require less water. These would need some irrigation during hot, dry periods, but not as much as those nearest the house.

The third zone, furthest from the house, would contain plants that require irrigation only to supplement rainfall. This area would be ideal for native plants.

Irrigating: A conversion from conventional to drip irrigation can reduce water consumption by 20-60 percent. With drip irrigation, water is directed straight to the plants and is not lost to the dry air, the wind, or sidewalks and storm drains.

Existing irrigation systems can be re-fitted with low-output heads. These allow you to match water output to the soil type and plant requirements, resulting in less run-off and waste. A soil sensor can also be added to the irrigation system. When soil moisture drops below a specified level, it starts the irrigation system. Devices installed at the spigot can be set to turn the water off after a specified time period or number of gallons.

Limiting turf: Substantial water and energy savings can be achieved by limiting bluegrass turf to only the high use areas of a yard. It is not wise to replace lawn with rocks, gravel, or bare soil, because this can drastically increase temperatures in and around the house. Instead, add vegetable, herb and flower gardens, trees, shrubs, decks, shaded patios or shaded sandboxes for childrens' play.

Rainwater harvesting: Take advantage of the features in your yard to direct rainwater or sprinkler run-off to planted areas. The ground can be contoured to direct the water to small basins dug around tree and shrub plantings.

Mulching: Mulching can also contribute to water conservation by preserving soil moisture and helping to keep soil cool.

Organize your yard into water use zones.

7 Birds

The most effective way to attract and support birds is to create a landscape with plants that provide the natural foods and cover they need.

Feeding

Supplementary feeding also attracts birds and is very popular in Utah. The leaflet Feeding Utah's Birds, available from the Division of Wildlife Resources, has details about bird feeding.

Sunflower seeds, white proso millet, and niger seeds are favored by seed-eating birds. These can be provided in a variety of feeder styles and should be available at different heights to accommodate foraging preferences of different bird species. Provide vegetation near feeders.

Water

Water, in any way that it is furnished, will be used by birds and all wildlife, and a water feature can be the focus of a backyard wildlife garden. Water can be provided in a simple ceramic saucer, an upturned hubcap, or a garbage can lid. Whatever the container, it is most useful to wildlife if it has gently sloping sides. A more elaborate pool with recirculating water opens possibilities for aquatic plants, fish and amphibians, and moving or dripping water really attracts birds.

Enhance the attractiveness and the usefulness of the water you provide by locating it near protective cover, supplying branches and rocks for perching, and using an immersible heater to keep water open during the winter. A water depth of ½ to 2 inches is just right. If cats live in your area, consider an elevated birdbath to provide more security to the birds.

Nest Boxes

As you can see on the table below, each species has its own needs and selects nesting cavities of particular dimensions for protection from weather, competitors and predators. In constructing nest boxes, it is important to use the suggested dimensions and hanging heights to ensure successful use by the birds for which the boxes are intended. The more natural the design and material of boxes, the more likely birds are to use them. Books that illustrate nest box plans in greater detail are listed in the reference section at the back of this booklet.

Species	Black-capped and Mountain Chickadees, Juniper Titmouse	Mountain and Western Bluebirds	Western Screech Owl, American Kestrel swallows, wrens	Northern Flicker
Floor of cavity	4 X 5-½"	5 X 5"	7-¾ X 9-¼"	7 X 7"
Depth of cavity	8"	9-10"	14-16"	18"
Height of entrance above floor	6"	6"	11-12"	14"
Diameter of entrance	1-⅛"	1-½"	3"	2-½"
Height above ground	5-15'	5-15'	10-30'	8-20'
Other notes	Mountain Chickadee nests at high elevations, Juniper Titmouse in pinyon pine and juniper stands.	Bluebirds nest in high valleys.	Monitor to exclude starlings.	Fill bottom with 3-4" sawdust. Box may help to distract from house sidings.

International Travelers

Many of the most colorful and melodious songbirds that visit our yards in the summer spend the winter in tropical forests and other habitats as far south as Central and South America. Warblers, vireos, flycatchers, buntings, tanagers, grosbeaks, thrushes, orioles and swallows migrate between these southern wintering grounds and northern nesting locations like Utah.

These birds are insect eaters. They search for insects on leaves and branches of plants. Habitats with clumps and layers of leafy vegetation supply the food and cover they need. Areas of dense vegetation such as willows and cottonwoods along streams, canals and rivers are especially important to them.

Yards landscaped with leafy shrubs and trees are valuable to these songbirds, too. They can be attracted to yards during spring and fall migrations and throughout the summer nesting season. To host migrant songbirds in your yard, plant shrubs and trees to create layers and large clumps of foliage. Avoid using insecticides. These songbirds depend on the availability of insects, and they can help control the balance of insect populations in your yard.

Hummingbirds

Hummingbirds are marvels of aerodynamics—with awesome flying capabilities that match their brilliant colors and fearless personalities. They can fly forward, backward, up and down, and can hover in place. They fly at speeds of 30-40 miles per hour, with wings beating from 40 to 200 times per second.

Hummingbirds eat half their weight each day in insects and nectar, and cross pollinate scores of flowers in the process. They bring delight to us not only by their miraculous presence, but also by the role they play in perpetuating wildflower.

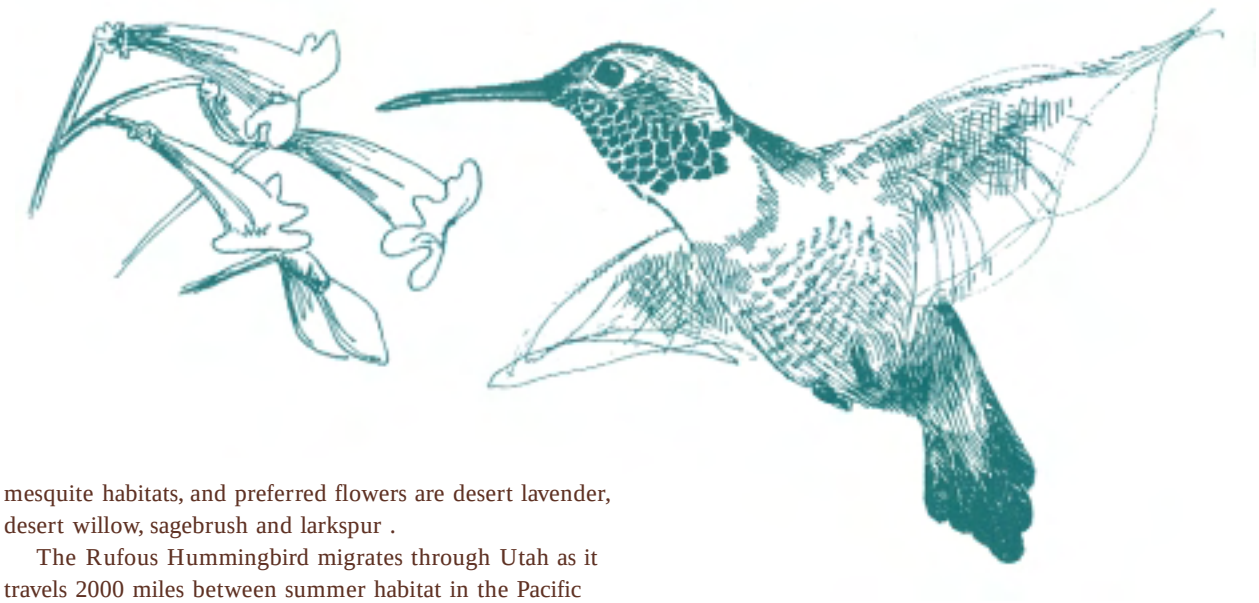
Five hummingbird species grace Utah in the summer. The description below will help you look for, recognize, and attract them to your yard. Females are difficult to distinguish, even for the experts, so only the males are described:

The Broad-tailed Hummingbird resides throughout Utah in the summer and is commonly seen in suburban areas. The male is bright green, with a solid red throat, but more distinct than its appearance is the shrill whistle made by the wings of the male in flight. Native habitats include mountain forests as well as pinyon-juniper foothills, but it is common in urbanized areas on valley floors. The female builds and camouflages her nest with lichen, leaves and pieces of bark. Broad-tailed Hummingbirds eat insects and spiders and also visit the flowers of penstemon, larkspur, agave, gilia, gooseberry and willow.

The Black-chinned Hummingbird is detected by the purple stripe beneath its namesake black chin. Also common summer residents statewide, these birds frequent the flowers of agave, viburnum, nasturtium, honeysuckle, catmint, myrtle, garden balsam and iris.

Calliope Hummingbirds spend their breeding season, the summer, in Utah; yet they live at high elevations. They are bronze-green, with distinguishing purple-red streaks on their throats. The female builds her nest to resemble a cluster of cones in an evergreen tree. Favored flowers include gooseberry, manzanita, Indian paintbrush, penstemon and red columbine.

Costa's Hummingbird lives only in southwest Utah. The head and throat are a noteworthy purple and these feathers extend in windswept fashion back from the sides of the head. Costa's frequent sagebrush, yucca, Joshua tree and mesquite habitats, and preferred flowers are desert lavender, desert willow, sagebrush and larkspur .



The Rufous Hummingbird migrates through Utah as it travels 2000 miles between summer habitat in the Pacific Northwest and winter habitat in southern Mexico. It is commonly seen in this state from mid July through September. The orange-red coloration and iridescent orange throat of the male make it easy to identify. Its range extends from suburban gardens to meadows above timberline; and nectar flowers include gooseberry , manzanita, mint, columbine, penstemon, larkspur, fireweed, and Indian paintbrush.

Planting the flowers listed here and on pages 10-17 may help you lure hummingbirds to your yard. Nonnative plants that attract hummingbirds include:

Flowers:

- Allysum
- Tiger lily,
- Bee balm
- Delphinium
- Salvia Trees:
- Scarlet lobelia

Shrubs:

- Butterfly bush
- Siberian peashrub
- Weigelia

Vines

- Trumpet vine
- Honeysuckle:

Trees

- Horsechestnut
- Locust
- Catalpa
- Desert Willow

Feeding Hummingbirds

Providing supplementary food in sugar-water feeders is also a fun way to attract hummingbirds. Feeders can be hung where they provide exciting viewing opportunities. Follow the feeding steps to assure that the sugar-water solution is safe for the hummingbirds:

1. Mix a feeding solution of four parts water to one part sugar by bringing water to a full boil and dissolving sugar in it. Cool and keep unused solution refrigerated.
2. Do not add red coloring to the solution. Red on the feeder will attract the birds. Change the solution at least every three days.
3. Clean the feeder frequently and thoroughly to prevent bacterial and fungal growth. Do not use honey instead of sugar, as it may harbor a fungus that is lethal to hummingbirds.
4. Plastic bee guards are available for many feeders and help discourage bees and wasps at feeders. Do not use insect sprays.

Birds to Watch for

This table outlines the kinds of foods and cover that some of the common birds in Utah find attractive. Use this information to help select plants from the lists in Chapter 6 to include in your yard.

REGIONS
M Mountains and Valleys
G Great Basin
C Canyons and Plateaus
S Southwest Desert

Species	Regions	Food	Cover
QUAIL			
California	M, G, C	Primarily seeds, some other plant parts and a few insects.	Patches of dense cover. California Quail like low to medium height deciduous and evergreen shrubs and trees. Gambel's in SW Desert like mesquite and other dense, thorny plants.
Gambel's	S, C		
DOVES			
Mourning	M,G,C,S	Seeds, some nuts, berries, and fruits.	Scattered trees in open habitats. White-winged Doves only in SW Desert with mesquite thickets, and trees near water or houses offer cover.
White-winged	S		
ROADRUNNER			
Greater Roadrunner	S (C)	Insects, reptiles and small mammals.	Open desert with scattered shrubs and cacti.
WOODPECKERS			
Downy	M, G, C, S	Primarily insects and other invertebrates excavated or gleaned from trees. Some acorns, nuts, berries and fruit. Flicker often forages on ground, eating ants. Sapsuckers also consume tree sap, creating sap wells for hummingbirds and bees.	Mixed deciduous and coniferous trees. Dead and decaying trees and branches important. Excavate cavities to roost and nest in. Other species subsequently use cavities. Ladder-backed only in SW Desert. Woodpeckers will tap trees and other surfaces for territorial and courtship communication.
Hairy	M, G, C, S		
No. flicker	M, G, C, S		
Lewis'	M, (G), C S		
Ladder-backed	S		
Red-naped Sapsucker	M, G, C, S		
FLYCATCHERS			
Western Woodpewee	All	Insects and occasionally fruit. Watch for flying insects from perches on limbs, buildings and utility wires to chase and catch in midair. Some species build nests on eaves or ledges.	Deciduous and coniferous trees for perching and nesting. Pewee and Cordilleran at higher elevations. Phoebes and kingbirds in open yards and fields with scattered perches. Black Phoebe in southern Utah only.
Cordilleran Flycatcher	All		
Black Phoebe	S (se)		
Say's Phoebe	All		
Western Kingbird	All		
LARK ,			
Horned	All	Seeds from grasses and forbs, insects.	Open, grassy habitats.

Species	Regions	Food	Cover
SWALLOWS			
Tree	All	Many mosquitos and other insects caught in air while flying. A few berries may be eaten by tree swallows.	Tree and Violet-green Swallows are cavity nesters at higher elevations. Barn and Cliff Swallows feed in yards and fields, often build nests on eaves and walls of buildings.
Violet-green	All		
Cliff	All		
Barn	All		
NIGHTHAWKS			
Common	All	Insects caught in air while flying. Often seen and heard at dusk flying near lights that attract insects.	Nest on ground and bare surfaces, sometimes on flat gravel rooftops of buildings.
Lesser	S		
JAYS			
Steller's	All	A wide variety of foods: nuts, acorns, coniferous seeds, berries, insects, small mammals and reptiles. Pinyon Jays eat many pinyon pine nuts.	Yards with trees. Steller's Jays in coniferous trees at higher elevations. Scrub Jays prefer oaks mixed with other trees. Pinyon Jays like pinyon pines and juniper trees.
Scrub	All		
Pinyon	All		
Black-billed Magpie	All		
CHICKADEES AND TITMOUSE			
Black-capped	All	Insects gleaned from bark and leaves of trees and shrubs. Seeds, especially from conifers, some fruit. Sunflower seeds and suet at feeders.	Mature deciduous and coniferous trees. Mountain Chickadee at high elevations, may migrate to foothills and valleys in winter. Titmouse in pinyon pines and juniper trees.
Mountain	All		
Juniper Titmouse	All		
VERDIN			
Verdin	S	Insects gleaned from plants, some seeds and fruit.	In southwest desert, where cacti, mesquite and creosote bushes occur.
BUSHTIT			
Bushtit	All	Insects, some seed and fruit.	Traveling flocks may visit yards with pinyon pines, junipers, oaks and mixed shrubs.
NUTHATCHES AND CREEPER			
White-breasted Nuthatch	All	Insects gleaned from foliage, branches and bark. Seeds and nuts from pines and other conifers. Brown creeper forages for insects along trunks of trees.	Coniferous and deciduous. , Pygmy Nuthatch in ponderosa pines. Nuthatches nest in natural cavities of decaying trees and often in deserted woodpecker holes. Creepers nest behind loose bark of decaying trees.
Red-breasted Nuthatch	All		
Pygmy Nuthatch	C, M, S		
Brown Creeper	All		
WRENS			
Cactus	S	Insects and other small invertebrates gleaned from plants. Some seeds, berries and fruit.	Cactus Wren in yards with cacti, joshua trees and other desert plants of SW Utah. House Wren typically nest in aspen and cottonwood trees. Cavity nester.
House	All		

Species	Regions	Food	Cover
KINGLETS			
Ruby-crowned	All	Tiny insects gleaned from leaves on trees. Also berries, fruit and sap.	Prefer yards with mixture of mature deciduous and coniferous trees. Golden-crowned most often in coniferous trees.
Golden-crowned	All		
GNATCATCHER			
Blue-gray	All	Insects found in foliage of trees and shrubs.	Gambel's oak, pinyon pines and junipers.
BLUEBIRDS			
Mountain	All	Primarily insects. Berries and fruit also, especially in winter.	Forage in grassy or open-wooded habitat. Both depend on availability of cavities in trees for nesting, Mountain Bluebird in aspen and Western Bluebird in ponderosa and pinyon pine.
Western	C, S		
THRUSHES			
American Robin	All	Insects, earthworms, berries, and many other fruits.	Robins often forage on open lawns with scattered trees and berry bushes. Townsend's Solitaires' often move from higher summer grounds to lower habitat of mixed plants in winter, eating berries and fruit.
Townsend's Solitaire	All		
THRASHERS			
Northern Mockingbird	All, esp S, C	Insects and other small invertebrates. Berries and fruit.	In Utah, the Mockingbird and Sage Thrasher prefer partly open habitat with sagebrush and other low shrubs. The Crissal' Thrasher occurs only in southwestern yards with desert shrubs.
Sage	All		
Crissal'	S		
WAXWINGS			
Cedar	All	Travel in foraging flocks, feed on berries and other fruits.	Visit yards with deciduous and coniferous trees, junipers, hawthorns, dogwoods and ornamentals.
Bohemian	All		
PHAINOPEPLA			
Phainopepla	S (C)	Berries and insects. Mistletoe berries on desert shrubs are favorite.	In southern Utah where desert plants and and deciduous trees along streams are present.
VIREOS			
Warbling	All	Mostly insects, a few berries and other fruit during migration.	Yards with a variety of layers of deciduous and coniferous plants. Grey Vireo in pinyon pines, junipers and oaks.
Plumbeous	All		
Gray	S, C		
WARBLERS			
Orange-crowned	All	Important consumers of insects. Glean leaves, branches and trunks of shrubs and trees for tiny insects. A few eat some fruit, nectar and sap.	Visit yards with rich diversity of shrubs and trees during migration. Orange-crowned and Virginia's nest on the ground, in oak and other shrubby habitats. Yellow Warbler commonly nests in deciduous trees in yards,Black-throated Gray Warbler nests in gray juniper and pinyon pines, Grace's in ponderosa pines and Lucy's in shrubs and trees of SW Desert region.
Virginia's	All		
Yellow	All		
Black-throated	All		
Yellow-rumped	All		
MacGillivray's	All		
Grace's	S, C		
Lucy's	S, C		

Species	Regions	Food	Cover
TANAGER			
Western	All	Insects and fruit.	Attracted to yards with trees. During breeding, favor coniferous trees at higher elevations.
GROSBEAK AND BUNTING			
Black-headed Grosbeak	All	Glean leaves and twigs for insects. Consume seeds and fruits also.	In yards with dense clumps of deciduous shrubs and trees.
Lazuli Bunting	All		
TOWHEES			
Green-tailed	All	Insects, seeds of grasses and forbs, acorns, berries. Forage low in shrubs or on the ground.	Most often in dense, low vegetation like clumps of oaks and shrubs. Abert's Towhee in SW Desert only, often in shrubs near water.
Spotted	All		
Abert's	SW		
SPARROWS AND JUNCO			
White-crowned Sparrow	All	Insects, seeds and berries; and coniferous	Visit yards with mixture of deciduous shrubs and trees. White-crowned Sparrow and Dark-eyed Junco common visitors to bird feeders in winter. Song Sparrow in shrubs near water.
Dark-eyed Junco	All		
Song Sparrow	All		
SPARROWS AND MEADOWLARK			
Lark Sparrow	All	Insects and seeds of native grasses and forbs.	May be attracted to open yards with grasses and sagebrush.
Vesper Sparrow	All		
Brewer's Sparrow	All		
Western Meadowlark	All		
ORIOLES			
Bullock's	All	Insects from leaves, fruit and nectar. Sometimes will eat fruit at feeders.	Large deciduous trees. Bullock's Oriole common in yards and parks with large trees. All like cottonwoods. Frequently in trees along streams and rivers. Scott's Oriole sometimes attracted to junipers and desert plants. All build intricately-woven nests of plant fibers, fine grasses, and animal hairs suspended from branches.
Scott's	S, C, G		
Hooded	S		
FINCHES			
House	All	Seeds from grasses, forbs, coniferous and deciduous trees. Robust bills enable these birds to break coats and shells of seeds. Also eat buds . of trees, berries, sap and insects.	Attracted by a mixture of deciduous and coniferous trees. Finches are common visitors to feeders in winter. The goldfinches are fond of seeds of composite flowers and catkin-producing trees.
Cassin's	All		
Pine Siskin	All		
American Goldfinch	All		
Lesser Goldfinch	S		
Evening Grosbeak	All		

8 Butterflies, moths and bees

A world of beauty and amazement will unfold for you when you plan your wildlife garden to attract butterflies. Besides being delightful to watch, butterflies pollinate plants and their presence indicates a non-toxic, healthy environment.

To provide habitat for butterflies it helps to be familiar with both the food plant requirements of larvae (caterpillars) and the nectar preferences of the adult butterflies. It is on the larva1 or food plants that eggs hatch, caterpillars feed, and most often, that chrysalises are produced. The adult butterfly that emerges from the chrysalis needs nectar; often that requirement is specific to the nectar of only one or two flower species.

Butterflies are most often found in sunny, meadow-like areas that are sheltered from the wind. The descriptions on these pages will help you identify the butterflies that occur in your region and plant a garden that supplies their food and nectar requirements.

Nectar sources should be planned to maintain a continuous supply through the growing season by selecting early blooming plants (lilac), summer bloomers (coneflower, yarrow, butterfly bush); and those that carry flowers into late fall (zinnia, aster, goldenrod). Many of the native flowers listed on pages 10-17 will attract butterflies.

The plants below are also attractive to butterflies.

Trees:

New Mexico locust, black locust, alder

Shrubs:

indigo bush, butterfly bush, honeysuckle, mock orange, lilac, privet, sumac, viburnum

Flowers:

phlox, zinnia, aster, marigold, sweet william, coneflower, black-eyed Susan, larkspur, dandelion, thistle, morning glory, coreopsis, daisy, milkweed, purple ageratum, goldenrod

Herbs:

mint, lavender, dill, lemon balm, anise, hyssop, parsley, thyme, sage and catnip

Butterflies common to Utah, and their food and nectar preferences

Key: ❖ food plants
❁ nectar plants
❇ habitat

SATYRIDAE: Satryrs and Wood Nymphs
Great Basin Wood Nymph

❖ grasses
❁ alfalfa, purple cornflower, mint, spiraea, sunflower, penstemon, virgins bower
❇ Inhabit moist canyons in arid areas; sagelands, oak dominated canyons, pinyon juniper woodlands.

DANAIDAE: Milkweed Butterflies
Monarch Queen

❖ milkweed species
❁ milkweed, butterfly bush, goldenrod, cosmos, mallow, mint, daisy
❇ During migration, anywhere. Otherwise, places with milkweed, especially fields and watercourses. Monarch butterflies retain the chemicals from milkweeds they eat in the larval state, and this makes them unpalatable to birds. Queen butterflies are common in Washington County.

Butterflies cannot drink from open water. The best way to provide their water is to fill a container with sand and keep it saturated with water.

NYMPHAUDAE: Brush footed Butterflies
LIMENITIDINAE: Admirals
Viceroy
Weidemeyer's Admiral

❖ willow, aspen, cottonwood, apples, cherry, plum
❁ poplars, willows, serviceberry, fruit trees
❇ Vegetation along watercourses, meadows. The viceroy butterfly escapes predation by mimicking the monarch butterfly, which is distasteful to birds.

NYMPHAUNAE: Tortoiseshells, Anglewings, and Ladies ,
Mourning Cloak
Milbert's Tortoise Shell
Polygonia species
Red Admiral
Painted Lady

❖ willow, poplar, elm, hackberry , thistle, nettle, mallow, hollyhock
❁ Butterfly bush, milkweed, daisy, mallow, zinnia, cosmos, rabbitbrush
❇ Common in many life Zones and habitats, especially watercourses and meadows.

ARGYNNINAE: Fritillaries
Fritillary species

❖ violet species
❁ thistle, purple cornflower, red clover, milkweed, verbena
❇ Common in many habitats. It is very difficult to distinguish between the different fritillary butterflies.

PAPILIONIDAE: Swallowtails and Parnassians
PAPILIONINAE: Swallowtails
Pale Tiger Swallowtail
Western Tiger Swallowtail
Two-tailed Tiger Swallowtail
Anise SwallowtaIl

❖ buckthorn, ceanothus, alder, chokecherry , service berry, fennel, carrots

❁ mint, thistle, penstemon, mint, zinnia, butterfly bush, lilac, phlox
❄ Found in canyons with permanent water, along creeks, and in gardens.

PIERIDAE: Whites and Sulphers
PIERINAE: Whites
Cabbage White

❖ cabbage, broccoli, cauliflower, nasturtium
❁ mustard, dandelion, fister, mint, milkweed, pontentilla
❄ Common in domestic gardens, cities, foothills, agricultural fields. Introduced from Quebec in 1860.

LYCAENIDAE: Gossamer Winged Butterflies
THECLINAE: Hairstreaks
Gray Hairstreak

❖ clover, mallow, vetch, mint, strawberry , hawthorn, oak
❁ milkweed, white sweet clover, goldenrod, yellow bee plant, mint, bitterbrush
❄ Weedy areas, lowland and river basins, foothills, old fields, parks, meadows.

POLYOMMATINAE: Blues
Common Blue
Boisduval's Blue

❖ lupine species
❁ lupine species and milkweed
❄ Common in mountains, valleys, meadows, streams., sagebrush regions; always near lupines.

HESPERIIDAE: True Skippers
PYRGINAE: Dusky-wings, Checkered Skippers,
Common Checkered Skipper
Silver Spotted Skipper

❖ mallow, hollyhock, New Mexico locust, wisteria, beans, licorice
❁ aster, red clover, honeysuckle, thistle, zinnia, milkweed, iris, privet
❄ Common along roads and streams and in fields, meadows, gardens, and parks.

The monarch butterfly is dependent on milkweed throughout its entire life cycle: from egg to larva, chrysalis to adult.

Moths

There are at least ten times more moth species than butterfly species worldwide. However, the moths are not as familiar to us because most of them are nocturnal. Like their close relatives, the butterflies, moths are essential because they pollinate plants. The sphinx; or hummingbird moth, can often be seen at dusk hovering over four O' clock blossoms in a manner that may fool you into thinking it is a hummingbird. Other moths common to Utah, and their active periods are:

White Tiger Moth .....Day
White-line Sphynx .....Day
Glover's Silk Moth .....Night
Polypheinus Moth .....Night
Underwing Moth .....Night and Day
Yucca Moth .....Night and Day

If you include some of the plants listed below in your wildlife garden, be sure to go "moth-watching" with a flashlight on summer evenings!

Flowers that attract moths:

Sweet william *Dianthus barbatus*
Evening primrose *Oenothera* species*
Petunia *Petunia* species I
Sweet mock orange *Philadelphus* species*
Phlox *Phlox* species*
Iris *Iris* species
Yucca *Yucca baccata* and *Yucca elata**
Toadflax *Linaria maroccana*
Lilac *Syringa* species
Four O' clock *Mirabilis* species*

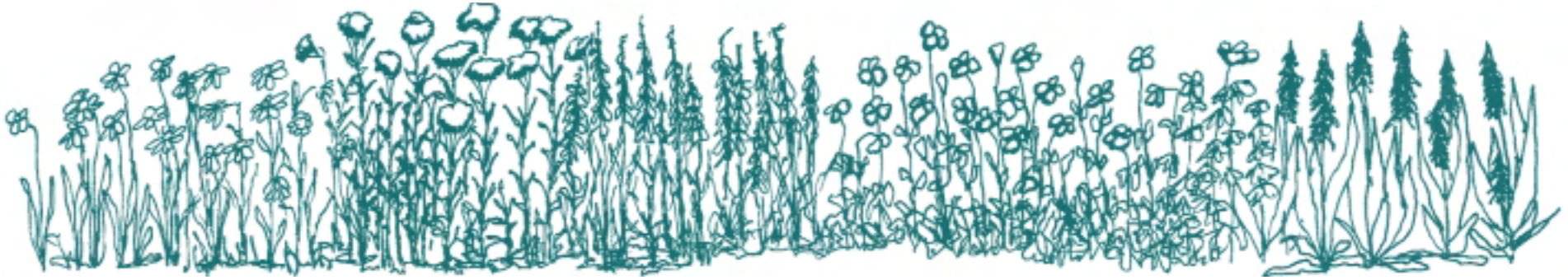
*native to Utah

Bees

The importance of bees as plant pollinators is well-understood, but are you aware that at least 800 different native bee species exist in Utah? The following Utah native plants produce abundant nectar for these beneficial insects.

Plants that attract bees:

Honeysuckle *Lonicera* species
Penstemon *Penstemon* species
Clovers *Trifolium* species
Chokecherry *Prunus virginiana*
Western sand cherry *Prunus besseyi*
Silver Buffaloberry *Shepherdia argentea*
Cliffrose *Cowania mexicana*
Bitterbrush *Purshia tridentata*
Woods rose *Rosa woodsii*
Shrubby cinquefoil *Potentilla fruticosa*
New Mexico privet *Forestiera neomexicana*
Mesquite Prosopis *glandulosa torreyana*
Creosotebush *Larrea tridentata*
Buckwheat *Erigonum* species
Beebalm *Monardia* species
Fernbush *Chamaebatiaria millefolium*



9 Mammals

Big brown bat

Otter, moose, mice, fox, prairie dog, vole, kangaroo rat, chipmunk, jackrabbit, bison, shrew, and squirrel are among the more than 120 different mammal species that live in Utah. Did you know that flying squirrels are inhabitants of Utah? They can be found in large cottonwood trees near rivers and streams. The native mammals that may be seen near homes are mainly chipmunks, squirrels, skunks, prairie dogs, rabbits, and deer. We may not be familiar with many

of the mammals because they are secretive and small, are active only at night, and also because they hibernate for part of the year.

If you have a larger property—an acre or more—brush piles can provide habitat structure for cottontail rabbits, squirrels or chipmunks. Plantings of native shrubs such as sagebrush and rabbitbrush, native grasses, and nut- or acorn-producing trees will enhance food and cover offerings for these mammals.

Bats

Bats, the only mammals that are capable of true flight, are among the most beneficial creatures to humans. Bats are the major predators of night-flying insects, and one bat can consume up to 500 insects in a single night. Fruit-eating bats pollinate-plants and also disperse plant seeds. Plants that are dependent on bats for these functions include saguaro cacti, bananas, mangos, avocados, dates, figs, peaches, cashews, carob, and cloves.

Although 18 bat species are found in Utah, only 3 occur in urban areas: the Little Brown, the Big Brown, and the Brazilian Free-tailed Bats. All Utah bats are insectivorous; the three mentioned above consume predominantly beetles, mosquitos, moths and midges that they catch in flight.

Bats' "wings" consist of two thin layers of skin that are supported by the bones of arms, hands, and fingers. The bones move individually to enable hovers, dives, and turns in flight. Specialized muscles help the skin to contract in thousands of miniature folds when the animal is at rest. Bats feed at night, and they navigate in the dark by means of echo location. They emit sounds from their larynx which strike objects and returns as echos. Interpretation of the echos determines location, size, and movement of objects. The study of this navigational system has led to inventions and aids for humans with vision and speech impairments.

During the day, and for some species, during the winter months, bats retreat to dark, sheltered areas. During hibernation, heart rate and body temperature are lowered and the animals live on stored food energy. Disturbing hibernating bats causes them to expend the energy of stored fat reserves, and this could cause them to die of starvation before spring.

Use of insecticides, degradation of habitat, and disturbance of winter hibernation caves have seriously reduced populations of the 40 bat species in the U.S. Recent public awareness efforts across the country are encouraging homeowners to build special houses that provide roosting sites for bats.

When flying and maneuvering, bats are chasing insects; not humans. Like all mammals, they are susceptible to rabies; however, between the years 1951 and 1984, only 10 people in the U.S. and Canada have died of rabies contracted from bats. When humans are exposed to rabies from bats it is almost always because they picked up a downed bat with their bare hands. This is a violation of a basic and critical safety rule: never touch a sick or injured animal with your hands. Rabies is a serious disease, but the odds of contracting it from a bat should be put in perspective. Dog bites and lightning strikes are dangers that have a higher probability of occurrence than contracting rabies from a bat.

Preventing Problems With Bats

As winter hibernation and daytime roosting sites are depleted, bats have been known to seek shelter in human habitations. Any structure with openings, cracks, or loose joints in the roof is a prime target.

The best time for bat-proofing a building is in the fall, after young have been raised. First, identify any openings. Look under overhangs where wood may have warped and find any loose-fitting vents or cracks where structural or roofing elements join. Cover all major entry holes greater than 3/8", except for the one or two major ones. When you are positive that they have left the area; cover the remaining holes. Remove any accumulated guano, because it could attract bats in the future.

The references at the back of this booklet provide more interesting facts about bats and plans for building bat houses.

10 Reptiles and amphibians

We often think of reptiles and amphibians as "scary," "slithery," or "creepy." But have you ever heard frogs and toads making their presence known in the spring night? Have you watched a snake move across the sand, and wondered how that movement is possible? Have you taken a close look at the way the scales of a lizard reflect light, or noticed the interesting shape of a gecko's feet?

Reptiles and amphibians are fascinating. Moreover, they perform duties for us that we should appreciate—they prey on insects and rodents. Since reptiles and amphibians are cold-blooded, their body temperature adjusts to the surrounding environment, rather than by their own internal metabolic rate. For this reason, they are inactive much of the time, usually hidden, seeking a comfortable temperature.

Reptiles

Turtles, lizards, and snakes live out their lives on the land and are classified as reptiles. They are covered with scales or plates that reflect sunlight and heat.

The twist of geography that places a sliver of the Mojave Desert in Utah enables us to claim the desert tortoise as our only native turtle. The desert tortoise should not be considered a potential backyard wildlife species. In fact , it has suffered because of contact with humans, and it has been federally listed as a threatened species. People who touch or pick up tortoises, let dogs roam, or ride off-road vehicles in tortoise habitat areas contribute to the decline of this reptile.

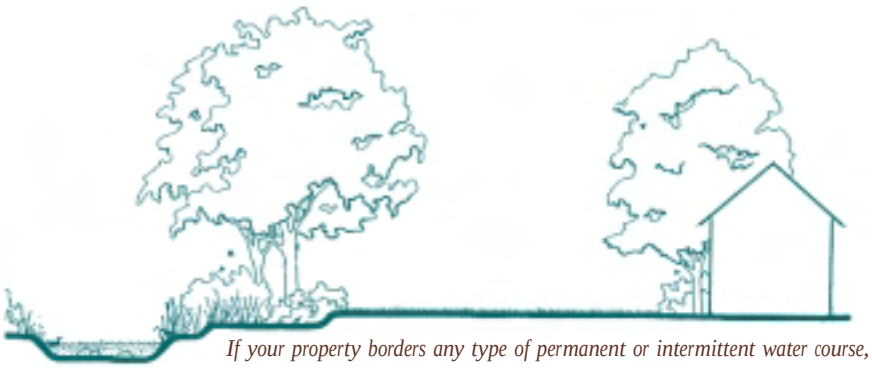
There are 32 lizards known to inhabit Utah. Probably the best known is the harmless short-horned lizard (mistakenly called the "horned toad"), which has spikes that mark the head, a body with ridges, and an underside s,ft as a flower petal. Other lizards to look for are whiptails, skinks, and (in the extreme southwest corner of the state) one gecko species and the Gila Monster. Gila Monsters are large black, pink, and orange lizards which are venomous. They readily bite in defense, but do not attack non-threatening humans.

Of Utah's 32 snake species, the most commonly encountered are the harmless Great Basin gopher snake, garter snakes, and striped' whip snakes. There are four venomous rattlesnake species, but the one humans are most likely to encounter is the western rattlesnake. Take the time to learn what this snake looks like, so that you can distinguish it from the other, nonvenomous snakes. If you are careful, the danger is small. The Utah Department of Health estimates that the incidence of rattlesnake bites in the state is 4-6 per year, in a population of 1.6 million people. Between 1900 and 1985 there was only one recorded death due to rattlesnake bite in Utah.

In some areas, snakes seek hibernation dens under houses and porches. To discourage this, remove loose rocks, boards, and debris from the base of buildings. Cover any holes entering under the house.

Amphibians

One distinguishing feature of amphibians —frogs, toads, and salamanders—is that part of their life cycle takes place on land and part in the water. Amphibians emerge from eggs in the water, yet grow into air-breathing, land-dwelling adults.



If your property borders any type of permanent or intermittent water course, you can sustain its value to wildlife by growing thick vegetation next to it. Work with your neighbors to keep this life connection of vegetation intact.

On land they continue to require moist places as habitat. Utah's only salamander, the Tiger salamander, can be found under logs or piles of decaying leaves, where it preys on worms, slugs and insects.

There are six native toad species in Utah. The Western spadefoot employs a novel method of escaping heat and drought. It uses the specialized claws, or spades, on the back of its feet to dig deeply into the sand.

Conservation

Amphibians generally have small home ranges with specific habitat requirements for summer breeding and winter hibernating. This combination of conditions has made them vulnerable to human disturbance. Filling wetlands and clearing low-lying vegetation have eliminated some amphibian populations and limited others to smaller areas. In Utah's arid environments, water-bordering habitats are immensely important for amphibians, reptiles, fish, birds; and mammals, arid they support far greater numbers of wildlife species than surrounding areas.

If you aren't lucky enough to live next to a canal or stream, you can improve your backyard habitat by building a pond on your property. A rule of thumb would be to make it about 8-10 feet across, and roughly one foot deep, at the deepest. The sides should slope very gradually so that there is plenty of shallow area. The pond can be sealed with concrete or a clay product. Placing soil on top of the sealant will allow you to experiment with the culture of native aquatic plants. Place the pond in your yard at least 15 feet away from trees or shrubs (hiding places for predators, such as domestic cats), and within reach of the garden hose.

11 Uninvited visitors

When human habitations and natural habitats overlap, conflicts between people and animals may occur. Skunks, raccoons or woodpeckers don't set out to bother us, they are just responding to favorable habitat conditions that we have inadvertently provided.

The keys for dealing with uninvited wildlife visitors are to understand reasons for the animal's behavior and then remove the feature that is attracting the animal. The most typical features that attract wildlife are pet food left out, uncovered garbage cans, woodpiles, chimneys, openings in attics, and crawl spaces under building foundations.

Birds

You can reduce excessive populations of house sparrows and starlings in your yard by limiting their nesting spaces. Cover unbowed eaves and place hardware cloth over air vents, wide louvers, or other crevice-type openings.

If you are ever awakened by the sound of a woodpecker drumming on the side of your house, take a moment to ponder the reasons for this behavior. The woodpecker was not given the voice of a songbird, so its method of announcing territory during breeding season is to make a rap with its beak that resounds throughout the county. Woodpeckers may also be attracted to the soft wood of a house for cavity excavation, or, during other seasons, they may be seeking insects. If you want to deter woodpeckers' use of your home, fill all woodpecker excavations on the

house with caulking, try to drive the bird away as it perches on the house, and cover any areas used for drumming with something soft.

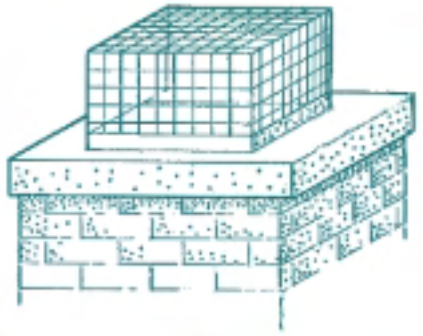
Small mammals

Skunks and raccoons are attracted to pet food and garbage. The simplest way to keep them away is to eliminate these things. Occasionally, a skunk will burrow beneath a house. Use mothballs to drive the animal away. Be sure that it has left before you seal the hole. Cover the sealed entrance with ⅜-inch wire mesh, buried 12-inches deep, with 6 inches protruding from the bottom at a 90-degree angle away from the house.

A fence 36 inches high, of ⅜- or ½-inch wire mesh will keep skunks out of gardens. Place 24 inches of fencing above ground and 12 inches below to prevent the animal from digging beneath the fence.

Occasionally, skunks, raccoons and other animals will become trapped in basement window wells. Prop a log or 2 X 4 in the window well to allow them easy escape.

Raccoons have learned to use chimneys for sleeping and den sites. If this is a problem at your house, a cap of ⅜-inch wire mesh, as illustrated, will keep raccoons out. Raccoons can best be excluded from gardens by burying at least 9 inches of the welded wire fence below the ground. A wire strung above the mesh at a 65-degree angle pointing away from the fence will deter climbers.



Insect pests

When faced with insect pest problems in your yard, challenge yourself to try new, less toxic pest control methods, and to use synthetic chemicals only as a last resort. The lethal effects of these chemicals often extend beyond your target to other, "innocent" species. Here are some rules of thumb for pest control in a wildlife garden:

First, keep plants healthy. Insects are most likely to invade a weakened plant, and thriving plants in robust soil have a high resistance to pests and disease.

In vegetable gardens, use the principle of companion planting. Many plant species are known to repel particular insects, so, such a plant can be placed next to a vegetable that is susceptible to that particular insect.

There are several biological control methods available for garden insect pests; the list below includes some of the highlights:

Insecticidal Soap controls mites, aphids, leaf-feeding caterpillars, scales and other insects, and can be used indoors and outdoors.

Sabadilla Dust, made from the seeds of a South American lily, controls squash bugs, cabbage worms, cucumber beetles and many others.

Diatomaceous Earth kills ants and aphids, but not earthworms, and is not a toxic substance.

Grasshopper Spore is lethal to grasshoppers—but not birds, animals or people.

Deer

Many home-building sites in Utah are situated on deer winter range—foothill locations where deer have previously found forage during the snowiest months. When the deer return to winter ranges and find subdivisions, they eat whatever vegetation they can to stay alive. Quite often, they survive on vegetation planted around houses.

Rather than planting ornamentals which are damaged when deer feed on them, why not plant trees and shrubs that are adapted to deer browsing? Native trees and shrubs have evolved with the deer, and respond to browsing with increased twig growth in the spring. They are attractive and, what's more, most of them do not require a lot of water.

Winter deer browsing is not nearly as noticeable on deciduous vegetation as it is on the evergreens. Evergreens are much slower growing, they are not dormant in the winter, and they respond poorly to pruning. The Utah Division of Wildlife Resources has identified ornamental plants that are least preferred by deer during the winter and spring, and the plants that best recover from browsing. A sample is listed below, and the complete lists are available from the Division.

Ornamental plants least preferred by mule deer

Trees

Norway Maple
Acer platanoides

Birch
Betula species

Hawthorn
Crataegus species

White Ash
Fraxinus americana

Engelmann
Picea engelmanni

Blue Spruce
Picea pungens

Bristlecone Pine
Pinus aristata

Japanese Black Pine
Pinus thunbergii

Narrowleaf Cottonwood
Populus angustifolia

Douglas Fir
Pseudotsuga menziesii

Shrubs

Red osier Dogwood
Cornus sericea

Singleleaf Ash
Fraxinus anomala

English Holly
Ibex aquifolium

Shrubby Cinquefoil
Potentilla fruticosa

Spruce Gooseberry
Ribes grossularia

Yucca
Yucca species

Flowers/Vines

Daisy
Chrysanthemum species

Tiger Lily
Lilium coloumbiana

Wisteria
Wisteria species

Native shrubs that best recover from winter mule deer browsing

Trees

Saskatoon Serviceberry
Amelanchier alnifolia

Sagebrush
Artemisia species

Fourwing Saltbush
Atriplex canescens

Oregongrape
Berberis repens

Rabbitbrush
Chrysothamnus species

Cliffrose
Cowania mexicana

Winterfat
Ceratoides lanata

Apache Plume
Fallugia paradoxa

Myrtle Pachystima
Pachystima myrsinites

Chokecherry
Prunus virginiana

Shrubs

Antelope Bitterbrush
Purshia tridentata

GambelOak
Quercus gambelii

Smooth Sumac
Rhus glabra

Skunkbush Sumac
Rhus trilobata

Golden currant
Ribes aureum

Woods Rose
Rosa woodsii

Flowers/Vines

Western Red Raspberry
Rubus stigosis

Blueberry Elder
Sambucus caerulea

Snowberry
Symphoricarpos species

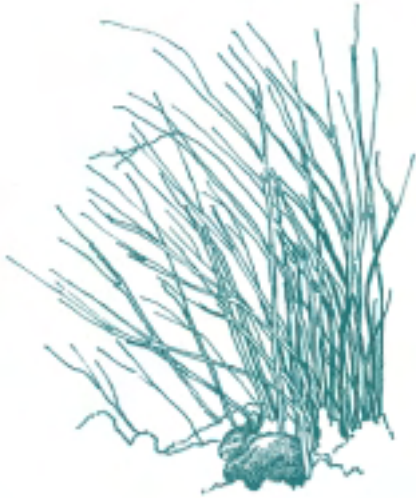
Lists from Austin, Dennis and Allan Hash. 1988. *Minimizing Browsing Damage by Deer: Landscape Planning for Wildlife* Utah Science. 49(3): 66-70. Reprints available from the Utah Division of Wildlife Resources.

12 Neighborhood habitat

The benefits of providing wildlife habitat in urbanized areas can be expanded simply by extending our enthusiasm for nature gardening beyond our property lines. Two neighbors working together can increase vegetation quality for the benefit of native birds, contribute to conservation of riparian habitat, and generate interest in backyard wildlife conservation among the other neighbors. It can create a ripple effect.

Private properties and public efforts to provide wildlife habitat are recognized and awarded by the National Institute for Urban Wildlife. Properties are named "Urban Wildlife Sanctuaries."

Why not start a back yard wildlife program in your community? Encourage gardeners to plant habitat on their properties, spearhead an urban wildlife demonstration garden, ask nurseries to provide a wider selection of native plants, and support public acquisition of open space or conservation of riparian or wetlands areas. Public parks and school grounds are ideal places for wildlife habitat gardens.



Wildlife gardening projects are well suited for almost all clubs and organizations: homeowners associations, garden clubs, civic groups, school groups, scouts—and they present superb learning opportunities for everybody. For instance, providing backyard wildlife demonstration gardens can generate further conservation interest and participation among community members.

Make a contribution to wildlife habitat conservation in your community by encouraging grounds maintenance supervisors to modify some landscape management practices. Ask them to leave some grass areas unmown, (particularly during the spring nesting season), to limit pesticide spraying, to include more native species in plantings, to retain dead and downed trees, and to enhance plantings near water.

Your home wildlife conservation garden helps the community in many ways. Yet the benefits to wildlife are most effective when neighbors, neighborhoods and public property managers work together to increase and enhance wildlife habitat. Demonstration gardens and other community landscapes that display habitat plantings show a sense of regional identity and pride. They can be focal points that demonstrate community interest in a high quality of life for all.

Checklist: Creating a landscape for wildlife

This checklist can be used to review the guidelines of landscaping for wildlife, and to get started on a plan for your own yard.

Defining landscaping goals

Set a realistic goal for your yard, based on its size and location. Some examples of different wildlife landscaping goals would be:

- **For a 5-acre lot outside the city limits:**
  Plant large clumps of the same native vegetation species that exist next to the property and retain dead or dying trees for woodpeckers, nuthatches and chickadees.
- **On a ½- to 1-acre lot in a developing neighborhood:**
  Devote half of the back yard area to native plants of the region and increase the amount and diversity of the vegetation in the remaining parts of the yard.
- **In an established yard in a neighborhood of ¼-acre lots:**
  Work with a mixture of native and ornamental plants to build a large mass of vegetation; also provide water, food-producing plants, nest boxes and a butterfly garden.
- **On a small strip of lawn outside an apartment:**
  Cooperate with the landowners to replace the grass with shrubs and flowers that will attract hummingbirds and butterflies.

List the goals that you would like to set for your backyard wildlife landscape:

_____

_____

_____

_____

What are the wildlife species you would like to attract?

_____

_____

_____

What are the things you would like to try in order to accomplish these goals?

- ☐ Increasing the number and kind of plants in the yard and including plants of many shapes, sizes and ages,
- ☐ Reducing the lawn area and replacing it with a more diverse mix of ground covers, grasses, flowers and shrubs.
- ☐ Providing water.
- ☐ Adding tree branches or logs for perching:
- ☐ Including special plantings for hummingbirds, butterflies, moths and bees.

Choosing Plants

Consider these objectives as you select the plants for your wildlife garden:

- ☐ Choosing plants appropriate to your location and climate
- ☐ Including evergreens for year-round cover
- ☐ Providing some kind of food in every season
- ☐ Equally representing the three vegetation layers that will attract wildlife:
  ground cover: ½-2' high
  shrub: 2-8' high
  tree: over 8' high

Use this table to help you include these objectives as you plan. For each plant, check the season of its greatest food or cover value to wildlife. Refer to the tables on pages 10-17 to find the plants best suited to your location and plant growing conditions. The list of plants that you make now can serve as a guide as you develop your landscape over time.

Plants Selected	Check each season that food or cover is provided				Notes
	Sp	Su	F	W	
Trees					
_____	☐	☐	☐	☐	_____
_____	☐	☐	☐	☐	_____
_____	☐	☐	☐	☐	_____
_____	☐	☐	☐	☐	_____
Shrubs					
_____	☐	☐	☐	☐	_____
_____	☐	☐	☐	☐	_____
_____	☐	☐	☐	☐	_____
_____	☐	☐	☐	☐	_____
Ground covers, wildflowers and grasses					
_____	☐	☐	☐	☐	_____
_____	☐	☐	☐	☐	_____
_____	☐	☐	☐	☐	_____
_____	☐	☐	☐	☐	_____

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Agencies and Organizations

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Salt Lake City, UT 84152-0041

Utah Museum of Natural History
President's Circle (1390 E 220 S)
University of Utah
Salt Lake City, UT 84112
(581-4303)

National Wildflower Research Center
2600 Farm to Market Road 973 North
Austin, TX 78725

Bat Conservation International
P.O. Box 162603
Austin, TX 78716
512-327-9721
www.batcon.org

Lepidopterists' Society
1900 John St.
Manhattan Beach, CA 90266-2608
310-545-9415

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