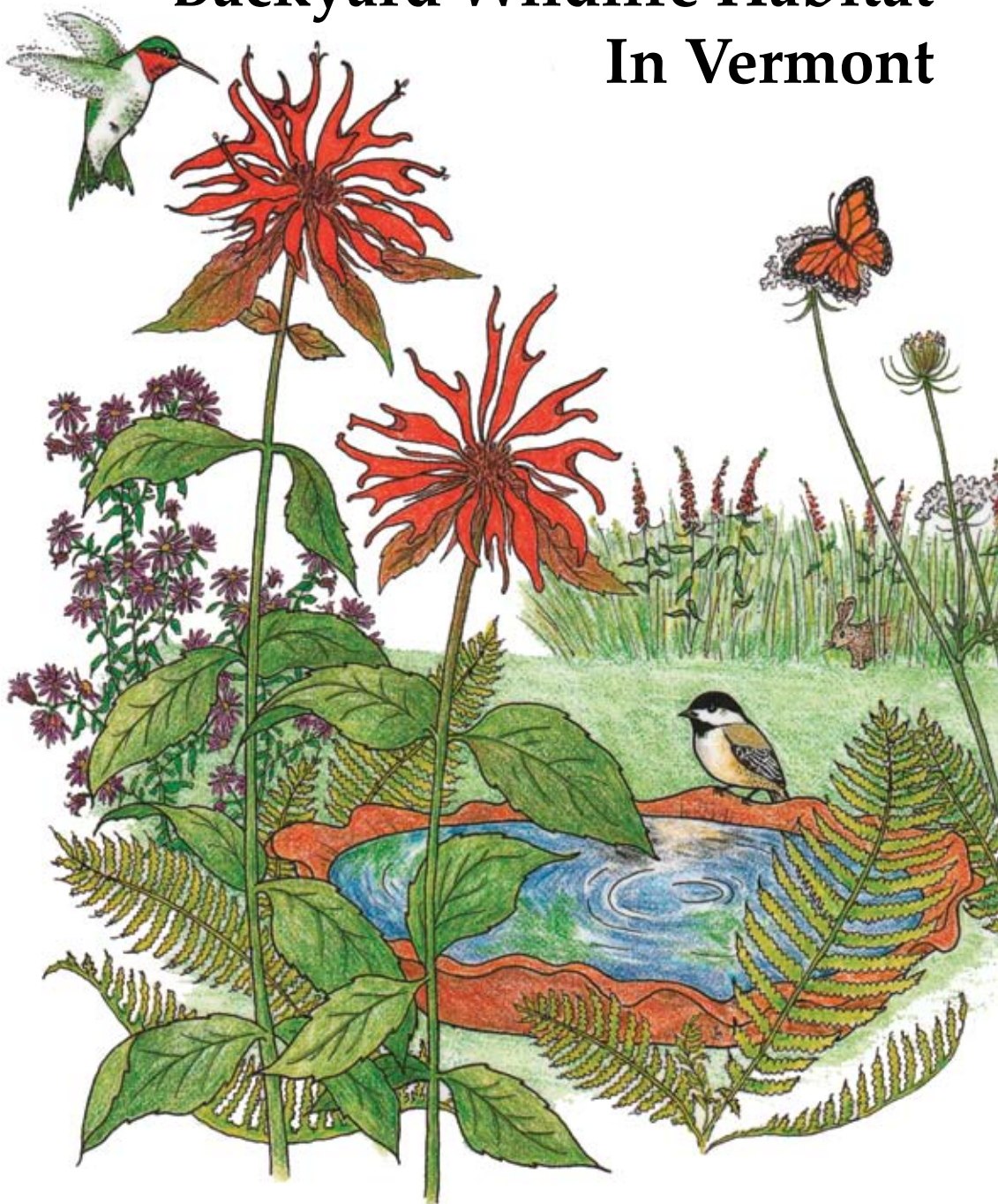


Backyard Wildlife Habitat In Vermont



by Steve Parren
Illustrated by Libby Walker Davidson

Presented by the Agency of Natural Resources
Vermont Fish & Wildlife Department
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Table of Contents

Enjoying Wildlife	1
Wildlife Habitat in Your Backyard	2
Food	3
Birdseed	3
Suet and Other Fatty Foods	5
Birdseed Feeders	6
Shields for Feeders and Nesting Boxes	6
Gravel and Eggshells	7
When to Feed the Birds	7
Hummingbirds	8
Food Plants	9
Large Trees	9
Smaller Trees	10
Large Shrubs	11
Smaller Shrubs	12
Brambles and Vines	13
Grasses and Wildflowers	13
Butterfly Gardening	16
Plants that Attract Hummingbirds	17
Dead Trees and Other Insect Food	17
Water	18
Birdbaths and Other Shallow Water	18
Keep Your Water Wet (Unfrozen)	19
Pools to Ponds	19

Cover	21
Nesting Boxes	21
Bat Boxes	24
Buildings, Barns and Wildlife	24
Nesting Material	25
Plants and Natural Materials as Cover	25
Trees, Shrubs, and Grasses	25
Lookout Perches	25
Protection from Predators	26
Dead and Hollow Trees	26
Fallen Trees, Brush Piles and Stone Walls	27
Developing Your Backyard	28
Consider What You Already Have	28
An Example from the Suburbs	29
An Urban Example	30
Observing Wildlife	30
Designing Your Backyard for Wildlife and You	31
Birds Hitting Window	32
What You Can Do In Your Backyard	32
Maintaining Your Backyard Wildlife Habitat	35
Seeding, Mowing, and Cutting	35
Moving Trees and Shrubs	36
Being Responsible	37
Dangers of Collecting Wildflowers	37
Non-native Animals and Plants	37
Global Warming and What You Can Do	37
When to Stop Feeding	39
Preventing Disease	40
Cats and Dogs.....	40
Poisoning.....	40
Other Risks to Wildlife	41
Leaving Wildlife Wild	41
Animals that Need Help	41
When Wildlife Get Annoying	42
Rabies	42
Wildlife and You	43
Backyard Wildlife Contacts	44
Reference Materials	45

Backyard Wildlife Habitat in Vermont

by Steve Parren

Enjoying Wildlife

All of us enjoy observing wildlife. We stop to admire the ‘V’ of geese flying overhead and are thrilled by the sight of a bluebird. The deer at the meadow’s edge and the scurrying chipmunk on the wall give us pleasure. Who wouldn’t stop to watch painted turtles sunning themselves on a partly submerged log? Spring mornings wouldn’t be complete without a robin’s song.

We enjoy wild animals whenever we are lucky enough to see or hear them. A growing number of us have discovered that the joy of seeing and hearing wildlife can be experienced every day—right at home.

Feeding “my” birds in the morning is as much a part of my daily routine

as a cup of coffee. It is a lifestyle that is rapidly

spreading in the U.S.A.: birdseed sales went from 1 billion dollars in 1985 to 3.3 billion dollars in 2006! Vermonters are part of this trend. We spent \$68 million on feeding, watching, and photographing wildlife in 2006. A 2006 survey showed that 78 percent of the Vermont respondents fed wildlife and 70 percent reported observing wildlife at home.

The world we live in is full of people — 6.7 billion on the planet, 304 million in the U.S.A., and over 623,000 in Vermont. With so many of us, wild animals and plants are being squeezed out of their homes. We can help wildlife by being good neighbors. Many animals are willing to share our yards. Cardinals, chickadees, rabbits, squirrels, frogs, toads, bluebirds, woodpeckers, and chipmunks are only a few of the wild animals that will liven up our yards if we give them a chance. We don’t need to live our lives apart from nature. Our own backyards can be both safe havens for wildlife and delightful connections with the natural world for us.



Wildlife Habitat in Your Backyard

This booklet is written for those who would like to enjoy wildlife at home. I've included many ideas that have been successful attracting wildlife to Vermont backyards. Look over these ideas and try out the ones that appeal to you. If you want more information or assistance, contact a group interested in backyard wildlife habitat and read other materials listed at the end of this booklet. A little effort on your part will be rewarded by wildlife sharing your backyard.

Wildlife Habitat in Your Backyard

What is wildlife habitat? Wildlife habitat is the area in which animals find the **FOOD**, **WATER**, and **COVER** they need to survive.



Different kinds of animals and plants are found in different habitats. Some animals and plants live in meadows while others prefer woodlands.

Backyards can be productive wildlife habitat, especially when our landscaping efforts blend in with natural conditions. Most yards have the potential to provide needed **FOOD**, **WATER**, and **COVER** for many species of wildlife. Feeding the birds supplements the food requirements of a number of different birds and perhaps chipmunks and squirrels. Add a birdbath or garden pool and wildlife will not need to leave your yard to

Food, water and cover for wildlife can be easily provided in your backyard.

search for needed water. But what about cover for concealing young animals, resting, and escaping from predators? Will wildlife be as likely to share your yard if there are no trees, shrubs, or other plantings? The house sparrow, a European transplant, will use your feeder even if your yard is paved, but if you want a variety of native animals you must provide cover.

Try these 3 easy ways to improve your backyard for wildlife.

- ◆ Don't mow, let grasses and wildflowers grow
- ◆ Don't remove vines and brush, they provide natural food and cover
- ◆ Don't cut down a dead tree, it may save a squirrel's home and provide a woodpecker with food

Note: This booklet does not provide detailed descriptions of the various animals and plants mentioned. Several field guide series such as Audubon, Golden, and Peterson and the Stokes Nature Guides do an excellent job covering nature topics. Use them to build on your existing knowledge of the natural world—you probably know more than you think you do.

Food

Wild animals spend a great deal of their time searching for food and eating. Because of Vermont's long, cold winters many birds migrate to warmer places. Some animals such as woodchucks hibernate. Others such as squirrels store up a supply of food, and some survive on what they can find.

While it may not be necessary for us to fill our feeders for the winter birds and squirrels to survive, the fact that so many come by for a meal indicates that they find it helpful.

Birdseed

I notice more activity at my feeders during the coldest weather. Birds forage in the fields and forests on mild days during winter, but when it is really cold they seek out feeders where they can depend on finding an energy-packed lunch without burning up too much energy.

When feeding wild birds, what you feed is important. If I could only use one type of food, I would choose **black oil sunflower seeds**. This seed is relished by chickadees, evening grosbeaks, cardinals, and finches. It is less attractive to non-native house sparrows and starlings. The **striped sunflower seed** is also

Table 1.
Relative Use of Selected Seeds by Common Feeder Birds

	Sunflower	Thistle	Peanut Hearts	Canary	Millet	Fine Corn
Cardinal	2	-	-	-	-	-
Chickadee	2	-	-	-	-	-
Cowbird	-	-	-	1	2	-
Mourning Dove	2	-	-	2	2	1
House Finch	2	1	-	-	-	-
Purple Finch	2	-	-	-	-	-
Goldfinch	1	2	-	-	-	-
Evening Grosbeak	2	-	-	-	-	-
Grackle	-	-	1	-	-	1
Blue Jay	2	-	-	-	-	-
Nuthatches	2	-	-	-	-	-
Sparrows, native	2	-	1	1	2	1
House Sparrow	-	-	-	1	2	-
Starling	-	2	-	-	1	-
Woodpeckers	1	-	-	-	-	-

(2 = Use High; 1 = Use Moderate; - = Use Low or Not Eaten)

an excellent food, and the tufted titmouse and blue jay prefer it to the black oil sunflower seed.

If you want to attract goldfinches, nothing compares to **thistle seed (niger)**, which also attracts house finches and pine siskins (see **Table 1**). Cracked corn, wheat, milo (sorghum), rice, hulled oats, rapeseed, and flax, are relatively unattractive to most birds. Mixtures of these unattractive “birdseeds” are often sold in grocery stores. Check the ingredients on the label before you buy.

Peanut hearts are readily eaten by starlings. **Millet** and **canary seed** attract cowbirds and house sparrows. I choose not to offer peanut hearts and other small seeds even though they are also used by native sparrows. I’m still able to attract song sparrows, white-throated sparrows, juncos, and mourning doves who like the **black oil sunflower seeds**, but my feeders are less attractive to house sparrows, starlings and cowbirds.

House sparrows disrupt and sometimes kill nesting bluebirds and

tree swallows. Cowbirds lay their eggs in the nests of other birds (nest parasite). If you don't have house sparrow or cowbird problems you may want to offer smaller seeds. You should still choose small seeds that are attractive to most birds so that your seed doesn't end up wasted. **White proso millet** was reported to be the best small seed by the U. S. Fish and Wildlife Service.

Squirrels, chipmunks, rabbits, mice, raccoons, skunks, and deer will all eat birdseed.

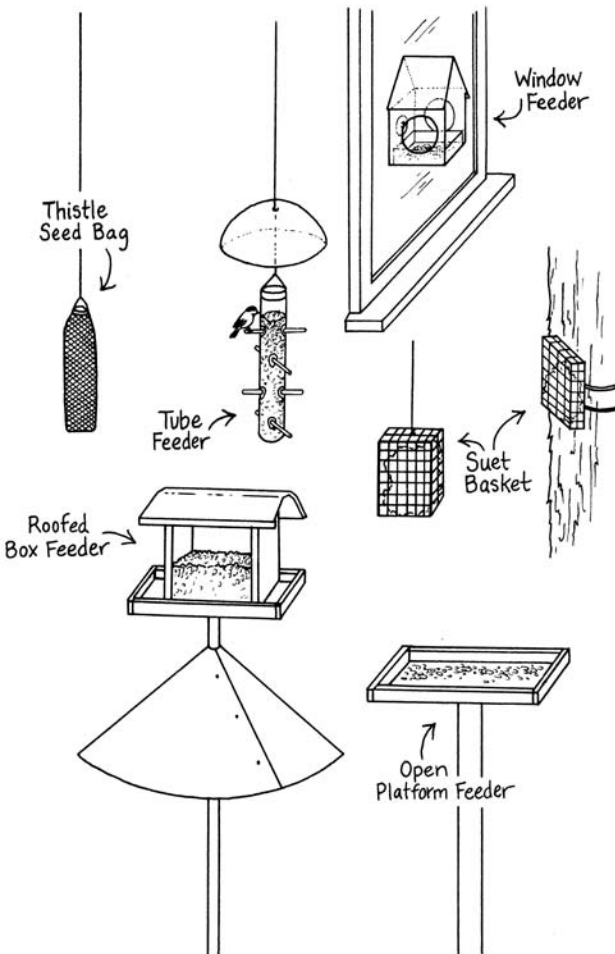
Suet and Other Fatty Foods

Suet is the hard fat around the kidneys of beef and sheep. It appeals to many winter birds. Downy, and the larger, hairy woodpeckers will take sunflower seeds (even from tube feeders),

but suet is what really brings them into backyards during winter. Black-capped chickadees, red-breasted and white-breasted nuthatches, blue jays, and starlings also like suet.

Suet is available at most grocery stores. It should only be offered in cool weather (October through May) to prevent the fat from becoming rancid. Hang suet well above the ground in a wire basket or mesh bag to prevent neighborhood dogs and raccoons from carrying it off.

Other fatty foods may be offered, and some are better than others.



Food

Avoid mixtures of bacon fat or peanut butter and seeds because seed eaters may end up with matted feathers from the grease. Some people mix equal portions of natural peanut butter and corn meal, which is not as greasy and less likely to stick to beaks. As with suet, you should hang these foods out of the reach of dogs and raccoons.

Birdseed Feeders

How you offer food can affect what birds you attract.

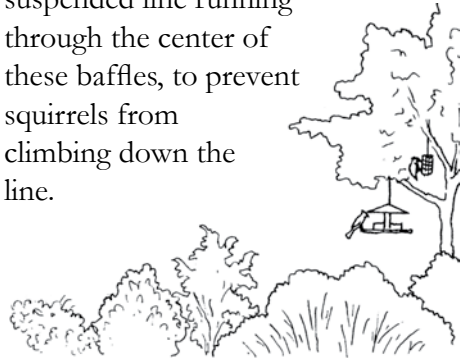
- ◆ Open platform feeders are preferred by some birds, including cardinals.
- ◆ Roofed box feeders will keep a supply of seed dry and available for many birds.
- ◆ Tube feeders give small perching birds like chickadees and finches an advantage. Some tube feeders are designed for thistle seed and have small holes so the seed doesn't spill out.
- ◆ Thistle seed bags work well but wear out.
- ◆ Feeders designed to attach to windows with suction cups or others that mount on window sills allow for close-up viewing.

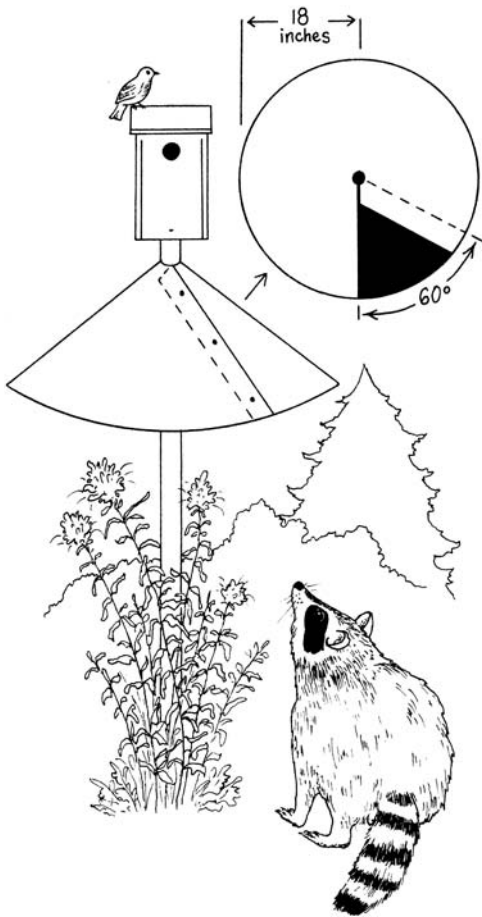
Seed can also be spread on the ground or other surface

Shields for Feeders and Nesting Boxes

Squirrels and other mammals can quickly empty your feeders so you may want to deter these guests. A metal cone shield around the post of my large box feeder prevents red and gray squirrels and raccoons from getting into it. The squirrels get plenty of food from the spill on the ground. Cone shields can also be used with platforms and tube feeders mounted on posts. Cone shields also protect nesting boxes from raccoons.

Attaching a trash can cover, inverted pail or other baffle on a pole running through its center (similar to cone shield), wrapping metal flashing around a thick post, and greasing a metal pole will also deter mammals, but these methods are not as effective as a cone. For hanging feeders an inverted plastic dome, plastic soda bottles, or other baffles can be attached above on a suspended line running through the center of these baffles, to prevent squirrels from climbing down the line.





A cone shield of 26 gauge sheet metal will ensure that raccoons and other climbing animals will not get into your nesting box or feeder.

Gravel and Eggshells

Birds lack teeth, so they must pick up sand or small gravel to grind their food in their gizzards (muscular part of bird stomach).

My gravel driveway gets a lot of activity from birds selecting the size gravel they need. You might try placing sand or small gravel in an open platform feeder to see if the birds will use it.

Birds also need calcium for eggshell formation, which they get from foods they eat. To help them meet this need you could save shells from chicken eggs, rinse, dry, and grind them up and offer them to the birds during spring or year-round. You can easily break shells into small bits by placing them in a bag and striking with a hammer or wooden spoon.

When to Feed the Birds

Feeding birds does not have to be only a winter activity. While some winter birds do leave our feeders in the spring for their northern summer homes and wild foods become more available with the warming weather, resident birds will use our feeders if we feed them.

You may not need to offer as much seed during spring and summer, but by feeding year-round, adults will be encouraged to bring their young into your backyard. They get a dependable food source and you get to see them.

By continuing to fill your bird feeders during spring and fall, you

Food

may entice migrating birds like white-crowned and fox sparrows to stop by for a few days before continuing their journeys. Your yard could provide an important way station for migrating birds worn out by the demands of their travels.

Birds that breed in Vermont but winter in warmer places can be attracted to our feeders during the spring and summer. **Bluebirds** will sometimes accept offerings of raisins and berries placed on open platforms.

You may be able to attract **rose-breasted grosbeaks** with suet, sunflower seeds, pieces of bananas, and orange slices in early spring. They will continue to eat sunflower seed through the summer and may bring their young to the feeder.

Beginning in May, **orioles** can be attracted with orange halves. You can offer these in suspended feeders where you “spear” the orange on a sharpened dowel or on open platforms. Orioles will also drink the nectar from hummingbird feeders until June when caterpillars and other insect foods become more available.

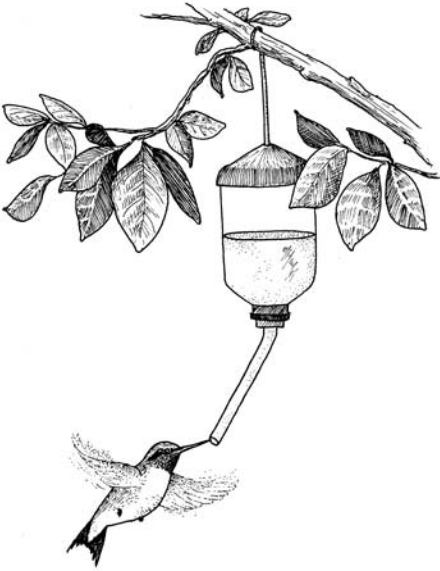
When feeding birds for the first time or after a long absence, it may take several weeks for the birds and squirrels to realize that food is

available at your feeder. Be patient. Eventually a bird will locate and use your feeder. Once a single bird finds your feeder it will attract others.

Hummingbirds

I have good success attracting **hummingbirds** to my nectar feeder from May through September. To make your own nectar mix 4 parts water with 1 part sugar, which is the maximum recommended concentration. Don't use honey because a fungus harmful to hummingbirds may grow. The color red attracts hummingbirds, so most feeders have some red parts. Commercial hummingbird mix may be colored red, but I advise against coloring any nectar you mix yourself to avoid any chance of contamination.

You can buy various large and small hummingbird feeders, some of which look like several red flowers ringing a nectar reservoir. My feeder is a simple suspended bottle with a glass tube inserted through the rubber stopper. I hang my feeder in a small tree surrounded by flowers where I can see it from my nearby gazebo. I coat the wire attaching the feeder to the branch with mineral oil which blocks access to crawling insects. A bee guard prevents the



Hummingbirds can be attracted to a mixture of 4 parts water to 1 part sugar.

wasps and bees from draining the nectar.

You should clean and refill your feeder with fresh nectar on a regular basis to prevent bacterial growth in the sugar solution. I refill mine every few days and give it a washing with hot water and soap when a black film becomes apparent. A large nectar feeder may be more of a problem if you don't refill it frequently, which would allow bacteria more time to grow. By using boiling water to mix your nectar you can further limit the growth of bacteria and

fungus, but be sure the mixture has cooled before offering it to the hummingbirds. You can store unused nectar in a refrigerator for future use.

Food Plants

Many plants are important food sources for wildlife. Eight of the best native food plants are cross-referenced with 13 common backyard birds and mammals in **Table 2**. Use this chart as a quick reference guide, but remember that other plants are also valuable sources of food for wildlife.

Large Trees

Pine cones contain seeds savored by nuthatches, crossbills, pine siskins, pine grosbeaks, and squirrels. I often find piles of shucked cones, which resemble corn cobs after the red squirrels have been feasting on pine seeds. Beechnuts and acorns (found on **beech** and **oak** trees) are eaten by many animals, including turkeys and black bears.

My property lacks mature seed-bearing **oaks**, so there is no natural supply of acorns. However, my children and I often return from outings with our pockets full of acorns for our chipmunks. We have lots of fun leaving the acorns on the deck and woodpile and seeing how

Food Plants

Table 2.
Selected Native Food Plants and Some Animals that Eat Them

	Dogwood	Blackberry	Cherry	Grape	Sumac	Red Cedar	Pine	Oak
Birds								
Bluebird	*				*			
Cardinal	*	*		*	*			
Catbird	*	*	*		*	*		
Purple Finch	*		*			*		
Evening Grosbeak	*		*					
Pine Grosbeak	*	*					*	*
Robin	*	*	*		*	*	*	
Cedar Waxwing	*	*	*		*		*	
Mammals								
Chipmunk	*	*	*				*	
Red Squirrel			*				*	*
Gray Squirrel	*						*	*
Rabbit #	*	*	*		*			*
Raccoon		*			*			*

rabbits browse on stems and low branches

long it takes “chippy” to find them. My father offers peanuts with the shells on to his squirrels, blue jays, and tufted titmice to make up for his lack of oaks.

The buds, flowers, and “helicopter” seeds of **maples** are eaten by evening grosbeaks. Siskins eat **hemlock** and birch seeds. Purple bird droppings are a sure sign that **black cherries** have ripened in the treetops. The buds and catkins (flower clusters lacking petals)

of **aspens** are relished by ruffed grouse. My family enjoys watching these football-sized birds working the outer branches of a nearby grove.

Smaller Trees

Eastern redcedar (really a juniper) seeds are eaten by cedar waxwings, bluebirds, yellow-rumped warblers, purple finches, robins, mockingbirds, sapsuckers, and pine and evening grosbeaks. **Apples** attract grouse,

deer, red fox, raccoons, and squirrels. I've watched small flocks of pine grosbeaks descend on ornamental **crabapple** trees in winter to feast on their seeds. Cedar waxwings feed on **hawthorns**, which look like apple trees with thorns. The **mountain ash** has fruit that persists through the winter and is eaten by cedar waxwings and pine and evening grosbeaks.

A small tree I'm very fond of is the **serviceberry** (also called **shadbush**), which flowers when

shad run up the Connecticut River in the spring. Its delicate white flowers attract early butterflies like the spring azure. Its fruits ripen in June (earning it yet another name, **Juneberry**) and are eaten by robins, orioles, hermit thrushes, catbirds, and cedar waxwings.

Large Shrubs

A shrub/tree that is much undervalued is the staghorn sumac. It has upright, red fruit clusters and fuzzy stems that resemble deer



Oak trees provide a very important wildlife food: acorns.

Food Plants

antlers in velvet. Sumacs grow well in old fields and disturbed areas, including vacant city lots. The fruit of this plant is available through the winter and for migrating birds returning to Vermont in the spring. I'm thrilled each spring when bluebirds drop from the sky into my patch of sumacs. Along with the birds listed in **Table 2**, hermit thrushes and flickers feed on sumac. Crows eat sumac berries too; look for them in the tops of sumacs along roadways in late winter.



Staghorn sumac berries are an important Wildlife food because they are present during the winter and early spring when other wild foods are scarce.

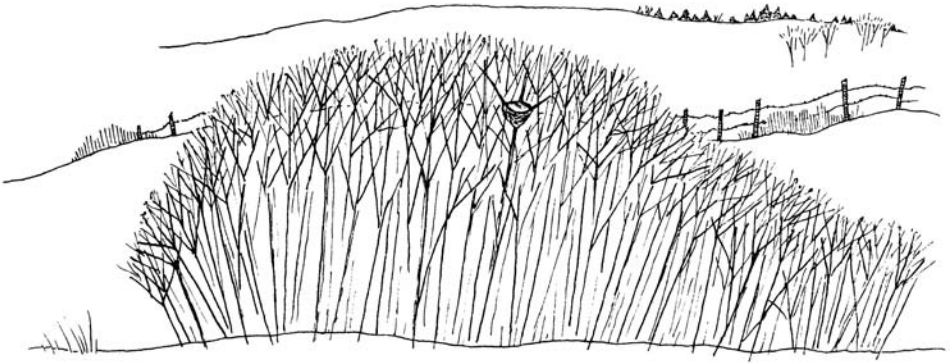
Chickadees, redpolls, siskins, and goldfinches feed on **speckled alder** catkins and seeds. The female catkins look like tiny pine cones. Woodcock frequent alder thickets because the wet soils are good places for them to probe for earthworms. **Choke cherry** produces fruits in July, and birds feeding in its branches are easily viewed.

Smaller Shrubs

Silky dogwood is an important berry producer and helps to stabilize streambanks. It's very common in roadside ditches and its reddening stems offer hope of spring in late winter. I've had excellent luck transplanting this shrub as a colorful foundation planting that attracts the birds. A similar shrub, **red-osier dogwood**, is also attractive to wildlife.

The clustered stems of **gray-stemmed dogwood** look like little islands in meadows. It provides food and important nesting sites. Other good berry producing shrubs include **elderberry**, **blueberry**, **huckleberry**, and the **viburnums** (**arrowwood**, **nannyberry**, and **mapleleaf viburnum**).

Pussy willow flowers attract a multitude of bees and other insects.



Gray-stemmed dogwood creates a brushy mat that looks like a meadow island, produces many white berries used by wildlife, and provides good nesting cover for birds.

One of our earliest butterflies, the mourning cloak, overwinters as an adult and its spring larvae (caterpillars) feed on pussy willow leaves. The larval viceroy butterfly overwinters on willows in a leaf case it constructs. Yellow warblers gather the cottony down around willow seeds for nest building.

Brambles and Vines

Brambles (**blackberries** and **raspberries**) provide food for many animals including orioles, veerys, wood thrushes, mockingbirds, thrashers, raccoons, chipmunks - - and maybe an occasional wood turtle. Vines provide wildlife food too. In addition to the animals in

Table 2, grouse, hermit and wood thrushes, and skunks also feed on **grapes**.

Virginia creeper, another vine, produces a fruit eaten by flickers, robins, wood thrushes, and mockingbirds. Three different sphinx moths (myron, pandorus, and white-lined) feed on the Virginia creeper plant in mid-summer as caterpillars.

Grasses and Wildflowers

Non-woody plants (such as grasses and wildflowers) are valuable sources of food for wildlife, too. Many sparrows eat **grass** seeds.

Sedges (the stems have edges and triangular seeds) are also eaten by a

Food Plants



Catbirds feed on grapes, use its bark to construct nests, and sometimes nest within the cover of grapevines.

variety of sparrows as well as snow buntings.

Sheep sorrel (sourgrass) and **curly dock**, both common lawn weeds, are browsed by rabbits, and sparrows and redpolls eat their seeds. Rabbits also eat **plantain**, yet another common lawn weed.

Clover flowers attract bees, and rabbits eat the plants.

The **dandelion**'s showy yellow flowers also attract bees, and goldfinches eat the seeds.

Goldfinches love **thistle**, and their late nesting is timed so that the young are produced when the seeds of many wildflowers are maturing. I always let the thistles grow, but sometimes I transplant them (dig deep to get the taproot) to get them out of the path of tender human feet.

Sunflowers are another food plant that I semi-cultivate. I move sprouts from seeds dropped by the birds to my vegetable garden. One year I planted a large area with sunflowers. I enjoyed both their large showy flower heads all facing in one direction and the acrobatics of the jays and chickadees as they extracted the seeds.

Monarch butterfly caterpillars feed on the **milkweed** plant and the sweet clusters of pink flowers attract monarch and other adult butterflies. You might find middens (storage piles) of milkweed seeds stored away by mice.

Pigweed (amaranth) and **lamb's quarters (goosefoot)** are often found in cultivated areas, and sparrows and redpolls feed on their abundant seeds.

Goldenrod dominates old meadows, provides great color in early fall, and attract bees and other insects.

I mow several feet on either side of my gravel driveway until June, then

let the wildflowers take over. The **chicory** and **evening primrose** are probed by goldfinches for seeds, and I've had as many as 40 birds rise into the air as I drive or walk down the driveway. The tall, **white sweet clover** and **black-eyed susans** attract bees, butterflies, and other insects. Thick swaths of **Queen Anne's lace** also attract butterflies.



Goldfinches feed on wild thistle seeds late in summer.

Food Plants

Butterfly Gardening

Entire books have been written about gardening for butterflies, and space does not allow a thorough discussion in this booklet. If you maintain a flower garden and have flowering plants like **lilacs**, you are probably

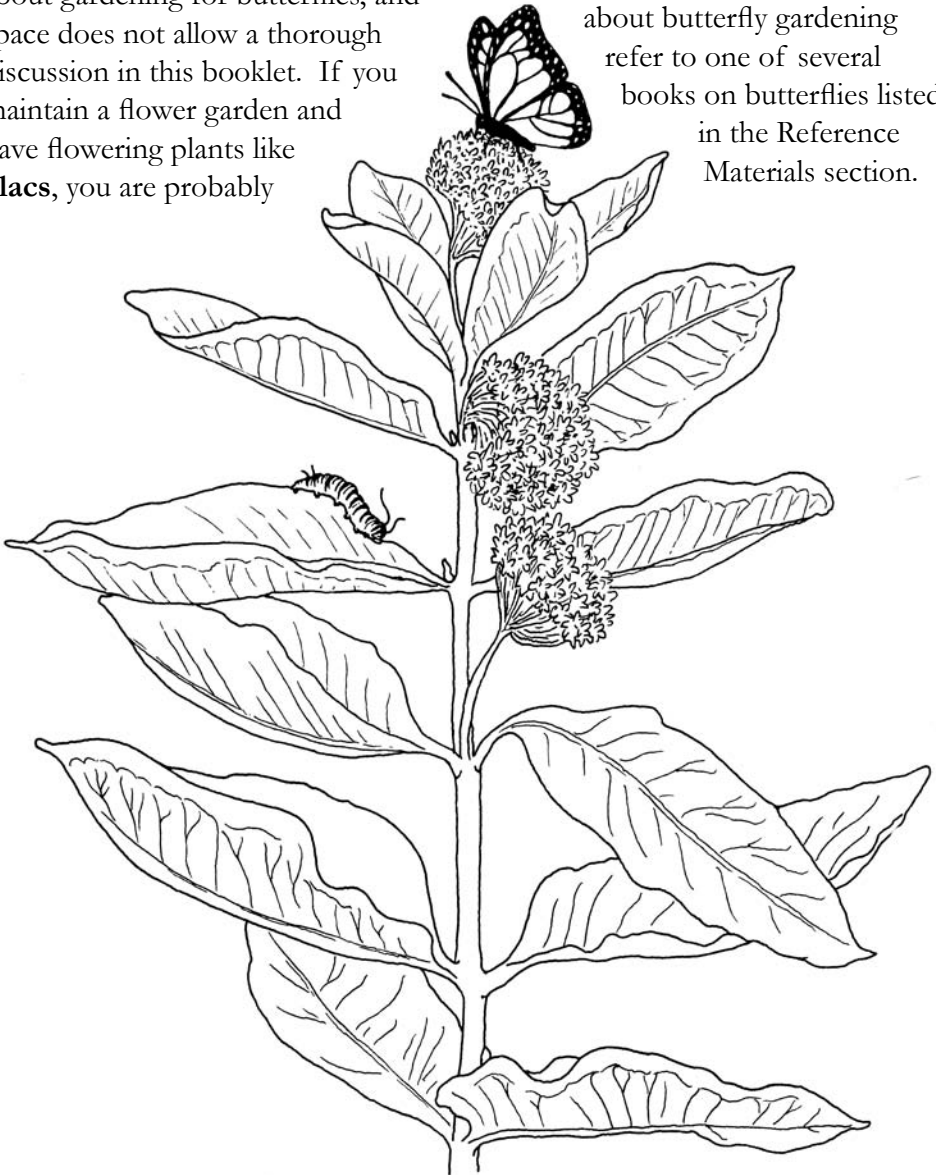
attracting butterflies already.

Different plants attract different

butterflies. To learn more about butterfly gardening

refer to one of several

books on butterflies listed in the Reference Materials section.



The monarch butterfly is distasteful to birds because it feeds on the milkweed plant as a caterpillar.



Plants that Attract Hummingbirds

Cardinal flowers with their vibrant red spikes and **jewelweed** with orange flowers are both found in wet areas and are frequently visited by hummingbirds. Jewelweed is also called **touch-me-not** because its seed pods have an organic spring that explodes on contact and scatters the seeds. (My children and I never miss an opportunity to help disperse jewelweed seeds.)

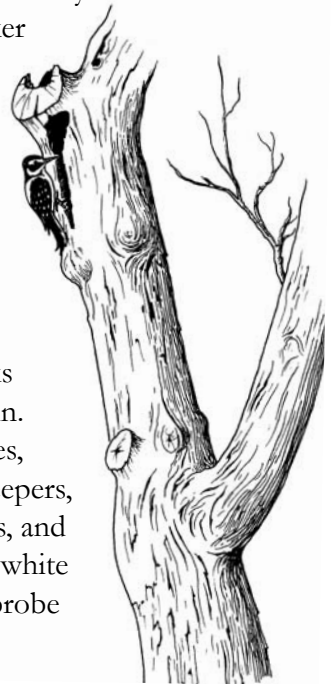
Cultivated flowers, especially those which are red, also attract hummingbirds. I've watched hummingbirds feed on **impatiens**, **beebalm**, **hollyhocks**, **weigela**, **fuchsia**, and even dark purple **iris**. The clear-winged sphinx moth is a wonderful little creature whose rapid wing beats and stout body makes it look like a miniature hummingbird as it visits some of the same blooms in my wife's perennial garden.

Dead Trees and Other Insect Food

Birds and mammals feed on insects, and dead trees can enhance your yard's value to wildlife. Hairy and

downy woodpeckers regularly extract insects from the trunks of dead elms near my house. On several occasions the large pileated woodpecker has hammered away at these same trees. If you don't have any dead trees, consider installing one as a landscape feature. Some friends and I once dragged a 6-foot section of dead tree to their backyard. The woodpeckers loved it, and so did we for the good viewing opportunities it provided.

The small downy woodpecker will also search for insects in wooden fence posts and even rigid plant stalks like mullein. Nuthatches, brown creepers, chickadees, and black and white warblers probe



Woodpeckers feed on insects found in dead and dying trees. Try leaving standing dead trees for wildlife in your backyard.

Water

trunks and branches for insects. Other warblers glean insects from the surface of leaves.

Some warblers and flycatchers capture insects in the air (hawking) and the eastern phoebe (a flycatcher) captures cluster flies and other insects under the eaves of my house. Sometimes yellow-rumped warblers will do this also. In open habitats, bluebirds may use your yard trees and rain gutters as perches while searching the lawn for insects.

Some insects eat other insects, and are welcomed in our backyards. You may see praying mantises patrolling your yard and gardens for insect prey. Ladybugs (ladybird beetles) feed on aphids.

Water

Birdbaths and Other Shallow Water

Providing water is simple to do and may be the most important addition to your yard for attracting wildlife. A shallow pan is all that is needed. Even an overturned frisbee or garbage can lid will do.

The water depth should be 2 inches or less so that small birds attracted to the water can stand in it. A very shallow section of a birdbath or partly submerged stone allows

insects to use the water too. On hot summer days as many as 100 honeybees will be sipping water from my birdbath.



The most important value of birdbaths is that wildlife have a ready supply of drinking water.

Although birds do bathe in birdbaths and other shallow waters, it is the need for drinking water that is most critical for birds and other wildlife. Keeping a water source close to the ground will allow ground-dwelling animals as well as birds to use the water. Chipmunks regularly use my birdbath.

Consider offering more than one water source—one elevated and one at ground level. Dripping water attracts animals; a leaking pail or hose can be suspended above a birdbath. Commercial misters,

drippers, and fountains are also available. By providing a nearby perch you will attract birds to land at the birdbath.

Try to place birdbaths about 10 feet from a tree with branches or other cover, so that small animals can flee to safety if threatened. You should avoid placing a bath in an area with dense shrubbery that can easily hide a cat or other predator.

Keep Your Water Wet (Unfrozen)

Unfrozen water is difficult to find during the winter. You may see birds dropping into your rain gutters to drink sun-melted water. If you provide water during the winter, wildlife will use it. Change your water often so that the birdbath has water, not ice. Freezing water can crack birdbaths and you might want to switch to an inexpensive pan for the winter.

I solved my winter birdbath needs by purchasing an electric birdbath heater. It cost less than \$50.00 and has served me and the birds well over the last half dozen winters. The heater turns itself off once the water is warmed or if the bath is dry, which conserves energy. It only

costs pennies per day to operate and I never noticed the difference it made in my electric bill. **Don't use antifreeze in birdbaths** because it will kill birds and other animals.

Pools to Ponds

Garden pools are excellent backyard habitat features for wildlife and you may even attract frogs and turtles. I hand dug a 6-foot wide by 4-foot deep pool which soon attracted frogs, raccoons, and even deer. You can purchase pool kits to add these features to your yard.

A stream, especially one that flows year-round, is extremely valuable and should attract many types of wildlife. By leaving buffer strips of native vegetation along streambanks, you will help prevent erosion and provide travel lanes for wildlife.

Don't overlook temporary pools (called vernal pools). Frogs and



Vernal pools provide habitat for frogs and salamanders to mate and deposit their eggs without the treat of predation by fish.

Water

salamanders seek out vernal pools in the spring to mate and deposit their eggs. The temporary pools are especially important because fish predators that would eat the eggs are absent.

Swales, seeps, and other wet areas are also important. Try to preserve these natural drainage features on your property.

You may want to build a pond if you have the space. Please get professional advice first because construction of ponds can damage wetland and stream habitat important to wildlife, disrupt water flow, and may fail to hold water. If you do have a pond, it will be more attractive to wildlife if you don't mow the shoreline, allowing trees, shrubs, and tall grasses to grow.



Many animals can not reach the water in a raised birdbath, but a ground level water source is available to all wildlife.

Cover

Cover for wildlife includes shelter for nests and young animals, secure resting areas, travel lanes that provide concealment, protection from the weather, and areas to escape to when threatened. A tangle of blackberries, overhanging branches, tall grass, and a nesting box are all examples of cover.

Nesting Boxes

Nesting boxes are a type of wildlife shelter that provides cover for wildlife nesting and roosting. Although usually associated with birds (“bird houses”), nesting boxes are also used by other wildlife. I once discovered a spring peeper (frog) in a nesting box. See the bluebird nesting box design and dimensions on **page 22**. Modify these dimension using **Table 3** to build boxes for other animals.

Insects commonly use nesting boxes. Spiders always move in and paper wasps can become a nuisance. If not removed, wasps may completely fill the box with their nest. On cold mornings the wasps are numb with cold and can be swept out with a stick or handful of grass. Bee boxes and baskets serve as nest sites for honeybees. You can even construct boxes to help some

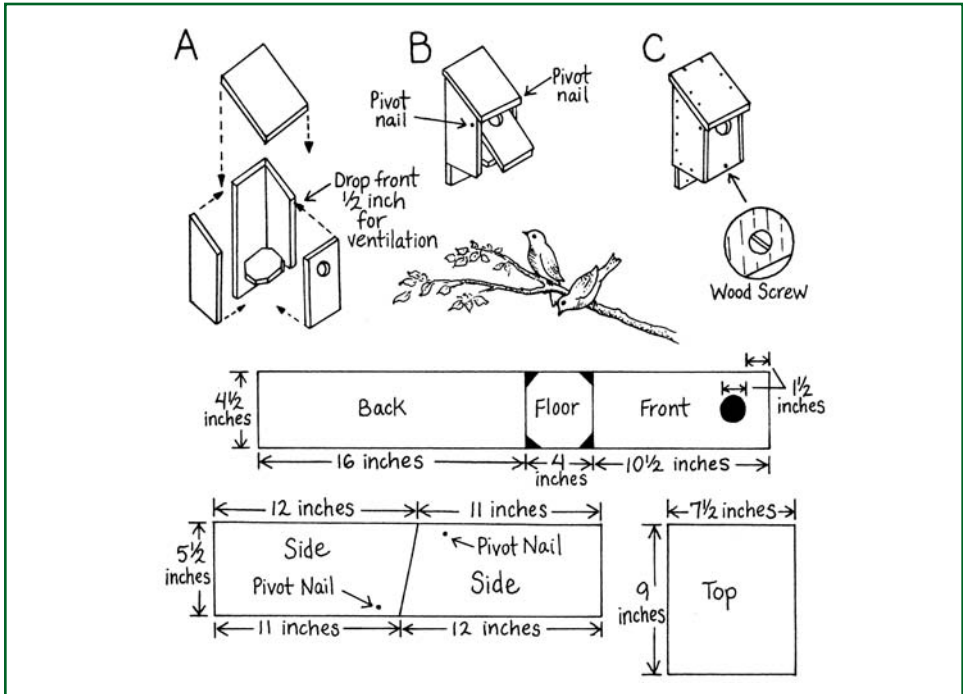
butterflies survive the winter as adults or pupae.

Box design and location determine what species will use your nesting box. **If you want to attract bluebirds**, use a box with a 1 1/2-inch diameter hole, place it on a post about 5 feet above ground in a meadow or other opening 1 acre or larger in size, and at least 30 feet from a woods’ edge or brushy area.

Flying squirrels will enter nesting boxes in or at the edge of woods and may use them on a regular basis. Wrens will be attracted to boxes near brushy areas and may “throw” eggs of other birds out of the box. Raccoons eat birds and eggs, and may disturb boxes along brushy fence lines, hedgerows, and other travel lanes. (Refer again to the drawing on **page 7** for a predator shield design that will deter raccoons.)

A 1 1/2-inch diameter hole will prevent the larger starling from using the box. The pesky house sparrow may be a problem. Monitor your boxes closely to thwart their nesting attempts. Perches are not needed and actually are a problem because competing birds use them as platforms from which to harass the nesting birds.

Cover



Bluebird/swallow nesting box design

1. Use 3/4-inch or thicker wood for strength and insulation.
2. Provide good ventilation because the sun really heats up a box (drilled holes are usually not adequate).
3. Cut corners of the floor so any water that gets into your box will drain out.
4. Scratch or make shallow saw cuts beneath 1 1/2-inch entrance hole on the inside to help young birds climb out.
5. Never paint or stain the inside of a nesting box because it could harm the birds.

The tree swallow is one of my favorite birds, but it may compete with bluebirds for nesting boxes. By placing two boxes 10 to 20 feet apart you can often accommodate both birds.

Purple martin apartment houses (especially white, metal houses) or nesting gourds can attract colonies of this large gregarious swallow. However, purple martins may prove difficult to attract to your location.

Table 3.
Wildlife Nesting-Box Dimensions

Animal	Entrance Diameter (inches)	Entrance to Floor (inches)	Floor Dimensions (inches)	Height to Ground (feet)	Habitat
Bluebird	1 1/2	6 to 8	4x4 to 5x5	5	open
Tree Swallow	1 1/2	6 to 8	4x4 to 5x5	5	open
Chickadee	1 1/8 to 1 1/2	6 to 8	4x4 to 5x5	5	woods
House Wren	1 to 1 1/2	6 to 8	4x4 to 5x5	5	brush
(1-inch high by 2-inch wide slot aids nest building with twigs)					
Great Crested Flycatcher	2	6 to 8	6x6	15	wood edge
Flicker	2 1/2 to 3	14 to 16	7x7	15	wood edge
(fill box with sawdust)					
Kestrel (Sparrow Hawk) ¹	3	9 to 12	8x8	15	edge/open
Screech Owl ¹	3	9 to 12	8x8	15	woods
Flying Squirrel	3	9 to 12	8x8	15	woods
(may use bluebird/swallow box with 1 1/2-inch entrance if placed at woods edge, but larger box needed for nursery)					
Wood Duck ²	(3 high	18	10x12	10	over/near water
Common Goldeneye ²	by 4 wide	18	10x12	10	over/near water
Hooded Merganser ²	oval)	18	10x12	10	over/near water

¹put 2 to 3 inches of wood chips in box

²put 3 to 4 inches of wood chips in box

Their nesting in Vermont appears to be restricted to open areas near Lake Champlain (most nesting within 20 miles of the lake).

Nesting shelves for eastern phoebes are popular and may also be used by robins. An open shelf

Note: for more information about purple martins, contact the Purple Martin Conservation Association, 301 Peninsula Dr., Suite 6, Erie, PA 16505
<http://purplemartin.org>

Cover

about 6 inches square is all that is required if located in a sheltered location (under a roof overhang; in a barn). Phoebes often nest on outdoor light fixtures and door frames. A roof can be added if more protection is needed.

Bat Boxes

Bat boxes are becoming more and more popular as daytime shelters for these flying mammals. We have 9 different bat species in Vermont; 6 of these hibernate and the other 3 migrate for the winter. Vermont bats eat a lot of insects, and catch them in the air as do swallows -- but bats work the night shift.

Bat boxes need to be placed in an area away from people and pets, in a location that takes advantage of the sun's warming rays. Some bats in Vermont use attics and metal-roofed structures that do not cool down as quickly as small bat boxes. To encourage bats to use boxes, try using thicker wood, tighter

construction, larger size, and a dark-colored exterior that should help keep the boxes warm. Bats aren't shy about moving into urban areas. I shared a porch with a few **little brown bats** (their actual name) when I lived in Burlington.

Buildings, Barns and Wildlife

Have you ever turned over a flagstone and found a toad? Sometimes we create attractive spots for wildlife by accident.

For several years robins have successfully nested in my garden gazebo. They have also attempted to nest on my children's play equipment and the rain gutters. I once discovered a weasel nesting in my well house.

The area under my tool shed provides shelter for chipmunks during warm weather and juncos during winter. The shed sits on top of cement blocks and is a few inches above a gravel base, which creates a safe, snow-free environment. It provides protection from the weather and ready access to gravel needed by birds to grind their food.

Barns are favorite haunts for barn swallows who build their nests on the sides of beams and walls. A single nail is all they need to anchor

Note: To receive a brochure about bats contact the Vermont Fish & Wildlife Department, 103 South Main Street, Waterbury, VT 05671-0501. 802-241-3700 / email: fwinformation@state.vt.us www.vtfishandwildlife.com

Plants and Natural Materials

their nests. Barn owls, although rare in Vermont, also use barns. I was once lucky enough to see a kestrel (sparrow hawk) flying to its home in the attic of an apartment building in Colchester. Cliff swallows build their tubular mud nests under the eaves of buildings, including my brick office building in Waterbury. As I look out my window right now there is a gray squirrel sunning itself on the window sill.

Nesting Material

You can also provide nesting material for wildlife. Small twigs, pieces of grass, short pieces of yarn, hair, and fur can be left out where wildlife will find them. It's fun to see if our offerings are accepted. You might even get to see the birds and squirrels carrying off these materials.

Plants and Natural Materials as Cover

Trees, Shrubs, and Grasses

Cedars and other dense evergreen conifers such as pine, spruce, hemlock, and fir are excellent cover for small animals. I have observed numerous songbirds emerging from thickets of these trees on cold winter mornings after

spending the night huddled within their protective boughs.

Blackberries and **raspberries** offer nesting cover for birds and escape cover for rabbits. Tangles of **grape** vines also provide nesting areas for birds and protective cover. Cardinals, catbirds, purple finches, flying squirrels, and even goldfinches use grape bark for nesting material.

The thick cover of **gray-stemmed dogwood** always seems to hold a bird nest or two, but I only notice them after the leaves have fallen and nesting is completed. Birds that nest in this shrub include chipping sparrows, goldfinches, catbirds, yellow warblers, and red-winged blackbirds.

Trees, shrubs, hedgerows, grasses, and wildflowers all provide cover as travel lanes for wildlife. I've seen cottontail rabbits 5 feet off my driveway partly hidden in their **grass** tunnels.

Lookout Perches

Trees and shrubs are important lookout perches for animals. Birds and squirrels will often look over the feeders in your yard from a safe perch before coming in for a meal. Cardinals often do this from several different perches before settling in to feed. I anchor a dead branch

Plants and Natural Materials

near my feeders, and many birds and squirrels use it as a perch. If threatened, they dart back to the protective cover of trees and shrubs. You might want to reuse your evergreen tree after the December holidays as a perch by placing it outdoors about 10 feet from your feeders.

Protection from Predators

Overhanging vegetation can provide cover from danger above. I have witnessed the survival value of **silky dogwood/wild grape** cover as a sharp-shinned hawk tried repeatedly and unsuccessfully to grab a blue jay that had ducked into a tangle 10 feet behind one of my feeders. Dense brush that is easily penetrated by a chipmunk or other small animal can stop a pursuing cat or dog.

Dead and Hollow Trees

Cavities in live and dead trees are the natural nesting sites we try to mimic with nesting boxes. Decay and the efforts of woodpeckers create natural cavities used by many creatures. Some hollow trees are used by generations of porcupines or raccoons.

Trees sheltering animals within their trunks and branches are called **den trees**. The larger the tree the more



Trees with cavities provide wildlife with a home. Flying squirrels might be living in a hollow tree in your backyard. You might not know it because flying squirrels are active at night.

types of wildlife it might harbor. Standing dead trees (**snags**) are excellent perch sites and may also be den trees.

By leaving den trees and snags you will enhance your backyard

Plants and Natural Materials

for wildlife, but you should also consider the risks to people and your home if such a tree should fall. Some areas of your yard probably pose less of a risk than others.

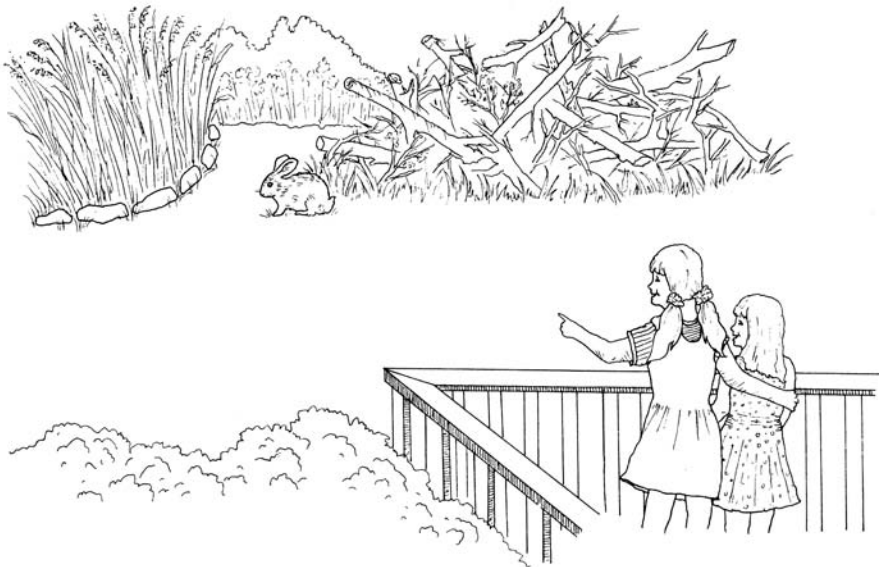
I'm fortunate to have a large dead pine with a honeybee hive. Our gardens are well pollinated and the open branches are a great place to observe birds, especially when the surrounding trees are in full leaf.

Stumps can be thought of as short snags. They shelter animals above and below the ground. As stumps decay, the root systems become tunnels with the exposed stump serving as the front door to the

underground burrow. Stumps are also used as feeding areas and offer a wider view for small animals like chipmunks that may scramble up to survey their world.

Fallen Trees, Brush Piles and Stone Walls

When a tree falls it is still valuable to wildlife. The decaying trunk offers concealment, a travel lane, and perhaps a den site. The decaying tree absorbs and retains water, which creates a moist habitat favored by salamanders. The larger the tree the longer it will provide value to wildlife. Firewood piles may provide similar habitat.



The safety of a nearby brush pile may make wildlife easier to view because they feel more secure.

Developing Your Backyard

Brush piles attract wildlife and are easy to construct. When cutting limbs or trees, clearing brush, or disposing of last year's holiday evergreen tree, don't haul the debris away to a landfill or burn it—pile it. Juncos, sparrows, chipmunks, and rabbits take advantage of these safe havens and you may even discover a newborn fawn hiding in a brush pile.

Piles of rocks, rocky outcrops, and stone walls provide secure den sites, travel corridors, and escape cover for wildlife. These habitat features can tie the landscape together in a manner similar to hedgerows. My mother-in-law has a stonewall that is used all summer by chipmunks and all winter by red squirrels as they travel back and forth from their dens to her feeder.

Developing Your Backyard

Consider What You Already Have

We are very fortunate to have many kinds of wildlife throughout Vermont. Even our most densely settled villages and cities have wildlife close at hand. As you ponder what you might do with your backyard (whether it is a couple of acres, a 1/4-acre lot, or a small patio area), consider what

already exists. No space is too small to attract wildlife.

When planning your backyard wildlife habitat consider how the plants and other habitat features -- grasses and flowers, trees, stone walls, brushy thickets, swampy areas -- that already exist serve the needs of wildlife. The native plants that have made your backyard their home are likely to be well suited to the soil and moisture conditions and hardy to Vermont winters.

If you are having a house built, convince the contractor to leave as much of the natural vegetation as possible. This is especially important along streams and other waterways to prevent erosion. The existing plants are likely to have value to wildlife. Once you move in you can take your time selecting what should stay and what should not. You may still want to plant trees, shrubs, and other plants that you purchase from a nursery, but taking the time to evaluate the plants already in your backyard will be well worth the effort.



Developing Your Backyard



How you choose to landscape your yard will determine how attractive it will be to wildlife.

An Example from the Suburbs

When I was 4 years old, my family moved to a new house in the suburbs and the backyard was a jungle -- or so it seemed to me. Unfortunately, we proceeded to thin the trees, trim the tangle, and haul away the vines to make way for a carpet of grass. Luckily, a bit of wildness remained nearby on the adjoining farm property in the form of a spring and a huge old maple tree with many hollows used by squirrels and raccoons.

My father enjoyed feeding the birds even back in 1957, but it was not

until 1975 that I convinced him to let the wild things reclaim a small portion of his 1/2-acre lot. It made a lot of sense. The grass never grew well under the trees anyway and the mowing eliminated plants that were suited to the site. Once the mowing stopped we discovered that the seeds already in place sprouted, including the offspring of a black cherry tree that had been cut down years before.

The variety of trees was increased by transplanting a few small trees from a not so nearby woodlot. And the birds helped by dropping seeds they had eaten elsewhere in the

Developing Your Backyard

neighborhood. I had planted a line of spruce tree seedlings as part of a boy scout project. Those that had survived close calls with our lawn mower are now large. Many of the birds visiting my father's feeders now roost in the protective cover of the spruce hedge. My father's ornamental crabapple trees have matured and now produce large quantities of fruit, which provides his backyard wildlife with food.

An Urban Example

When I was in college I lived in a city apartment house with a backyard measuring 30 feet by 30 feet. A large boxelder tree filled most of this space and enlarged the small yard vertically, bringing birds and squirrels right up to my third floor balcony. Without that one tree the yard would have had less usable space and would have been much less attractive to wildlife. If you're a 4 1/2-inch chickadee, a 60-foot tree is the equivalent of a 120 story apartment complex...a lot of living space!

A line of brush connected the backyards of all the houses on my block. Cardinals and chickadees moved up and down this 150-foot city hedgerow for the entire neighborhood to enjoy. The telephone lines served as song

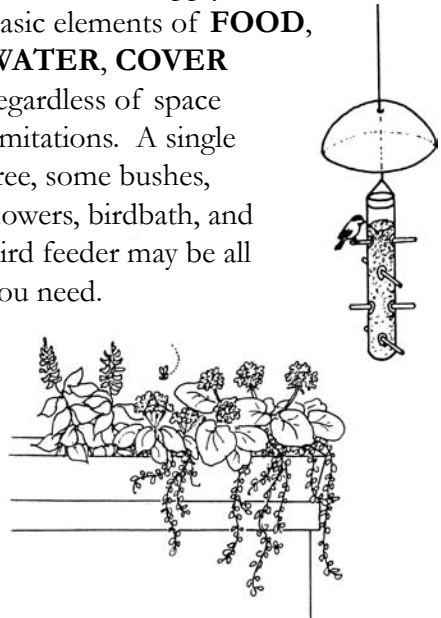
perches for house finches anxious for spring and were safe pathways for gray squirrels to avoid cars and dogs.

If you have a small yard you can still attract wildlife. Potted plants and small flower gardens can be used to attract

butterflies. Hummingbirds will visit hanging plants such as **fuchsia**.

You can still supply the basic elements of **FOOD, WATER, COVER**

regardless of space limitations. A single tree, some bushes, flowers, birdbath, and bird feeder may be all you need.



Observing Wildlife

By observing the wildlife already using your yard, you may learn how to improve it. If catbirds seem to frequent a thicket, there is a good chance that an enlarged area or second thicket will do more of the same. If chipmunks and squirrels

Developing Your Backyard

seem always to be on or in the stone wall, extending the wall or adding a second wall will increase the activity. If cardinals and other songbirds disappear into the protective cover of cedars or pines, more evergreen conifer trees will add more usable cover. In winter, observing tracks of animals may help you understand how wildlife is using your backyard.

The National Wildlife Federation's Backyard Wildlife Habitat Program (www.enature.com/backyardwildlife/nwf_bwh_home.asp) and Cornell Laboratory of Ornithology's Project FeederWatch (www.birds.cornell.edu/pfw/) have forms that help people record information about backyard wildlife in a useful and systematic manner. I personally keep a nature journal by making short entries in an engagement calendar as I observe things I find noteworthy. This proves to be a handy reference, for I find myself checking past years' notes for arrival dates of birds and when I can expect to see wildflowers in bloom.

Designing Your Backyard for Wildlife and You

Landscaping and gardening blend well with efforts to attract wildlife. A diversity of habitat patches ranging from woodland to orchard,

meadow, garden, and lawn may accommodate more wildlife and more viewing opportunities than one habitat alone. And you can incorporate your outdoor activities into your wildlife design.

My family really uses our backyard. My wife loves to work in her flower gardens, and our children use their outdoor play equipment. We coexist with the wildlife and enjoy their presence, but we don't avoid going outdoors out of fear of scaring the animals. What we do is modify our behavior when we want to get a better look at what the animals are doing. Children become genuinely interested in backyard rabbits, chipmunks, and "chickadeedeedes" and learn how to view wildlife without startling them. As the animals get to know you they will learn that your presence is generally not threatening to them.

If you are considerate of wildlife in your backyard they may come to seemingly ignore your presence. There are limits. If you approach too closely they will flee, but will soon return. When filling your feeders your presence may actually attract wildlife. The trees may fill with finches, and chickadees and nuthatches may land on the feeder before you are even finished.

Developing Your Backyard

Birds Hitting Window

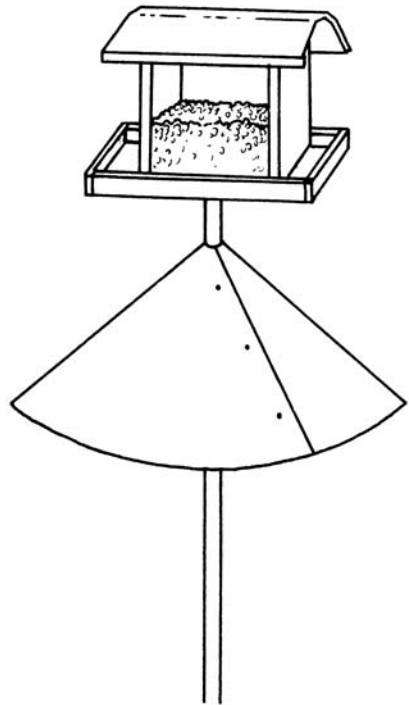
Sometimes birds fly into windows, becoming stunned or even killed. If you notice this is associated with a particular feeder, you might try moving its location. Feeders 4 to 10 feet away from windows cause the most problems as birds flush off a feeder, pick up speed, but don't have enough reaction time to avoid a window. You can attach silhouettes of hawks to the outside of windows or otherwise break up reflections (hang streamers). Fine netting can be hung in front of windows to catch birds before they hit.

What You Can Do In Your Backyard

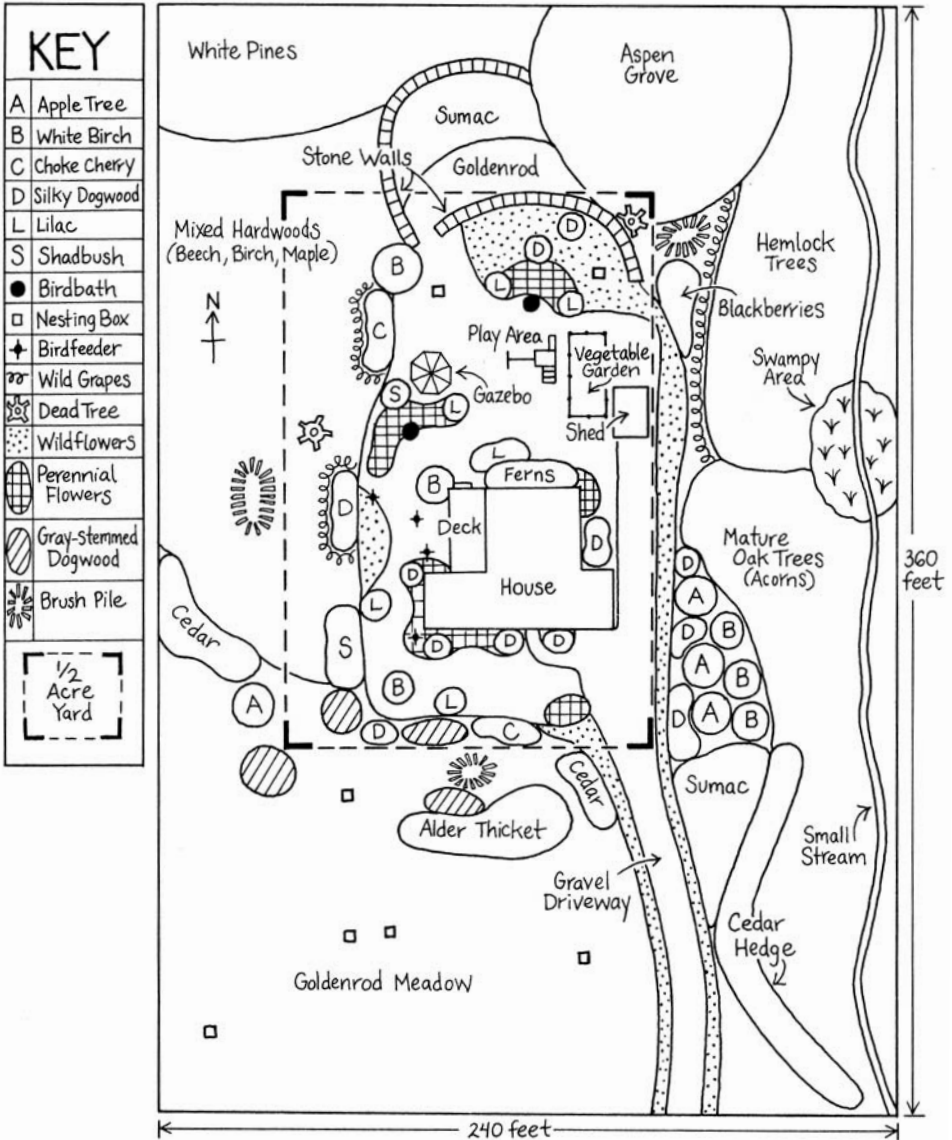
This booklet has provided a lot of information on **FOOD**, **WATER**, and **COVER**. Now it is up to you to design an outdoor space so that the animals will feel secure moving through and around your yard and provide you with the opportunity to observe them. Don't feel that you need to do everything. Do what makes sense in your backyard and appeals to you. A few simple improvements may be all you need to greatly enhance your backyard for wildlife.

Feeders and Baths: Choose good seed and place feeders and baths 10

feet from trees and escape cover. Remember that dense ground cover under or near feeders and baths can place animals on or near the ground at risk of attack by mammal predators. Feeders should either be right at your window or 15 or more away to limit window strikes. Separate feeders so that wildlife move between feeders. There will be less crowding, smaller birds will have more opportunity to feed, and hygiene is improved. There is no one correct distance but I suggest 15 feet or more, if possible, as a guideline for separating feeders from other feeders and baths.



Developing Your Backyard



The backyard wildlife habitat design above illustrates ideas you might be able to adapt to your backyard.

Developing Your Backyard

Avoid Problems: Hang feeders and shields at least 4 feet above the ground or snow pack to keep squirrels and other unwanted animals out of feeders and nesting boxes. Keep feeders and nesting boxes away from overhanging or nearby branches or other surfaces from which an unwanted mammal may leap.

Landscape: Plants that provide food, nesting sites, and escape cover for wildlife should be added to your backyard if they are missing. Flowers will attract bees and butterflies, and don't require a lot of space. Leave seed heads on flowers so that they will stand above the snow and be available to the birds through the winter. Add features like brush piles and hedgerows that provide cover. Retain some dead trees if they are not a safety problem and add nesting boxes.

Design Your Space: An animal that might hesitate to cross a 200-foot strip of lawn might readily cross if creative plantings narrow the opening or provide islands of protective cover. If you have enough space, let some areas grow wild. Some open space is good and lets you more easily observe the wildlife in your backyard. An open perch or two will also provide some viewing opportunities.

There is no single correct backyard wildlife habitat design. Different ideas may work for you. One possible design is shown on **page 33**. Although featuring a 2-acre parcel, components of this design can be adapted to smaller areas. Whether you control a large or small parcel of land, it can be successfully managed for wildlife. Brackets within the diagram set off the most intensely managed portion of the design (1/2-acre; about 120 x 180 feet).

The use of fences, walls, and planted screens can create a natural space even within a densely populated area. Consider working with adjoining landowners to enhance your neighborhood for wildlife. Your backyard wildlife habitat doesn't need to be fancy -- just adequate. Whatever your situation, remember the essential elements of wildlife habitat: **FOOD, WATER,** and **COVER**. If your backyard provides these elements and is a relatively safe place for wildlife, you'll be successful attracting wildlife.



Maintaining Your Backyard

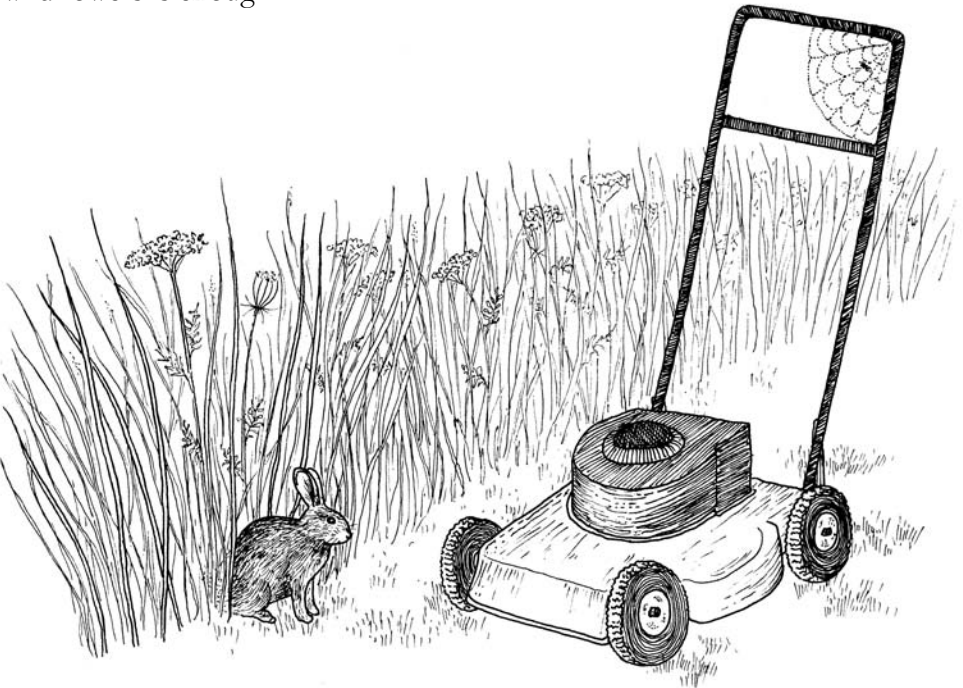
Maintaining Your Backyard Wildlife Habitat

Seeding, Mowing, and Cutting

To allow wildflowers to grow you can turn the soil and sow seeds. Commercial wildflower mixes are available or you could gather wild seeds. Another approach is to mow the area once a year to prevent woody plants from taking over. If persistent flowering plants like goldenrods are desired, hand cutting woody stems every few winters after the snow has knocked down wildflowers is enough.

If more wildflowers are desired, mow several times then stop in June to allow chicory and other flowers that do well in disturbed sites to mature. A naturalized lawn will have many flowering plants such as clover, gill-over-the-ground, and dandelions that can be mowed.

To keep an area brushy you will need to cut out trees periodically so they don't shade the shrubs. This can be done selectively, tree by tree as they begin to dominate the shrubs (when about 3 inches in diameter). Another method is to completely



Not mowing lets wildflowers and grasses used by wildlife grow.

Maintaining Your Backyard

cut a portion of the brushy area every few years and let the roots sprout. Don't cut the entire area at the same time as this will eliminate brush habitat for at least one season.

Warning: Avoid extensive cutting and mowing of previously uncut areas from April through September to protect nests and young animals. Woodcock begin nesting in April and goldfinch may still have young in the nest in September.

Moving Trees and Shrubs

Left alone, most land in Vermont would revert to forest. This process (natural succession) can be quickened by planting desired trees if they have not seeded in naturally. Some important wildlife plants may be absent from your backyard, and planting them may be the only reasonable option.

If moving trees and shrubs (**always get permission first!**), select smaller specimens. These will have a smaller root ball and will be stressed less than a large plant. A 3 to 5-foot tree generally has a 12 to 18-inch root ball and can be quite heavy.

Move plants in the spring before buds open or in the fall when dormant (after frost but before ground freezes) to improve your chances of success. Many good gardening books are available and nursery professionals can provide advice.

I trim the roots by slicing the ground around a tree or shrub a week or more before transplanting so that the tree will recover somewhat before I move it. By limiting root damage you will increase the chance of the plant's survival. Prevent the plant from drying out during the move, and water it until it is established in the new location.

Moving trees and shrubs is a lot of work and is not always successful. You should select common plants that grow in an area similar to where you wish to move them. A plant growing in a shady moist site probably won't survive in a dry open area. Know what you are moving and select healthy specimens. Fill in holes you make and avoid damage to surrounding plants.

Nursery-grown trees are readily available, and larger specimens can be moved. Vermont nurseries have plants used by wildlife, and some nursery staff are knowledgeable

Being Responsible

about the relative wildlife value of selected plants. Your local Conservation District may also be a good source of advice. When possible select native species.

Being Responsible

Dangers of Collecting Wildflowers

Transplanting wildflowers may place wild populations at risk and the specimens you move may not survive. Never transplant rare, threatened, or endangered plants. If you are not sure of a plant's identification do not attempt to move it. Overcollection of native plants can be a problem in Vermont. Many native wildflowers are available from nurseries, and buying plants may be the best action.

Non-native Animals and Plants

Beware of introducing species of wild animals and plants that are not native to Vermont (sometimes called exotics). Native animals and plants can be harmed by the exotics. Examples include:

- ◆ House sparrows and starlings, introduced from Europe, now disrupt the nesting attempts of native birds.

- ◆ Purple loosestrife and Japanese and tartarian honeysuckles crowd out native plants.



These pink lady's-slippers almost always die when transplanted. Enjoy them in the wild so they may live.

Global Warming and What You Can Do*

Global warming has been linked to the buildup of CO₂ and other heat-trapping greenhouse gases in the earth's atmosphere, causing the rapid increase in the earth's average surface temperature.

Being Responsible

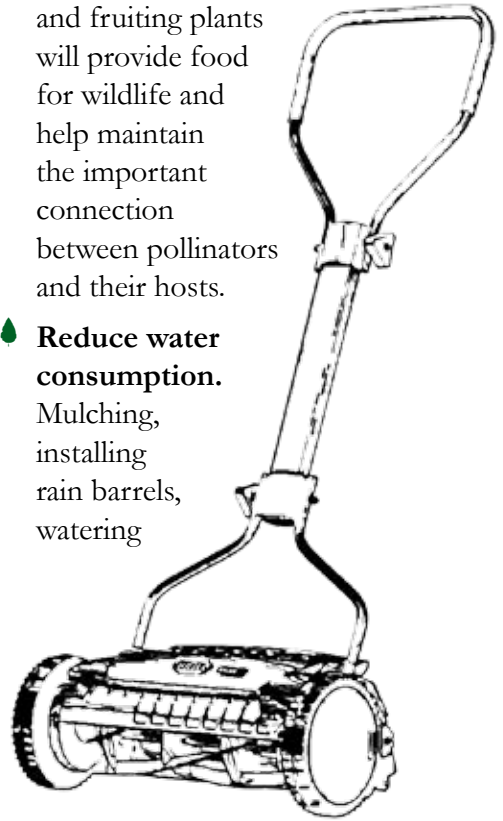
Changing average temperatures and precipitation patterns due to global warming is a serious threat to native plants and animals. Invasive, nonnative plants and animals will expand their range by outcompeting native species, while growing conditions for many native plants may become unsuitable in much of their historic ranges.

Climate changes caused by global warming will also present new challenges for gardeners. But there are simple actions you can take in your own backyards to help reduce your contribution to global warming including:

- ◆ **Improve your energy efficiency.** Reduce your household's electricity consumption by replacing regular outdoor and indoor light bulbs with compact fluorescent bulbs, installing outdoor automatic light timers, and purchasing solar-powered garden products.
- ◆ **Reduce the use of gasoline-powered yard tools.** Use electric-powered or human-powered tools such as push mowers, hand clippers, and rakes instead of gasoline-powered lawn mowers, weed eaters and leaf blowers. Consider replacing

some of your lawn with low-maintenance groundcover or a native wildflower patch.

- ◆ **Reduce the expansion of invasive species.** Remove invasive plants from your garden and plant native alternatives.
- ◆ **Incorporate a diversity of native plants into your landscape.** A diverse range of native blooming and fruiting plants will provide food for wildlife and help maintain the important connection between pollinators and their hosts.
- ◆ **Reduce water consumption.** Mulching, installing rain barrels, watering



Using human-powered push mowers instead of gasoline-powered lawn mowers help reduce greenhouse gases.

only in the morning and evening to avoid mid-day evaporation, and using drip irrigation are ways to reduce water consumption in your garden.

- ◆ **Develop a rain garden.** Reduce water pollution associated with heavy downpours by developing rain gardens, which capture stormwater runoff and help prevent it from entering local lakes and streams.
- ◆ **Compost kitchen and garden waste.** Composted kitchen and garden waste is an excellent nutrient source for your garden, reducing the need for chemical fertilizers.
- ◆ **Plant lots of trees to absorb carbon dioxide.** As a tree grows to maturity, it can absorb and store as much as a ton of CO₂, the greenhouse gas primarily responsible for global warming. Planting trees near your home can protect your home from the hot sun in the summer and cold winds in the winter, reducing energy use for air conditioning and heating.
- ◆ **Get Involved.** Work together to ensure your community, town, state and nation take substantive actions at all scales to address

the threats imposed by climate change.

**(adapted from National Wildlife Federation's The Gardener's Guide to Global Warming)*

When to Stop Feeding

- ◆ If natural foods are abundant and the weather is mild, eliminating food at your feeders will have little effect on wildlife.
- ◆ If natural foods are scarce, the weather cold, and wildlife have come to depend on your offerings of food (a likely set of circumstances in Vermont during winter and early spring), then eliminating food at your feeders could have a very negative effect.
- ◆ If you are going away for an extended period during winter or early spring, consider having a neighbor fill your feeders for you.
- ◆ If leaving for several days, fill all your feeders and load up a large roofed feeder to keep food available.
- ◆ If you need to stop feeding, do so gradually over several weeks to help wildlife make the transition to foraging elsewhere.

Being Responsible

Preventing Disease

- ◆ Keep feeders, birdbaths, and nesting boxes clean to help prevent disease that can affect wildlife.
- ◆ Periodically empty residue from feeders and clean with soap and water.
- ◆ Rake up and dispose of dropped seed that has accumulated beneath feeders.
- ◆ Change water in birdbaths often and brush clean when residue is apparent.
- ◆ Clean nesting boxes out at least once a year. I check mine after nesting in the fall and again in early spring prior to nesting.

Cats and Dogs

Cats kill many small animals like songbirds and baby rabbits, and



Cats, including pampered pets, kill songbirds and other small animals.

dogs kill animals as large as deer in Vermont. If you intend to attract wildlife, reasonable efforts should be made to make your backyard a relatively safe place for wildlife. Some possible solutions in mixing pets and wildlife include:

- ◆ Keep pets indoors, leashed, or fenced.
- ◆ Discuss problem animals with their owners.
- ◆ Modify your choice of future pets.

Poisoning

If you can't find alternatives to pesticides such as moth balls, mouse and rat pellets, herbicides, and insecticides and other poisons, use these products sparingly and only according to directions on the label. Many products you can purchase are extremely toxic to children, wildlife, pets, and you.

- ◆ **Read the label before you buy the product.**
- ◆ **Antifreeze should never be left in an open container. This “sweet” fluid can attract mammals (including children), with deadly results.**

Other Risks to Wildlife

- Avoid attracting wildlife to areas where they might be likely to cross busy roads and be at risk of being struck by a car.
- Electric bug zappers kill many non-target moths and other harmless insects.



Leaving Wildlife Wild

In general, it is a good policy to leave all wild animals alone and enjoy them from a distance. State and federal laws prohibit the possession of wild animals as pets. Most wild animals do not do well in captivity because they are adapted to living in the wild, and we usually lack the skill to care for them.

You may come across young animals and think that they are orphans. This is usually not the case. Fawns have little scent so that predators won't find them and female deer leave their young alone while they go off to feed.

Waterfowl nests are sometimes located in cover far removed from water, and the ducklings must travel from the nest site to water after hatching. You may see a lone duckling that is headed for water. If you interfere, you may actually cause the animal harm. Predators

Returning a baby bird to its nest is one of the few times touching wildlife is acceptable.

may follow your scent to the young animal or your very presence may cause the animal stress.

Animals that Need Help

If you find an animal that is injured or one you are sure is orphaned, licensed wildlife rehabilitators may be able to assist you. For more information contact your nearest Vermont Fish and Wildlife Office.

At some point you might find a young bird that has tumbled out of a nest and is otherwise in good shape. Adult birds will still feed young birds on the ground, but they are at greater risk of being found by predators. Returning baby birds to their nests, if feasible, can aid their survival.

An alternative is to place a fallen bird in an open box or basket and

Being Responsible

hang it in a tree where the adult birds will see it. Briefly touching a young bird will not cause an adult bird to reject it. This is an exception to the rule about not touching animals and should not be interpreted as meaning touching birds is okay — **in most situations it is NOT a good idea to touch birds.**

When Wildlife Get Annoying

In time you may find that some of your backyard wildlife have annoying habits. My wife is not overly fond of the woodchuck grazing in her flower garden. The rabbit prunes some of our bushes a little too closely. I view these situations as challenges and tests of my willingness to coexist. I have fenced our vegetable garden and some small trees and shrubs. I'm told that a low-strung electric fence is very effective protection for gardens.

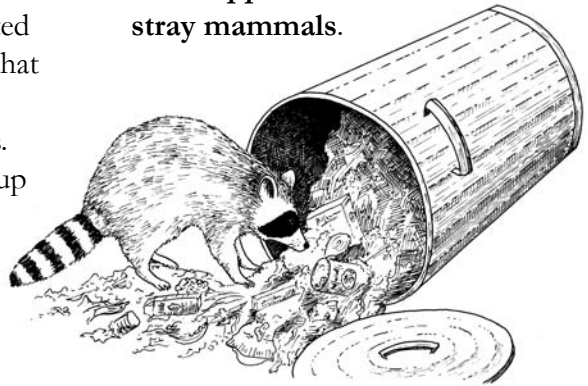
If you encounter wildlife-related problems, consider solutions that exclude or discourage animals before taking drastic measures. Skunks or raccoons may take up residence under your porch or in your garage because these areas are dark and quiet. Try using bright lights

and loud music to convince them to leave.

A raccoon feeding on dropped birdseed or fruit in your compost pile may discover that what you store in your garbage cans is tasty, too. If you have a problem with raccoons, cut off their food supply. Try placing your trash in an animal-resistant container, latched box, or shed that they can't open. Turn over your compost pile and lime it, or stop adding to it. Place feeders on a post with a large tray that catches dropped seed, and use a predator cone shield so that raccoons can't get to it.

Rabies

Don't leave meat scraps, bread, and pet food outside because they may attract raccoons, foxes, and skunks, as well as neighborhood cats and dogs. All these animals can become a nuisance. **You should never approach wild and stray mammals.**



Wildlife and You

Medium-sized wild animals can inflict serious wounds and may transmit rabies and other diseases. Avoid physical contact, especially with raccoons, skunks, foxes, stray cats and dogs, woodchucks, and bats. These animals represent about 95% of animals diagnosed with rabies in the U.S.A. If you have questions about rabies call **1-800-4-RABIES**.

Wildlife and You

I hope you will find that this booklet is useful for your backyard wildlife experience. In today's fast-paced world it is soothing to look out the window and be reminded that birds still sing in the morning and that squirrels and chipmunks still frolic in the sunshine. Remember that you too can share in life's simple pleasures.

The Nongame and Natural Heritage Program (NNHP) studies and manages many species of wildlife that are not fished, hunted, or trapped. Peregrine falcons and ospreys are once again nesting in Vermont, and our knowledge of some often overlooked creatures—small mammals, frogs, insects, and freshwater mussels—is increasing. With your help, future generations will also enjoy Vermont's natural heritage.

More than half of the NNHP budget is provided by citizen donations to the Nongame Wildlife Fund. Over 5,000 donations, averaging over \$16.00, are made to Vermont's Nongame Wildlife Fund every year. These dollars made the creation of this booklet possible.

To make your contribution to the Nongame Wildlife Fund,

- donate when filing your state income tax form (give part or all of your refund or add a contribution to your payment),
- purchase a conservation license plate,
- donate when buying a fishing or hunting license,
- or send a donation directly to:

Nongame Wildlife Fund

Vermont Fish & Wildlife Department
103 South Main Street, 10 South
Waterbury, VT 05671-0501



Backyard Wildlife Contacts

All about Birds

www.birds.cornell.edu/AllAboutBirds/

Audubon Vermont

255 Sherman Hollow Road
Huntington, VT 05462

(802) 434-3068

email: vermont@audubon.org

www.vt.audubon.org/

Chapter info:

<http://vt.audubon.org/chapterList.php>

Green Mountain Audubon Center:

<http://vt.audubon.org/centers.html>

Bat Conservation International

P.O. Box 162603, Austin, TX 78716

publisher of BATS Magazine

www.batcon.org/home/contact.asp

Birds of Vermont Museum

900 Sherman Hollow Road,
Huntington, VT 05462

publisher of Chip Notes

www.birdsofvermont.org/

Botanical and Bird Clubs, Inc.

www.vtbb.org/about.htm

Federated Garden Clubs of Vermont

publisher of Vermont Leaf

www.gardencentral.org/fgcv/homepage/

National Wildlife Federation

11100 Wildlife Center Dr, Reston VA 20190

1-800-822-9919 or email info@nwf.org

www.nwf.org/backyard/

Project FeederWatch

Cornell Laboratory of Ornithology

159 Sapsucker Woods Road

Ithaca, NY 14850

Toll free: (877) 741-3077

email: feederwatch@cornell.edu

www.birds.cornell.edu/pfw/

Purple Martin Conservation Association

301 Peninsula Dr., Suite 6

Erie, PA 16505

<http://purplemartin.org>

Vermont Association of Conservation Districts

4510 East Hill Road, Craftsbury, VT 05826

802-586-7589

http://vacd.org/conservation_districts.html

Vermont Association of Professional Horticulturists

P.O. Box 92, N. Ferrisburgh, VT 05473

www.vaph.org

Vermont Center for Ecostudies

PO Box 420, Norwich, VT 05055

www.vtecostudies.org

Vermont Coverts: Woodlands for Wildlife, Inc.

PO Box 81, Middlebury, Vermont 05753

www.vtcoverts.org/

Vermont ebird

<http://ebird.org/content/vt/about>

Vermont Entomological Society (insects)

www.vermontinsects.org

Vermont Institute of Natural Science

6565 Woodstock Road

Rte. 4, P.O. Box 1281, Quechee, VT 05059

www.vinsweb.org

Vermont Master Gardener

University of Vermont

105 Carrigan Drive, Hills Building

Burlington, VT 05405-0082

email: master.gardener@uvm.edu

www.uvm.edu/mastergardener/index.html

Vermont Rabies Hotline, 800-4-RABIES, also offers information about nuisance animals

Wild Bird-feeding Society

www.birdfeeding.org

Reference Materials

Most of these books are available at libraries or from bookstores.

General References

America's Favorite Backyard Wildlife, 1985 by K. and G. Harrison. Simon and Schuster, Inc. New York, NY.

America's Neighborhood Bats, 1988 by M.D. Tuttle. University of Texas Press, Austin, TX

The Beginning Naturalist, 1989 by G. Lawrence. New England Press, Hanover, NH

Gardening with Wildlife: The Official Backyard Habitat Planning & Planting Kit, National Wildlife Federation, 1412 Sixteenth St., N. W., Washington, D.C. 20036-2266.

Landscaping for Wildlife, 1987 by C.L. Henderson. State of Minnesota Bookstore, St. Paul, MN.

Woodworking for Wildlife, 1987 by C. L. Henderson. State of Minnesota Bookstore, St. Paul, MN.

Your Backyard Wildlife Garden: How to Attract and Identify Wildlife in Your Yard, 1992 by M. Schneck. Rodale Press, Emmaus, PA.

Birds

The Audubon Society Guide to Attracting Birds, 1985 by S. W. Kress. Chas. Scribner's Sons, New York, NY.

Backyard Bird Habitat, 1988 by W. Curtis. Countryman Press, Woodstock, VT.

Beyond the Bird Feeder: The Habits and Behavior of Feeding-Station Birds When They Are Not at Your Feeder, 1981 by J.V. Dennis. Alfred K. Knopf, New York, NY.

Hosting the Birds, 1989 by J. Mahnken. Storey Communications, Pownal, VT.

Songbirds in Your Garden, 1987 by J. K. Terres. Harper & Row Publishers, New York, NY.

Butterflies

The Butterfly Book: An Easy Guide to Butterfly Gardening, Identification and Behavior, 1991 by D. and L. Stokes and E. Williams. Little Brown.

The Butterfly Garden: Turning Your Garden, Window Box, or Backyard into a Beautiful Home for Butterflies, 1985 by M. Tekulsky. The Harvard Common Press, Boston, MA.

Butterfly Gardening: Creating Summer Magic in Your Garden, 1990 by The Xerces Society and Smithsonian Institute. Sierra Club Books.

Children's Books

Birdwise: Forty Fun Feats for Finding Out About Our Feathered Friends, 1988 by P.M. Hickman. Addison-Wesley Publishing, Reading MA.

The Curious Naturalist: A Handbook of Crafts, Games, Activities, and Ideas for Teaching Children About the Magical World of Nature, 1980 by J. Mitchell and The Massachusetts Audubon Society. Prentice-Hall, Englewood Cliffs, NJ.

Hands-On Nature: Information and Activities for Exploring the Environment with Children, 1986 by J. Lingelbach. Vermont Institute of Natural Science, Woodstock, VT 05091.

Sharing Nature with Children, 1973 by J. Cornell. Amanda Publications, Nevada City, CA.

Reference Materials

Global Warming

The Gardner's Guide to Global Warming
www.nwf.org/gardenersguide/Gardeners_Guide.pdf

The EPA GreenScaping Program
www.epa.gov/epaoswer/non-hw/green/owners.htm#why

Plants

Grow Native Shrubs in Your Garden, 1980
by F.M. Mooberry and J.H. Scott. The
Brandywine Conservancy, Chadds Ford,
PA.

*The Natural History of Wild Shrubs and Vines:
Eastern and Central North America*, 1981 by
D.W. Stokes. Harper & Row, Publishers,
New York.

Shrubs and Vines for Northeastern Wildlife by
J.D. Gill and W.M. Healy. Technical Report
NE-9. U.S. Forest Service, Broomall, PA.

Pesticides

The Chemical Free Lawn by Warren Schultz.
Rodale Press Books, 33 E. Minor St.,
Emmaus, PA 18049, (215) 967-5171.

Citizen's Guide to Pesticides, 1991 by
Environmental Protection Agency
(EPA). U.S. Government Printing Office,
Washington, D. C. Publication #1992-622-
330-1302/60089.



About the Author

Steve Parren was born in Hartford, Connecticut, received a Bachelor's of Science Degree in Natural Resources Conservation from the University of Connecticut, and worked on wildlife projects in Alaska and Washington State before moving to Vermont in 1979 where he earned a Master's of Science Degree in Wildlife Biology from the University of Vermont. Steve was the founding director of Bluebirds Across Vermont and he is presently the Coordinator of the Nongame and Natural Heritage Program within the Vermont Fish and Wildlife Department. He resides in Monkton, Vermont, with his wife Lauren and daughters Nora and Molly. Steve credits his interest in wildlife biology to his childhood experiences observing backyard wildlife.

Over twenty people commented on earlier drafts and assisted with editing, which greatly improved this booklet. Thank you. - SP

Central Vermont Public Service (CVPS) Statement of Principles



In January 1993, CVPS and the Vermont Fish & Wildlife Department formed a partnership with the purpose of implementing a Vermont Backyard Wildlife Habitat Project. The goal of this project is to enhance the appreciation and respect for Vermont's wildlife.

In May 1993, CVPS adopted a statement of environmental principles. Recognizing that the electric utility business affects the environment, CVPS acknowledges a responsibility to present and future customers, the company's employees and society to protect the environment in which we operate. We want to leave Vermont a better place for our children and grandchildren. As a result, CVPS will balance the often competing needs of environmental protection and reasonable, justifiable cost to our customers. Given this understanding, CVPS has adopted the following principles:

1. Natural Resource Management

We will strive to conserve the land, water, forests and other natural resources under our care and will also strive to:

- Use resources wisely
- Practice sustainable use of natural resources
- Encourage use of recycled materials and products

2. Electric Resource Management

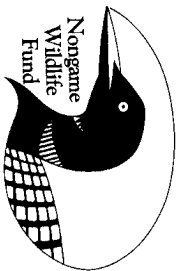
We will strive to:

- Advocate the use of cost-effective and energy efficient electric products and measures
- Seek an energy future that encourages energy efficiency, electric load management, cost-effective cogeneration and renewable resources
- Provide a reasonably priced resource mix that recognizes the need for diversity, reliability and stability which takes environmental impact into account

3. Pollution and Waste Management

We will strive to:

- Reduce the amount of waste we produce and recycle or safely dispose of the balance
- Take responsibility for any of our actions that have an undue adverse impact on the environment and take steps to correct or minimize them
- Identify and remediate significant harmful or hazardous situations on our properties, inform our employees and public about them and act to prevent their recurrence
- Use safe, non-toxic materials in our operations



FISH & WILDLIFE DEPARTMENT
103 SOUTH MAIN STREET, 10 SOUTH
WATERBURY, VT 05671-0501

