

Backyard Conservation

**Bringing
Conservation
From the
Countryside to
Your Backyard**



A cooperative project of
USDA Natural Resources Conservation Service
National Association of Conservation Districts
Wildlife Habitat Council
National Audubon Society



From the countryside to your backyard

A tradition of caring for our natural resources



Jim Archambeault

Farmers and ranchers, and many homeowners, are making progress in natural resource protection. You can join their conservation tradition, right in your own backyard.

There are nearly 2 billion acres of land in the conterminous United States. About 70 percent of that land is privately owned and its care is in the hands of those who live and

work on it. Most of that land, 1.4 billion acres, is managed by farmers and ranchers. More than 92 million acres of land—an area the size of California—is privately developed and much of it is tended by homeowners.

Farmers and ranchers use conservation plans to help them apply practices that meet their production objectives and protect soil, water, air, plant, and animal resources. You may want to develop a plan for your own backyard to help you apply conservation measures that fit your needs. Or maybe, for now, you'd like to try just a few of the activities in this book.

We hope you'll enjoy these activities that bring beauty and diversity to your yard—whether your “yard” is measured in acres, feet, or flower pots. We know you'll feel good about improving the environment and joining the conservation tradition of America's farmers and ranchers.



Jim Archambeault



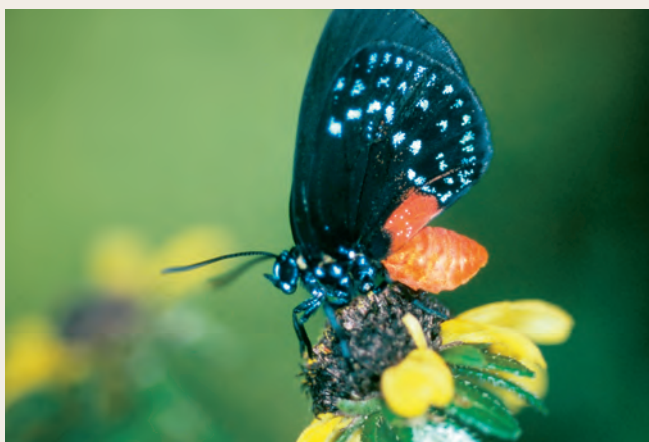
John Hoepfner



Lynn Betts, USDA



Lynn Betts, USDA



Alana Edwards



Lynn Betts, USDA

PREVIOUS PAGE

(top) *Contour stripcropping*;
(bottom right) *Fledgling American Robin*;
(bottom left) *Water and plants to attract butterflies*;
(top left) *Water lily*.



Lynn Betts, USDA

THIS PAGE

(top) *Constructed wetland with landscaping*;
(right) *Purple prairie coneflowers*;
(bottom left) *Finished compost*;
(center left) *Atala hairstreak butterfly*.

What's in this book

In this publication, you'll see practices used to conserve and improve natural resources on agricultural land across the country. You'll see how you can use similar practices in your own backyard to help improve the environment, help wildlife, and in many cases, make the area more attractive and enjoyable.

Most backyard conservation practices are easy to put in place. Tips and highlights are given here, but for more information, or for help in developing your backyard plan, you may want to consult a local

landscaper, garden club, or any of the organizations listed in the back of this book.



This book highlights 10 conservation activities, adapted from farms and ranches, that can be used in your backyard.



Tree planting
Page 6



Wildlife habitat
Page 8



Backyard pond
Page 14



Nutrient management
Page 21



Terracing
Page 22



Water conservation
Page 23



Jim Archaibeault

PREVIOUS PAGE
 (top left) *Cedar Waxwing*; (top center) *Backyard pond and water-loving plants*.

THIS PAGE
 (right) *Contour stripcropping*.

On the farm



Tim McCabe, USDA

Conservation efforts by many farmers and ranchers help keep the air clean; maintain good-quality water for drinking, recreation, and fish and wildlife; provide homes for wildlife; ensure healthy soil; and sustain a diversity of plants. These benefits help people, wildlife, and the environment.

Numerous Federal and State conservation programs are aimed at natural resource protection and sustainability. Many provide educational, technical, and financial assistance to help farmers consider and implement conservation practices.



4
Backyard wetland
Page 16



5
Composting
Page 18



6
Mulching
Page 20



10
Pest management
Page 24



EVERYBODY HAS A BACKYARD
Page 26

Trees add beauty and so much more.



Lynn Betts, USDA

In your backyard

Trees in your backyard can be home to many different types of wildlife. Trees also can reduce your heating and cooling costs, help clean the air, add beauty and color, provide shelter from the wind and the sun, and add value to your home.

Choosing a tree

Choose a tree that will **provide enjoyment** for you, fits your landscape, and is not invasive in your geographical area. Take advantage of the abundant **references on gardening** in local libraries, at universities, arboretums, and parks where trees are identified, and from native plant and gardening clubs, and nurseries. Before you buy, you can find out if a tree is **appropriate for your area**, how big it will get, how long it will live, its leaf color in the fall, any nuts or fruit it may bear, and the proper planting instructions and care for that species. Make a conscious effort to **select trees native to your area**. They will live longer, be more tolerant of local weather and soil conditions, enhance natural biodiversity in your neighborhood, and be more beneficial to wildlife than non-native trees. Avoid exotic trees that can invade other areas, crowd out native plants, and harm natural ecosystems. Plant a **variety** of tree species. For wildlife, choose trees and shrubs that bloom and bear fruit or nuts at different times of the year.



Jim Archambeault

PREVIOUS PAGE

(top) *Farmstead windbreak*;
(bottom left) *A restful, soothing place among the trees*; (top left) *Enjoying the backyard*.

THIS PAGE

(top left) *Northern Cardinal nest*; (top right) *Twine will be removed before planting*;
(bottom left) *Field windbreak*.

Lynn Betts, USDA



Howard B. Eskin



Lynn Betts, USDA

Planting a tree

A properly planted and maintained tree will grow much faster and live much longer than one that is incorrectly planted. **Early spring**, before bud break, is a good time to plant most trees. Trees may also be planted in the early fall if local site conditions will allow roots to begin growing. Hot summer weather is hard on newly planted trees and planting in frozen soil during the winter is difficult and tough on tree roots.

Be sure to carefully follow the planting instructions that come with your tree. If specific instructions are not available, follow these tips:

- Dig a hole twice as wide as and slightly shallower than the root ball. Roughen the sides and bottom of the hole with a pick or shovel so that roots can penetrate the soil.
- With a potted tree, gently remove the tree by cutting away the container. With trees wrapped in plastic or burlap, remove the string or wire that holds the wrapping to the root crown. Also, remove the wrapping before planting.
- Gently separate circling roots on the root ball. Cleanly cut exceptionally long roots,

and guide the shortened roots downward and outward. Root tips die quickly when exposed to light and air, so don't waste time.

- Lift the tree by the root ball, not the trunk, and place the root ball in the hole. Leave the top of the root ball (where the roots end and the trunk begins) 1/2 to 1 inch above the surrounding soil, making sure not to cover it unless roots are exposed. As you add soil to fill in around the tree, lightly tamp the soil to collapse air pockets, or add water to help settle the soil.

- Form a temporary water basin around the base of the tree to encourage water penetration, and water thoroughly after planting. A tree with a dry root ball cannot absorb water; if the root ball is extremely dry, allow water to trickle into the soil by placing the hose at the trunk of the tree.
- Mulch around the tree. A 3-foot diameter circle of mulch not exceeding 4 inches in depth is common.

Early maintenance

For the first year or two, especially after a week or so of very hot or dry weather, **watch your trees closely for signs of moisture stress**. If you see leaf wilting or hard, caked soil, **water the trees well** and slowly enough so the water soaks in rather than runs off. This will **encourage deep root growth**. Keep the area under the trees mulched and free of other plants. Until the trees are deeply rooted, grasses and other plants may take up moisture before the trees can get their share.



Lynn Betts, USDA

On the farm

Windbreaks and tree plantings slow the wind and provide shelter and food for wildlife. Trees can shelter livestock and crops; they are used as barriers to slow winds that blow across large cropped fields and through farmsteads. An established windbreak slows wind on its downwind side for a distance of 10 times the height of the trees. Farmstead and field windbreaks and tree plantings are key components of a conservation system. They also improve air quality by capturing dust. Planting a mix of tree species helps prevent total losses to disease and severe weather; it also provides food, nesting areas, and cover for a variety of wildlife.

Trees, shrubs, and other plants can provide homes and food for wildlife.



In your backyard

Your backyard can be home for many different types of birds, butterflies, beneficial insects, bats, and other wildlife. Trees, shrubs, and other plants provide both food and shelter for wildlife. The types of plants you use for food and cover will help determine the wildlife species attracted to your backyard. Consider **native plant species** first. Plant a **variety of species**. Select plants that **flower and**

bear fruit at different times of the year. Shrubs that produce berries can provide food throughout the year. Trees with nuts and fruit can also provide seasonal foods. Flowers and fruits of some plants attract hummingbirds and butterflies to your backyard. You also can construct **birdhouses** and other shelter and put out commercial **bird feed**.



Lynn Betts, USDA

Spicebush
Sumac
*Viburnum**
*Wax myrtle**

Trees for birds and other wildlife

American beech
American holly
Apple
Balsam fir
*Black cherry**
Black gum
Cottonwood
Crabapple
Flowering dogwood
Hawthorn
Hickory
Live oak
Oak
Red mulberry

Attracting birds to your yard

These are examples of plants that you can grow to attract birds and other species. Be sure to check with your nursery on what grows best in your area.

Shrubs for birds

Common juniper
Highbush blueberry
Holly
*Pyracantha**
Red-osier dogwood
Serviceberry

Vines for birds

American bittersweet
Native honeysuckle
*Strawberry**
*Trumpet creeper**
*Virginia creeper**
*Wild grape**

*This plant could become invasive in some areas. Please check with a local authority (see back cover) to determine whether it is potentially invasive where you live.



© Janet Zinn

PREVIOUS PAGE
 (top) *White-crowned Sparrow*; (bottom right) *Supplemental food for birds*; (bottom left) *Interspersed native plants*.

THIS PAGE
 (top right) *Anna's Hummingbird*; (bottom right) *Eastern Bluebird, feeding young in nestbox*.



Virgil Keener

Flowers for birds

- Aster*
- Coneflower*
- Coreopsis*
- Sunflower**

Nectar plants for hummingbirds

Hummingbirds are typically attracted to red and yellow tubular flowers, although they frequently visit others as well.

- Bee balm*
- Columbine*
- Delphinium**
- Fuchsia*
- Jewelweed*
- Lobelia*
- Native honeysuckle*
- Penstemon*
- Phlox*
- Salvia**
- Trumpet creeper**

Additional food and shelter for birds

You can provide additional food and shelter for birds and other wildlife by building or purchasing feeders and houses and by setting out certain foods. Watching birds feeding can be an enjoyable pastime. Find out which birds **spend the winter** in or **migrate through your area**, and provide food for them. Check to see which birds are most com-

mon and which are rare or in special need of food and shelter. Many species of birds can be attracted by a **variety of feed** in different styles of feeders. Be sure to put feeders **out of reach of predators**.

Common food for birds

- Hummingbird:*
 Sugar water (1 part sugar to 4 parts water) in a feeder. Every 3-4 days, wash feeder with a little bleach and water, rinse thoroughly, and add new sugar water.
- Oriole:*
 Citrus fruit on a nail
- Titmouse, nuthatch, chickadee, and many others:*
 Black oil sunflower seeds
- Goldfinch, pine siskin:*
 Thistle seed
- Woodpecker, wren:*
 Plain suet in a suet feeder

Note: Use of feeders could attract some wildlife species that you may not want to feed, such as starlings, crows, and squirrels. Type and placement of feeders and the type of food can help deter unwanted species.

Birdhouses



Choose a location that birds will find **appealing and secure**, usually away from the bustle of human activity. Make or buy a birdhouse **specifically designed** for the species of bird you want to attract. The size of the hole is most critical to prevent the eggs and young from being destroyed by larger birds; always check a list of appropriate hole sizes.



Photo copyright Ed Erkes—Used with Permission

Attracting butterflies to your yard

Colorful butterflies add beauty and interest to your backyard. There are hundreds of different species of butterflies in North America. Butterflies require food in liquid form, such as nectar produced by plants. They get some of it from flowers and from juices of extra-ripe fruits. The types of **flowering plants** you grow will determine the kinds of butterflies you will attract to your backyard. Observe species nearby, and use plants that attract them. Provide **nectar-rich flowers** for adult butterflies and foliage for caterpillars. Do not use insecticides near plants for butterflies.



Stephen L. Buchmann

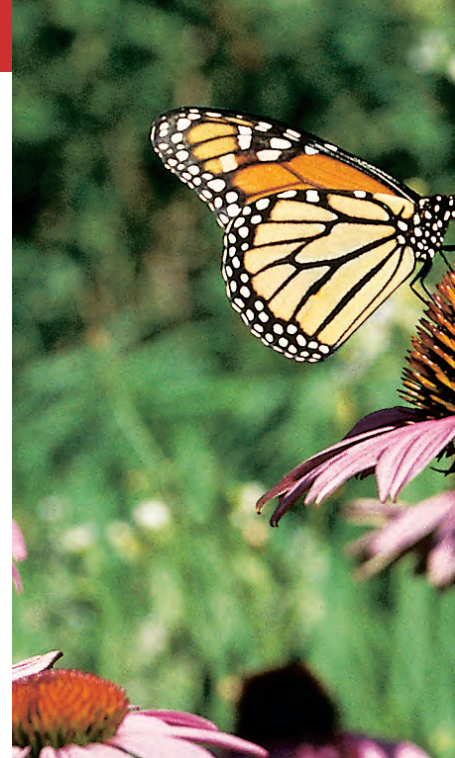
Nectar plants for butterflies

Aster
Azalea
*Butterfly bush**
Butterfly weed and other milkweeds
Coneflower
*Lantana**
Lupine
Phlox
Zinnia

Plants for caterpillars

Caterpillars, the larval stage of butterflies, need nourishment as well. Plants for caterpillars include:

Aspen
Birch
Butterfly weed and other milkweeds
Dill
Hollyhock
Senna
Sorrel
Spicebush
Willow



Stephen L. Buchmann

Attracting bees to your yard

In the United States, there are nearly 5,000 different species of native bees—almost all of them **solitary bees** that nest in holes in the ground or burrows in twigs and dead tree limbs. These bees don't have hives to protect so they are **not aggressive** and rarely sting. Bumblebees, carpenter bees, sweat bees, leafcutter bees, digger bees, and others **pollinate many different kinds of plants**, and play a critical role in healthy wild plant communities and gardens. Some 30 percent of our diet is the direct result of pollinating visits by bees to flowering fruit trees and vegetable plants. Providing bee habitat

Dead, dying, and hollow trees and logs



Many people are not aware of the value of dead, dying, and hollow trees, as well as logs on the ground, for wildlife. Dead trees provide homes to over 400 species of birds, mammals, and amphibians. Fish, insects, plants, and fungi also benefit from dead and dying trees. Consider leaving standing dead and dying trees in your yard unless they pose a human safety or property hazard, and use downed woody materials in gardens and landscaping.



Lynn Betts, USDA

PREVIOUS PAGE
 (top) *Monarch butterfly on coneflower*; (bottom right) *Digger bee*; (left) *Giant swallowtail after emerging from chrysalis*.

THIS PAGE
 (top right) *Canada Goose*;
 (bottom) *Egret over wetland*;
 (left) *Pallid bat with insect*.

in your yard can increase the quality and quantity of your fruit and vegetable harvests.

Nectar plants for bees

Bees are attracted to most flowering plants, and are especially fond of blue and yellow flowers. Try planting your garden so you have **different species blooming in the spring, summer, and fall.**

Plants for bees include:

- Bee balm*
- Black-eyed Susan**
- Cardinal flower*
- Clover and other legumes**
- Cosmos**
- Crape myrtle*
- Goldenrod*
- Lupine*
- Mallow*
- Milkweed*
- Mint*
- Sunflower**

*This plant could become invasive in some areas. Please check with a local authority (see back cover) to determine whether it is potentially invasive where you live.

Bee houses



A good use for **scrap lumber** (at least 3 to 5 inches thick) is to drill holes (from 1/8-inch to 5/16-inch in diameter) about 90 percent of the way into the thick wooden block. Space the holes about 1/2-inch to 3/4-inch apart. The 5/16-inch holes work best as homes for orchard bees, which are excellent pollinators of fruit trees. Hang your bee blocks **under the eaves** of your house or garden shed, protected from direct sun and rain.

Medija D. Turtle, Bat Conservation International

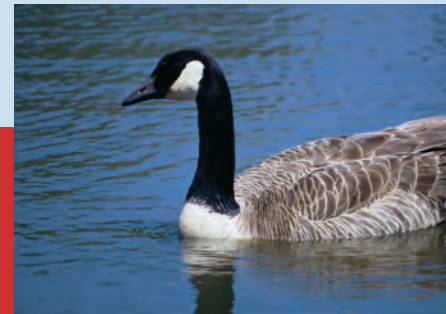


Attracting bats to your yard

Bats can be beneficial and interesting mammalian species in your neighborhood. Bats are among the most important consumers of **night-flying insects**, including mosquitoes, moths, and beetles. For example, a single little brown bat can catch more than **600 mosquitoes in an hour.** Watching bats



Lynn Betts, USDA



Bill Welker, USDA

On corporate lands

Some corporate lands are set aside and managed just for wildlife habitat. Through Wildlife Habitat Council-assisted projects, more than 2.4 million acres in 48 States, Puerto Rico, and 16 other countries are managed for wildlife.

Habitat projects on corporate lands are cooperative efforts among management, employees, the community, local conservation groups, and local, State, and Federal agencies.

fly around light posts catching bugs can be an interesting nighttime activity.

To help attract bats and provide them with much-needed roosting habitat, you may want to consider putting a bat house in your yard. The houses should be placed on **poles or buildings at least 15 feet high** in a spot that receives 6 or more hours of sun per day. Tree trunks are usually too shady for bat boxes. Some species, such as red bats and hoary bats, will use foliage of shrubs and

trees, while others, such as evening and Indiana bats, will roost under loose bark or in cavities.

As with all wildlife, bats should be **watched but not handled** or chased. Bats are generally shy of humans, and rarely “attack” or fly after a person, but if caught or picked up from the ground, a bat may bite in self-defense. Keep a respectful distance from all bats.



Water for wildlife

Clean, fresh water is as important to birds, bats, and other wildlife as it is for people. Water in a **saucer, bird bath, or backyard pond** gives wildlife the water they need. Remember to change the water every few days to **keep it fresh**. In hot weather, it may be necessary to refill the container every day.

Logs, rocks, and other in-water structures provide drinking and basking habitat for turtles, butterflies, and songbirds. Stones with depressions that collect water will help attract butterflies.

Reduce chemicals



Butterflies, birds, bees, and all wildlife are very vulnerable to many pesticides and other chemicals. Probably the best single thing a gardener can do for wildlife is to **minimize chemical use**. If you use chemicals, always **follow label instructions**.



Maslovsk/Wildlife Productions



Lynn Betts, USDA



Ron Nichols, USDA

PREVIOUS PAGE

(top) Backyard pond with lily pads and frogs; (bottom) Cleaning birdbath; (left) Thistle feeder with American Goldfinches.

THIS PAGE

(top right) Eastern Bluebird, male; (bottom right) Streamside buffer of trees and other plants; (bottom left) Red-eared and painted turtles; (top left) A backyard pond.



Maggie Strucker



Photo copyright Ed Erkes—Used with Permission

On the farm

Farmers are installing grass, tree, and shrub plantings; ponds; and other wildlife habitat at record rates. Buffer strips along waterways, grass areas, and native prairie plantings are some of the practices used on farms. Nesting structures such as bird and bat houses are sometimes provided for wildlife. Some farmers plant or leave food plots of corn, millet, or other grains specifically for wildlife.

Pheasants, grouse, quail, prairie chickens, and songbirds, as well



Lynn Betts, USDA

as leopard frogs, diamond-back terrapin, red bats, and other wildlife, benefit from habitat that farmers and ranchers establish on their land. Farmers appreciate and enjoy wildlife supported by good habitat and also benefit from pollination and pest control by beneficial insects.



Lynn Betts, USDA

A backyard pond will likely become the focal point for all your backyard conservation.

In your backyard

Backyard ponds are for birds, butterflies, frogs, fish, and you and your family. These ponds are typically small, sometimes no larger than 3 to 4 feet in diameter. Water is very effective in **drawing wildlife** to your backyard. It is also a natural, relaxing, and scenic addition that can provide interest and enjoyment.



Jim Achambeault

Where to put a backyard pond

Consider locating your backyard pond in view of a deck or patio where everyone can enjoy it. Have it blend in with its natural surroundings. Plan to **landscape around the pond** to provide habitat for frogs and birds that need land and water. Be sure electrical service is available for a pump, filter system to keep water fresh, or for lighting. There will be less maintenance and cleanup and most aquatic plants will grow better if your pond is not under trees.

When to install a backyard pond

You can put in a backyard pond any time the ground isn't frozen or overly wet. Plan on taking at least a weekend to install and landscape.

Backyard pond supplies

Most sites will require lining with an impervious material to hold a constant water level. A **flexible liner** made of sheets of strong plastic is generally the easiest way to line your pond. Flexible liners may make it easier for the pond to fit into the natural surroundings of your yard. Pre-formed rigid liners also are available, but generally are more expensive and more difficult to install. A wooden half barrel with a liner makes a nice small, above-ground pond. You'll also need a **pump and filter** to maintain clean water and healthy fish. You can add plants, landscaping, heaters, or special effects like fountains and waterfalls.

Size and depth

Common regrets of backyard pond owners are that the pond was too small or too shallow. Minimum depth for fish is 18 inches; a deep end of 2 or 3 feet is recommended. Size and shape of ponds with rigid liners are dictated by the liners. A pond with a flexible liner may be any shape or size.

Establishing plants

Free-floating plants are an integral part of keeping the water in your pond clear. Use native plants that are recommended for your area.