

Wild Bird Feeding Guide

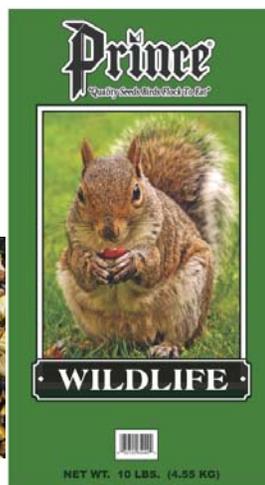
- HOW TO ATTRACT WILD BIRDS
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Attracting & Feeding Birds

HOW TO ATTRACT WILD BIRDS:

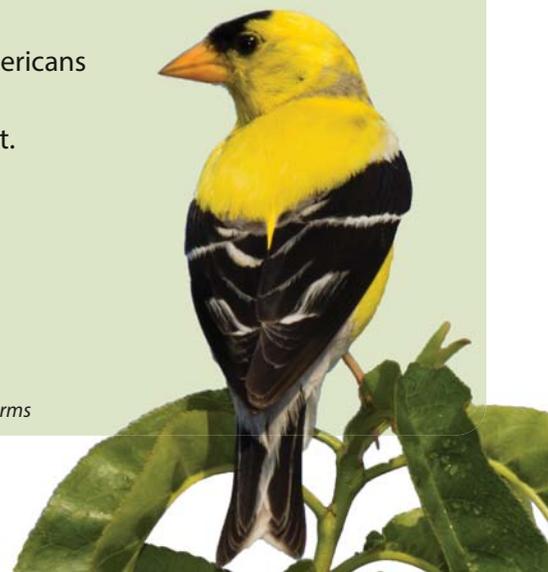
- Position feeders so they are visible from your window but not out in the open. Birds are shy creatures, so place feeders in an area that offers close cover, such as shrubbery or trees.
- Each season has its own bird varieties. Bird feeding is a year round hobby. By providing food, shelter, and water for birds year round, you'll see the largest diversity of bird colors and behaviors!
- Different seeds attract different birds. Start out with an all purpose mix, such as America's Favorite Elite. As you pick your favorite birds, a more selective bird food mix may be preferable.
- Wild Bird Care is often overlooked come winter. When the weather turns cold and harsh, birds' survival skills are put to the test. By providing clean bird food, shelter, and fresh, unfrozen water, your backyard will become a bird sanctuary all year long!
- Squirrels if you can't beat'em--feed'em! Today, many backyard bird feeding enthusiasts are also feeding the squirrels. There are many specialty feeds and feeders for squirrels (Prince Wildlife Formula). Place the feeder far enough away from bird feeders to deter them from disturbing your feathered friends.



DID YOU KNOW

- Backyard bird feeding is one of the fastest growing hobbies, second only to gardening.
- The typical backyard bird weighs less than two nickels.
- Backyard bird feeding is proven to be a great stress reducer & can add a positive note to your day.
- Birds may consume 20% of their body weight just to keeping warm enough to survive.
- Making water available may be the key to attracting birds to your backyard. Water is especially crucial in the winter months when most resources are frozen.
- Over \$2 billion is spent annually on bird feeding products; over 80 million Americans (1 in every 4 suburban households) regularly feed wild birds.
- Most all birds have an underdeveloped sense of smell and locate food by sight.
- About 1/3 of American adults feed wild birds.
- Bird feeding is second only to gardening as the country's favorite hobby.
- People always upgrade and buy new products for their hobbies.
- When purchasing a hobby product, price is not the main issue - quality is.
- Category growth will come from new and unique products.
- People will pay for convenience.

Source: Birdola/Metz Farms



GETTING STARTED

No matter where you live, you can put food outside your door, and some creature, feathered or furred, will show its appreciation and make an appearance. That's all it takes. Once you get started, it's hard to stop. Before you know it, you're learning bird names. After awhile, you'll start to recognize individuals and the messages in their behavior and song.

When you get to the point where you want to attract and "keep" a particular species, what you do will be determined by where you live, and the time of year. For example, on any winter day, you're likely to see a cardinal at a sunflower feeder in Virginia, a goldfinch at a nyjer (thistle) seed feeder in Massachusetts and hummingbirds at a nectar feeder in southern California.

How can you find out which birds to expect? A bird field identification book has pictures of different birds and will help you find the names for the birds you're likely to see.

BUYING BIRD SEED

Bird seed mixes are blends of various agricultural crops - black and striped sunflower seed, sunflower meats, milo, corn, millets, safflower, nyjer (thistle) seed and others. These ingredients are blended to either attract a wide variety of birds or a specific species of bird.

Ingredients vary in cost and the price of a particular mix is determined by the percent of each ingredient included in the mix. Likewise, birds indicate a preference for some seeds over others. So, while the price of a particular mix may seem attractive, value can be lacking if the birds do not consume part of the mix because of seed preference or discard part of the mix as waste.

Every bird seed mix will list the ingredients in the mix in descending order by percentage. This list will be found on the package or on a tag attached to the package. The tag will also list percentages of protein, fat and fiber available from the mix. *See sample tag to the right.*

While price is certainly an important criteria for purchasing bird seed, it is more important to look at value represented by your bird seed purchase. Decide on the type of birds you want to attract and provide the seed preferred by those birds. Then decide how much waste you are willing to tolerate. There are bird seed mixes which are totally consumable by birds and leave little or no waste. While these no waste products are more expensive per pound, they may ultimately represent the best value for the reasons mentioned above.

Bird feeding has become the nations second largest backyard hobby. Becoming familiar with the type of bird seed mixes available in the market place today can only enhance you bird feeding experience.



Prince® Original Wild Bird Food

GUARANTEED ANALYSIS:

Crude Protein (min).....	8.50%
Crude Fat (min).....	4.75%
Crude Fiber (max).....	5.50%
Moisture (max).....	12.00%

INGREDIENTS

White Millet, Corn, Milo, and Black Oil Sunflower.

Preferred Species: Chickadees, Jays, Cardinals, Titmice, Finches, Nuthatches, Towhees & Woodpeckers.

Preferred Feeders: Hopper, Tube Feeders, Large Hole, Platform.

Allergen Statement: The ingredient label on this product accurately reflects the contents of this package added by design. This product is processed, packaged and/or stored in facilities that also may process, package and/or store peanuts, tree nuts of all types, wheat, eggs, milk products and soy, and thus may also contain particles of one or more of those ingredients.

Store in a Cool Dry Place.



Manufactured by:
Prince® Corporation
Marshfield, WI 54449

Net Weight 40Lbs./18.18 Kg
Item 0016710



What is in the Seed?

INGREDIENT	MIXES IT'S USED IN
<p>CANARY GRASS SEED: Golden yellow, sharp shiny seeds. A staple in many of our seed mixes. It provides the necessary fiber & carbon for heat and nitrogen for strength.</p>	<p>America's Favorite: Gold Finch Mix and Elite Mix Nature's Select: Finch's Feast Prince: Finch Mix Also sold as a straight ingredient.</p>
<p>CORN: Good source of Vitamin A, Vitamin B-Complex and a small amount of Vitamin C. Helpful for emaciation and constipation. Also sold as a straight ingredient. A good general body building food.</p>	<p>America's Favorite: No-Waste Mix, Good Friend Mix, Cardinal Mix, Elite Mix and Classic Mix Prince: Premium Mix, Supreme Mix, Original Mix & Wildlife Mix</p>
<p>FLAX SEED: Flat, brown, slippery seeds also known as linseed. Contains high fat which aids in adding luster to plumage during molting.</p>	<p>America's Favorite: Gold Finch / Small Bird Mix Also sold as a straight ingredient.</p>
<p>MILLET SEED: Small to medium oval seed. Millet is either golden yellow, light yellow or red. Mid-range protein and fat. The high fiber in millet aids in digestion. Also available hulled. Also sold as a straight ingredient.</p>	<p>America's Favorite Mixes: No Waste, Good Friend, Elite, Preferred, Classic, Goldfinch and Hulled Millet Nature's Select: Finch's Feast Prince Mixes: Premium, Supreme, Original, Wild Finch & Cardinal</p>
<p>NYJER SEED (THISTLE): Small black stick-like seeds. A source of protein and fat. Aids in prevention of egg binding.</p>	<p>America's Favorite: Elite Mix and Gold Finch Mix Nature's Select: Finch's Feast Prince: Finch Mix Also sold as a straight ingredient.</p>
<p>OAT GROATS: Medium light brown, oblong seeds. The oat kernel is one of the most complete in amino acids and Vitamin B-Complex. Primarily used for body heat and fattening.</p>	<p>Prince: Wildlife Formula</p>
<p>PEANUTS: Good mineral content. Fat/protein combo makes this a very valuable food for underweight or weak birds.</p>	<p>America's Favorite: No-Waste, Elite and Preferred Nature's Select: Fruit & Nut, Backyard Gourmet, Woody's Goody Blend, Insect Indulgence, & Cardinal Prince: Premium and Wildlife Also sold as a straight ingredient.</p>
<p>PUMPKIN SEED: A high fiber source of protein which contains Vitamins A and B, iron and phosphorous. Aids in digestion and prevents constipation.</p>	<p>Nature's Select: Woody's Goody Blend</p>
<p>RAISINS: High in Vitamin B, potassium and iron. Helps in building up the heart and prevents anemia.</p>	<p>Nature's Select: Fruit & Nut Mix, Insect Indulgence, & Cardinal</p>
<p>RAPE SEED: Tiny, round, hard, red or black seeds. High in fat and contains potash, phosphoric acid, lime and magnesium. Most valuable as a song food. Canaries may not sing without this seed in their diet.</p>	<p>Sold as a straight ingredient.</p>
<p>SAFFLOWER SEED A flowering thistle-like plant whose seeds yield an edible oil. This seed is a food source of usable oil and very high fiber.</p>	<p>America's Favorite: Safflower, Elite and Safflower. Nature's Select - Fruit & Nut, and Cardinal Prince: Supreme and Cardinal Also sold as a straight ingredient.</p>
<p>SUNFLOWER SEED: Very rich in oil (high fat). Some types of Sunflower are Grey Stripe, Black Stripe, and Black Russian. Rich in albumen, minerals and Vitamin E</p>	<p>America's Favorite: No-Waste, Good Friend, Cardinal, Elite, Preferred and Gold Finch Nature's Select: Fruit & Nut, Backyard Gourmet, Insect Indulgence, & Cardinal Prince: Premium, Supreme, Wild Finch and Cardinal Also sold as a straight ingredient.</p>
<p>WHEAT: An excellent food source for birds and a good source of Vitamin B-Complex. Wheat is low in fiber and has an average amount of protein with very little fat.</p>	<p>Prince: Premium and Wildlife Bird's Favorite: No-Waste and Preferred</p>

FAQ: *Feeding Wild Birds*

When is the best time to start?

The beauty of wild bird feeding is that you can start whenever you want to. The birds can use your help in the very early spring when natural seed sources are scarce. In general, whenever the weather is severe, birds will appreciate a reliable supplemental food source.

When is the best time to stop?

If you enjoy feeding the birds, there is no reason to stop. You can do it year-round. Feeding the birds throughout the summer will not make them "lazy" or "dependent." If you keep your feeding station clean, there's no reason for you to stop feeding.

Is it best to stop feeding hummingbirds after Labor Day?

There is no evidence that feeding hummingbirds after Labor Day will keep them from migrating. In fact, it may help a weakened straggler refuel for the long haul. Leave your nectar feeders out until the birds stop coming.

How long does it take for birds to find a feeder?

Sometimes it can seem like forever. It may take more time for birds to find window feeders than hanging or pole-mounted feeders. If you're impatient, start with a feeder full of hulled sunflower. If that doesn't get their attention, wrap aluminum foil around the top of the feeder hanger. Sometimes all it takes is the reflection of light on the foil to catch their attention.

My feeder is full of seeds. I haven't seen a bird in months. Am I doing something wrong?

When birds desert your feeder, it may simply be that a lot of natural food is available or something may be wrong, such as your seeds are spoiled or your feeder contaminated. Throw the seeds away and wash the feeder. Take a look at where you feeder is placed. Be sure it's not vulnerable to predators.

Won't birds' feet stick to metal feeders and perches in the winter weather?

Birds don't have sweat glands in their feet, so they won't freeze onto metal feeders. There's no need to cover any metal parts with plastic or wood to protect birds feet, tongues or eyes.

Can birds choke on peanut butter?

There's no evidence that birds can choke on peanut butter. However, birds have no salivary glands. You can make it easier on the them by mixing peanut butter with lard, cornmeal, and/or grit. Your birds would appreciate drinking water too - a bird bath or trough.

Do wild birds need grit?

In the winter, you may see flocks of birds along roadsides after the snowplows have passed. They're after the grit. Birds have no teeth to grind their food. The dirt, sand, pebbles, and grit they eat sits in their crop and helps grind up their food. Although there is plenty of natural grit available, some people add grit to their feeders. Crushed eggshells do the same thing and in the spring have an added benefit. They provide extra calcium during the nesting season.

Won't suet go "bad" in the summer?

It's safer to use commercially rendered suet cakes in the spring and summer months. There are many no melt suets available today. Rendering, boiling the fat, kills bacteria. And yes, it's okay to feed your woodpeckers year round. They will visit your feeders all summer long, and they'll bring their babies.

What is hummingbird "nectar"? Do hummers need nectar fortified with vitamins and minerals?

Hummingbird nectar is nothing more than table sugar and water. You can make your own by adding 1/4 cup of sugar to a cup of boiling water*. Hummers eat insects for their protein. There is no evidence that these tiny birds need vitamin and mineral supplements. There is also no evidence that adding red food coloring to nectar will harm the birds, but it probably is not necessary to attract them. Just put your feeder near red flowers. Please remember, sugar water will ferment when left in the hot sun. Fermented nectar is deadly. Do not put out a feeder if you are not willing to clean it at least weekly, preferably twice a week.

How can I avoid bees at my hummingbird feeder?

Bees are usually a problem only in hot weather. It's inevitable that bees will visit your hummingbird feeder. Little plastic bee guards may help keep them from getting nectar, but it won't stop them from trying. Don't take the chance of contaminating your nectar by putting vegetable oil around the feeding portals. The safest solution is to add a few small feeders away from where people are likely to be bothered by bees.

How close to your window can you put a feeder?

Birds will come right to your window. Sometimes it takes a while for them to overcome their initial reluctance, so be patient. Don't worry that a feeder on the window will cause birds to fly into the window. Birds fly into the window because they see the reflection of the woods. Window feeders and decals can break up the reflection. If you find a bird that has hit a window, carefully pick it up and put it in a box or large paper bag. Put it in a dark, quiet corner of your house for a couple of hours. If the bird recovers, take the box or bag outside and just let it go. If the bird comes to, but seems injured, call your local wildlife rehabilitation center for help.

I bought a bag of sunflower seeds early in the spring. Over the summer I noticed first worms, then moths. What can I do to keep the bugs out?

It's natural for moths to lay their eggs in sunflower seeds. The eggs lay dormant as long as the seeds are stored in a cool, dry place. In the summer, seeds get hot and the eggs hatch. The best way to avoid this problem is to buy seeds in smaller quantities, or store your seeds in a cool, dry place. It also helps to know where your retailer stores the seed. An air conditioned storage unit is the better choice. Insects will also lay their eggs in burlap bags. Don't buy seeds in burlap bags. Don't buy seeds in paper and plastic bags with patched holes. That may be a sign of insect or rodent infestations

ATTRACT THE BIRDS YOU DESIRE TO SEE!

Wild Bird Food Preference Chart

Bird	Food Preference
Indigo Bunting	Thistle seed, sunflower hearts
Northern Cardinal, Evening Grosbeaks, Rose-Breasted Grosbeaks	Sunflower Seeds, safflower, cracked corn, millet, fruit
Chickadee, Titmouse	Peanut kernels, sunflower seeds, suet, peanut butter
Mourning Dove	Millet, cracked corn, wheat, milo, buckwheat, sunflower seeds
Blue Jay	Peanuts, sunflower seeds, suet, cracked corn
Sparrows (White Crowned, White Throated, Chipping, Field, Tree, House)	Millet, sunflower hearts, black sunflower seeds, cracked corn
Finches (House, Purple American Goldfinch), Pine Siskin	Thistle seed, sunflower hearts, black sunflower, seeds, millet, canary seed, suet
Cowbird, Red-Winged Black Bird	Cracked corn, sunflower hearts
Woodpeckers (Red Bellied, Hairy, Downy, Pileated)	Suet, sunflower hearts and seeds, cracked corn, peanuts
Flicker	Suet, sunflower hearts and seeds, cracked corn, peanuts, insects
Wrens	Suet, peanut butter, peanut kernels, fruit, millet
Nuthatch	Suet, sunflower hearts and seeds, peanut kernels, peanut butter
Junco	Millet, sunflower seeds, cracked corn, peanuts
Redpoll	Sunflower hearts, thistle seed
Hummingbirds	Plant nectar, small insects, nectar
Orioles	Orange halves, fruit, berries, nectar, grape jelly, suet
Robin	Suet, mealworms, berries, fruits, sunflower hearts, worms
Cedar Waxwing	Berries, fruit, raisins
Scarlet Tanager	Suet, fruit, nectar, mealworms

Types of Feeders

SIX FEEDERS EVERY YARD SHOULD HAVE

GROUND / WINDOW / PLATFORM FEEDING TABLE

Ground and platform feeders should be placed in an open area - about 10 feet from the nearest shrub - where birds have a chance to flee in the event of a cat attack. Window feeders are a great way to view birds feeding, especially when space is limited. It may, however, take a couple days for birds to become comfortable coming up to the window, so be patient. Some ground and window feeder designs have covers to prevent snow from accumulating over the seed; others are surrounded by wire mesh to keep out squirrels and large birds such as crows and grackles. Ground and window feeders are especially favored by doves, juncos, sparrows, towhees, goldfinches, and cardinals



SUNFLOWER-SEED TUBE FEEDERS

If you are going to put out just one bird feeder, this is the best choice. Be sure to select a model with metal ports around the seed dispensers to protect the feeder from nibbling squirrels and house sparrows. Hang the feeder at least five feet off the ground and position it near a window, where you can enjoy the visitors. These feeders are especially attractive to small birds such as chickadees, titmice, nuthatches, goldfinches, siskins, purple and house finches.



HOPPER FEEDERS

Hopper feeders provide dry storage for several pounds of mixed seed, which tumbles forward on demand. Position hopper feeders on a pole or hang with a rope so the feeder is about five feet off the ground. Hopper feeders attract all of the species tube feeders attract, as well as such larger birds as jay, grackles, red-winged blackbirds, and cardinals. You may want to consider a pole mounted or hanging baffle to deter squirrels from reaching the feeder.



SUET FEEDER

Suet is readily eaten by titmice, chickadees, nuthatches, and woodpeckers. In addition to the regular suet-feeder visitors, wrens, creepers, and warblers occasionally pick at these mixes. You can hang suet chunks from a tree in an onion bag or half-inch hardware-cloth basket, or in a more durable cage feeder like the one shown here. You can also make your own suet pudding and feeder. Suet puddings are made by grinding and melting suet and adding seeds. (There is no evidence that suet puddings are more attractive to birds than chunks of suet.) Pack peanut butter-corn meal blends (when you mix the peanut butter with cornmeal it not only stretches the expensive peanut butter but also makes this sticky treat easier to swallow) and suet puddings into the crevices of large pinecones or into one-inch diameter holes drilled into logs. Hang the pinecones and the logs from poles near other feeders, from trees, or from a wire stretched between trees. Avoid feeding suet when temperatures climb into the 80 degree range; it turns rancid and drippy and may damage feathers.



NYJER (THISTLE) FEEDERS

Especially designed to dispense Nyjer seed, also known as thistle seed-different from the prickly garden weed - these feeders typically have tiny holes that make the seed available only to small-beaked finches such as goldfinches, redpolls, and pine siskins. Nyjer seed dispensing bags are not generally recommended, since squirrels can easily tear holes in them and waste this expensive seed. Hang your Nyjer seed feeder from a tree or place it on a five-foot pole near other feeders, taking care to protect it from squirrels with a special baffle. Finch seed mixtures are economical alternatives to feeding straight Nyjer seed and work equally well in this type of feeder.



Choosing a Feeder

HOW TO SELECT A FEEDER

When the ground is covered with snow and ice, it's hard to resist just tossing seed out the door. But it's healthier for the birds to get their "hands-outs" at a feeding station, off the ground.

Regardless of the season, food that sits on the ground for even a short time is exposed to potential contamination by dampness, mold, bacteria, animal droppings, lawn fertilizers and pesticides. It's best, for the birds' sake, to use a feeder. You can start simply with a piece of scrap wood, elevated a few inches above the ground. Add a few holes for drainage and you've built a platform feeder. It won't be long before the birds find it. Whether you buy one or build one, eventually you'll find yourself looking at commercially manufactured feeders. There are literally hundreds to choose from. How do you make the "right" choice? What makes a feeder "good?"

FIRST CONSIDER PLACEMENT

Where do you want to watch your bird? From a kitchen window...a sliding glass door opening on to a deck...a second story window?

Pick a location that has year-round easy access. When the weather's bad and birds are most vulnerable, you may be reluctant to fill a feeder that isn't in a convenient spot near a door or accessible window. Also consider the "mess" factor. Pick a location where discarded seed shells and bird droppings won't be a clean-up problem.

Put your feeder where the squirrels can't reach. Those cute little rodents seem to like sunflower and peanuts as much or more than acorns. Squirrels become a problem when they take over a bird feeder, scaring the birds away, and tossing seed all over.

What's worse...frustrated squirrels have been known to entertain themselves by chewing right through plastic and wooden feeders. If you've seen squirrels in your neighborhood, it's safe to assume they will visit your feeder. Think long and hard before you hang anything from a tree limb. Squirrels are incredibly agile, and any feeder hanging from a tree, with or without a squirrel guard or baffle, is likely to become a squirrel feeder. In the long run, a squirrel-proof feeder or any feeder on a pole with a baffle is the least aggravating solution. The most effective squirrel-proof feeder is the pole mounted metal "house" type. If you must hang a feeder, select a tube feeder protected with a metal cage. Most plastic "squirrel-proof" feeders, despite manufacturers' claims, may eventually succumb to rodent teeth.

If you have the "right" situation in your yard, a pole with a plastic feeder can be effective when mounted on a pole with a plastic or metal baffle, if the pole is at least 10 feet or more from a tree limb or trunk.

Once you've determined where you're going to put your feeder, you're ready to go shopping.

In addition to good looks, think about...

- How durable is it?
- Will it keep the seeds dry?
- How easy is it to clean?
- How much seed will it hold?
- How many birds will it feed at one time?
- Which species will use it?



There seems to be no end to the materials used in making bird feeders. You can buy “disposable” plastic bag feeders; feeders made of cloth, nylon, vinyl, and metal netting; clear, lexan, colored and PVC plastic tubes; ceramic and terra cotta; redwood, western cedar, birch, pine and plywood; sheet metal and aluminized steel; glass tubes and bottles.

How long a feeder lasts depends on how much effort you put into maintaining it, the effects of weather, and whether squirrels can get to it.

KEEP SEEDS DRY

Water can get into any feeder regardless of how careful you are to protect it. Seeds will spoil when they get damp or wet. Cloth, vinyl, nylon and metal netting feeders are inexpensive, but they do not protect your seeds. You can improve them by adding a plastic dome. Most wood, plastic, ceramic, and solid metal feeders will keep seeds dry, but water can get into the feeding portals. Look for feeders with drainage holes in the bottoms of both the feeder hopper and the seed tray.

Even bowl-type feeders and trays with drainage holes will clog with seed and bird droppings. Add rainwater and you will have an unhealthy broth. Look for shallow plate-like seed trays. The purpose of a tray is to catch dropped seeds while allowing spent seed shells to blow away.

CLEANING

Any zoo-keeper and cage bird owner will tell you, when you feed birds in a confined area, you have to expect bird droppings, feathers, an occasional insect or two leftover food mess. While you don't have to wash the feeder daily, you should clean it regularly. Diseases like salmonella can grow in moldy, wet seed and bird droppings in your feeder tray and on the ground below. It's a good idea to move your feeders (just a foot or so) each season to give the ground underneath time to assimilate the seed debris and bird droppings.

Keeping your feeders clean should not become a major undertaking. The degree of maintenance required is directly related to the types of birds you want to attract.

A thistle feeder for goldfinches should be cleaned about once a month depending on how often it rains. Feeding hummingbirds requires cleaning at the very least, weekly, preferably more often—two or three times a week. Sunflower feeders made of plastic, ceramic and glass are easy to clean. Wash them in a bucket of hot, soapy water fortified with a capful or two of chlorine bleach, then give them a run through your dishwasher. Use the same regimen with wood feeders, but substitute another disinfectant for the bleach so your wood won't fade.

FEEDER CAPACITY

The ideal feeder capacity varies with your situation, and the types of birds you want to attract. If you feed hummingbirds, big feeders are not always better. One hummingbird will drink about 2 times its body weight (less than an ounce) a day. Early in the season, hummers are territorial and won't share a feeder. A sixteen ounce feeder can be wasteful, or indeed lethal, because artificial nectar (sugar water) can ferment in the hot summer sun.

If you see only one hummer in your yard, a two ounce feeder is more than enough. On the other hand, if you live in the southwest, and have 34 hummers in your yard, a sixteen ounce feeder may not be big enough. If you opt for a large volume seed feeder, be sure to protect it from the weather and keep it clean. If after months of use, the birds suddenly abandon your feeder full of seed, it's time for a cleaning.



HOW MANY BIRDS DO YOU WANT TO FEED?

If too many birds at your feeder becomes a problem, you can control their numbers by putting out smaller amounts of seed, by using specialty seed, or by using restrictive feeders.

If you fill your feeder only when it's empty, the birds will look for food elsewhere. They will return as long as you continue to fill it.

You can virtually eliminate visits by birds you'd rather not see by offering seeds they won't eat. Be selective in your choice of seeds. If you use more than one type of seed, put them in separate feeders. This will reduce wasted seeds, as birds will toss unwanted seeds out of a feeder to get to their favorites.

Birds that visit your feeder have very specific preferences. Most prefer sunflower. Some prefer millet. A few prefer peanuts. Some seem to prefer the other grains used in the mixes: corn, milo, red millet, oats, wheat and canary seed.

If you want to feed only cardinals, doves and white-throated sparrows, switch from black oil sunflower to safflower. If you want only finches and an occasional dove and white-throated sparrow, try nyjer (thistle) seed. If you only want jays, titmice and white-throated sparrows try peanuts.

Another way to discourage unwanted birds is to use specialty feeders that for the most part, allow only "select" birds to feed.

The most non-selective feeders are the tray, platform or house feeders.

You can encourage small birds with feeders that restrict access. Wood feeders with vertical bars and feeders covered with wire mesh frustrate the larger birds.

Tube feeders without trays also restrict access to small birds. Remove the perches, and you've further selected only those birds capable of clinging— finches, chickadees, titmice and woodpeckers.

Add vertical perches to tub thistle feeders, and you'll limit accessibility primarily to the goldfinches.

If starlings are a problem at your suet feeder, you can discourage them by using a suet feeder with access only at the bottom. Starlings are reluctant to perch upside down. Chickadees and woodpeckers don't find that a problem.



Providing Water for Birds

Like all animals, birds need water to survive. Though they can extract some moisture from their food, most birds drink water every day. Birds also use water for bathing, to clean their feathers and remove parasites. After splashing around in a bath for a few minutes, a bird usually perches in a sunny spot and fluffs its feathers out to dry. Then it carefully preens each feather, adding a protective coating of oil secreted by a gland at the base of its tail. For these reasons, a dependable supply of fresh, clean water is attractive to most birds. In fact, a birdbath will even bring to your yard birds that don't eat seeds and wouldn't visit your feeders. Providing water for birds can also improve the quality of your backyard bird habitat and should provide you with a fantastic opportunity to observe bird behavior.

WHAT'S WRONG WITH A GOOD OLD-FASHIONED BIRDBATH?

Say "birdbath," and most people think of a concrete basin mounted on pedestal, the kind often sold in lawn and garden shops. Though these baths make nice lawn ornaments, they aren't the best setup for most birds. For one thing, they're often too deep. A good bird bath mimics shallow puddles, which are nature's birdbaths. Concrete baths are also hard to clean; the tiny nooks and crevices must be scrubbed extra hard to dislodge algae and sediment. And finally, concrete basins often crack if they freeze during winter.

FIND A BETTER BIRDBATH

When you're choosing a birdbath, look for one with a basin that you can clean easily. It should also have a gentle slope to allow birds to wade into the water. You can make your own bath out of garbage can lid, a saucer-type snow sled, or even an old frying pan. But if you'd rather buy one, look for a birdbath made of tough plastic that won't break if the water freezes or if your dog knocks it over. For the ultimate birdbath, set up a permanent pool in your backyard. Just dig a shallow hole in the ground and line it with plastic or cement to make watertight. Plant ferns and other native plants around the pool to make it more attractive. You can add a pump to circulate the water if you want to create elaborate multilevel pools.

SETTING UP A BIRDBATH

Try to imitate a natural puddle as much as possible when you're installing your birdbath. Birds seem to prefer baths that are at ground level, but if you are concerned about cats, raise the bath two or three feet off the ground. Don't forget to put it where you'll have a good view of the birds!

It's a good idea to put some sand in the bottom of the bath, to give the birds sure footing. If the bath is on the ground, arrange a few branches or stones so that when they emerge from the water, the birds can stand on them and drink without getting wet (this is especially important in the winter).

Placing your birdbath in the shade, near trees or shrubs if possible. A shady location slows evaporation and keeps the water fresh longer.

Furthermore, birds can't fly well when they're wet, so they're vulnerable to predators when they're bathing.

With cover nearby, they'll feel safe because they can escape quickly. If their splashing is interrupted by a cat or a hawk, they'll be less likely to venture into the water. One of the best ways to make your birdbath more attractive is to provide some motion on the water's surface. Water dripping into the basin catches the attention of birds. You can buy one of the commercially available products that drips or sprays water into a birdbath. Or recycle an old bucket or plastic container by punching a tiny hole in the bottom, filling it with water, and hanging it above the birdbath so that the water drips slowly down.



KEEPING WATER MOVING & PREVENTING FREEZING

Birds are attracted to moving water. Moving water will many times attract birds even without food in the area. Keeping water moving will keep it fresher longer and help in preventing the spread of West Nile Virus. Immersion-style water heaters have improved greatly in the last few years, and they're perfect for keeping the water from freezing in a birdbath. More important, they're safe to operate. The latest immersion heaters on a ground-fault the bath dries up. Put your heater on a ground-fault interrupted circuit (available from any hardware or electrical supply store) to eliminate the danger of electrical shock. These heaters cost pennies a day to operate and they're available at most places where bird feeders are sold.

A homemade solution is to put a light bulb in a flower pot and place the water basin on top. The light bulb will provide more than enough heat to keep the water from freezing.

Though some people advocate adding glycerin to a birdbath to act as an antifreeze, we do not recommend it. You must use a high concentration of glycerin to prevent water from freezing. (To lower the freezing point to 15 degrees F, for example, you'd need to use a 30 percent glycerin solution.) Glycerin is a low-level toxin and has a sweet taste. Ingesting large amounts of glycerin elevates the blood sugar level of a bird, which can be harmful or even fatal. And if a bird bathes in a glycerin solution, its feathers may become matted. Birds bathe and preen to enhance the insulation value of their feathers. Matted feathers are poor insulators, leaving a bird susceptible to cold temperatures. So use an immersion heater instead.

MAINTAINING A BIRDBATH

The key to attracting a large number of birds is to keep your bath full of water at all times. In the natural environment, most sources of shallow water are intermittent. Although puddles form after a hard rain, reliable pools are rare and birds will travel great distances to visit them. Keep your birdbath full and you'll be well rewarded. But remember to clean your birdbath every couple of days. Don't let the water become stale; clean off the bottom of the bath immediately if green algae starts to form.

Remember: If you're trying to make your back yard a better place for bird-life, few things are more attractive than a well-maintained birdbath. Just add water and watch the fun!

Bird Notes from Sapsucker Woods, Number 0 Cat. No 219



FACTS ABOUT THE WEST NILE VIRUS

West Nile Virus is a mosquito-borne virus. Infected mosquitoes transmit the virus to birds through a bite, and the birds then become carriers of the disease. Some of these birds will survive, while others will die from the infection. While crows and jays are the species that seem to have the highest mortality rates, all birds are susceptible. An infected bird can transmit the virus to an uninfected mosquito, which can then infect another bird, creating a vicious cycle of transmission.

Infected mosquitoes can, and do, transmit the virus to people, but the hysteria surrounding this fact is usually much greater than the actual risk of human infection. The vast majority of people bitten by infected mosquitoes never exhibit any symptoms and suffer no ill effects of the virus. The actual chance of a human becoming ill from West Nile Virus is less than 1%, not high odds by any standard.

Some people are at higher risk than others, among them the elderly and those with compromised immune systems. While it was originally thought that small children were at greater risk than adults, research has proven that this is not so; people who are least 50 years of age and older are more likely to become infected.

No matter how small the odds of infection, those who do become ill from the disease and don't receive medical treatment can die, so caution should prevail.

Mosquitoes lay their eggs in standing water, and the larvae need 2 to 3 days to hatch. If the surface of the water is disturbed, the mosquitoes won't hatch into mature adults. As far as bird baths being breeding grounds for mosquitoes, one simply has to do the math: replace the water in your bird bath every two days during their breeding season, and no mosquitoes will have the opportunity to reproduce.

Keeping the water in bird baths fresh and clean should be a requirement of anyone who provides water for the birds, since bacteria that can harm the birds grows in dirty water. If that alone is not reason enough for you to do so, you really shouldn't have a bird bath. The fact that water left unattended for three days can harm humans through the possibility of spreading WNV should be added incentive for everyone.

Water features like drippers, misters, and recirculation fountains and pumps create moving water. Not only do these features attract more birds with the sound of moving water, they also provide the valuable service of keeping the water surface disturbed, thereby eliminating the possibility for mosquitoes to reproduce.

Mosquitoes are a lot more likely to use other sources of water on your property than your bird baths, since one big, fat robin will do a bang-up job of disturbing the surface of the water with a bath! So take a look around your property for other areas where they can breed: gutters, buckets, wheelbarrows, toys, tires, and anything else that can hold water. Keep in mind that a mosquito can use a relatively small amount of water, such as that contained in an empty soda can, to hatch 200 to 300 every other day.

Tend to your birdbaths and continue to use the same precautions you always have – avoid being outside at dusk and dawn when they are most active, and use repellents applied to skin and clothing – along with these added ones, and you'll be able to provide water for your bird without any added concern.



Winter Bird Feeding

If you feed birds, you're in good company. Birding as a hobby currently stands second only to gardening as America's favorite pastime. A 1997 report from the Kaytee Avian Foundation estimates that 43 percent of U.S. households or about 65 million people provide food for wild birds. As a nation, we spend at least 2.5 billion dollars annually on bird-related products, including birdseed and bird feeders.

WINTERTIME – AND THE LIVING'S NOT EASY

In much of North America, winter is a difficult time for birds. Days are often windy and cold; nights are long and even colder. The lush, berry laden vegetation of summer and fall has withered and been consumed, and most insects are dead or dormant. Birds may have difficulty finding enough food during the short winter days to fuel their internal furnaces.

Setting up a backyard bird feeder makes their lives easier and ours more enjoyable. To observe birds at your backyard feeder, you don't need to brave the elements – you can simply watch the show from the comfort of your own home. One study, being done at Purdue University, is focusing on how a home-based, wild-bird feeding program can increase knowledge of birds and conservation issues among children. In addition, participants in the Cornell Lab of Ornithology's Project FeederWatch have indicated that the project has changed the way they think about science and conservation. In other words, feeding birds can benefit both birds and humans.

TYPES OF BIRD FOOD

During the spring and summer months, the diet of most songbirds is composed mainly of insects and spiders. These tiny creatures are highly nutritious, abundant, and, for the most part, easily captured. During fall and winter, however, nonmigratory songbirds must shift their diets to fruits and seeds to survive. This is the time of year when winter bird-feeding enthusiasts should roll out the welcome mat and set the table. The question is, what to serve for dinner. The shelves of many supermarkets and specialty bird-feeding stores are stocked; with bags, buckets, and cakes of many food types. You may find the task of selecting the best foods to purchase a bit confusing. One way to attracting a diversity of bird species is to provide a variety of food types, but that doesn't mean you need to purchase one of everything on the shelf.

WHICH SEED TYPES SHOULD I PROVIDE

Different birds prefer different types of seeds, but the seeds that attract the greatest number of species are **black-oil sunflower**. These seeds have a high meat-to-shell ratio, they are nutritious and high in fat, and their small size and thin shells make them easy for small birds to handle and crack. (Striped sunflower seeds are larger and have a thicker seed coat.) Several studies show that this high-energy food is the flock-pleasing favorite of the majority of birds that visit feeders. In fact, if you fill a feeder with a standard mix—a blend of sunflower, milo, millet, flax, and buckwheat seeds – you'll see many birds actually kick out the smaller seeds to get to the prized sunflower seeds. Nevertheless, birds' feeding habits vary based on weather patterns, geographic region, season, and even individual taste, so you may find exceptions to these guidelines. **Corn** refers to dried, whole-kernel corn, a favorite food for jays, pigeons and doves, quail, and pheasants. It is perhaps the least expensive of all bird seeds. Cracked corn, however, is easier to eat for blackbirds, finches, and sparrows. **"Millet"** comes in red and white varieties, but most birds prefer white proso millet over red. **"Nyjer,"** or thistle seed, is a delicacy for small finches such as goldfinches, siskins, and redpolls. Because nyjer seeds are small and expensive, it's best to offer them in a special nyjer feeder, which has tiny ports that prevent the seeds from spilling out. **Safflower** is another seed that many birds like – most notably, cardinals. As an added bonus, it has limited appeal to starlings, House Sparrows, and squirrels. **Peanuts** are another readily available food that many backyard birds will eat.

While sunflower seeds are favored by most feeder birds, some birds do prefer other seeds. For example blackbirds like corn, and doves prefer corn milo and millet. A Cornell Lab of Ornithology, called the Seed Preference Test, found that most ground feeding birds species prefer white millet or red milo to black-oil sunflower seed, but many tree-feeding species prefer sunflower seed. Experiment to see what your birds like best!

As an alternative to commercial mixtures, which may have a high percentage of less appealing “filler seeds” such as red milo, you can create an attractive, low-cost mixture yourself. Pour one 25 pound bag of black oil sunflower seed, one 10 pound bag of white proso millet, and one 10 pound bag of cracked corn into a clean trash barrel, mix it up with a broomstick, and be sure to replace the lid tightly. In fact, always store whatever seed you decide to provide in a tight, waterproof container. Metal containers work best to prevent rodents from gnawing their way into your food supply.

LEFTOVER: FOR BIRDS

You don't have to limit your offerings to commercial birdseed. Some people save the seeds from squash and melons. This is a great way to put the seeds from your Halloween pumpkins to good use. Some birds relish these seeds even more than black-oil sunflower. Spread them out on trays to air dry before placing them in your feeders or on the ground. If the seeds are sufficiently dry and free of mold, you can save them to use when winter comes. Smaller birds may have a tough time breaking open vegetable seeds, but if you run the seeds through a food processor first, they will be able to eat them with ease.

Some people throw out scraps of stale bread, cake, or doughnuts for their feathered visitors. There's nothing wrong with this, but be sure the food is not moldy, or it may harm the birds. Another caveat: table scraps may attract less-welcome visitors such as European Starlings, House Sparrows, rats, or raccoons. Attracting nuisance species can be a real problem in urban and suburban areas, so try to be considerate of your neighbors when feeding leftovers.

HIGH ENERGY FOODS

You can also attract insect-eating birds such as chickadees, woodpeckers, and nuthatches to your yard by offering peanut butter or suet (beef fat). Birds that live in cold climates especially appreciate these high energy foods.

Some people worry that birds will choke on sticky peanut butter. There's no evidence that they do, but you can completely eliminate any risk by mixing peanut butter with corn meal or oatmeal. For a good summer bird food, mix one part each of peanut butter, flour, and vegetable shortening, with three parts of cornmeal or cracked corn. Drill holes in a small log and fill the holes with the peanut butter trunks, branches, or a feeding platform. Your feathered visitors will enjoy this recipe all summer.

Suet, on the other hand, should be used only as a winter food, because it quickly turns rancid in warm weather. The plain beef suet available at most supermarket meat departments is an excellent high energy food. Offer the suet in a wire basket or plastic mesh bag (the kind onions come in) tied to a tree. Pre-made suet cakes are also available in most stores that sell bird feeding supplies. These cakes often contain a mix of bird seeds. The cakes are great to have on hand in case your local supermarket is out of suet.

FRUITY OFFERING

Birds such as robins, thrushes, bluebirds, and waxwings don't usually show up at feeders because seeds are not a major component of their diet. But you can still tempt them to dinner with an offering fruit. Try dried fruits such as raisins or currants which have been softened by soaking them in warm water. Mockingbirds, catbirds, robins, tanagers, and orioles will also find sliced fresh fruit attractive. You can offer fruit on a platform feeder or simply on plate on the ground; some feeder companies sell special “fruit feeders” that allow you to impale half an apple or orange on a spike. You can also make these fruit feeders by driving a series of nails through a board and attaching the board to your feeding platform. Then, simply skewer orange or apple halves on the nails.



WATER, WATER, EVERYWHERE

Unfrozen water can be as hard for birds to find in winter as food. Birds need water not only to drink, but also to keep their feathers clean and fluffy to provide the insulation to keep warm in cold weather. A dependable supply of fresh water will even attract birds to your yard that wouldn't ordinarily come to your feeders. A shallow, easy-to-clean birdbath is the best kind—an upside-down garbage can lid or large frying pan will work fine. To emulate a natural puddle as closely as possible, simply dig a shallow hole in the ground and line it with plastic before filling it with water. An immersion-style water heater will keep your birdbath unfrozen in the winter. Clean your birdbath often and keep it filled with fresh water.

TYPES OF FEEDERS

The ideal bird feeder is sturdy enough to withstand winter weather, tight enough to keep seeds dry, large enough that you don't have to refill it constantly, and easy to assemble and keep clean. For these reasons, plastic or metal feeders work better than wooden ones. In general, seed-feeders fall into three categories: tray feeders, hopper feeders, and tub feeders. Tray feeders are typically placed close to the ground and often attract ground-feeding birds such as juncos, sparrows, and towhees. Tray feeders also work well and they can be mounted on deck railings, stumps or posts. Hopper feeders are very common and are often hung from trees, decks, and poles. These feeders are especially good for larger arboreal species such as cardinals, jays, and grosbeaks. Tube feeders are typically suspended from trees and posts. They are excellent for finches, titmice, and chickadees.

FEEDER PLACEMENT

Place your feeder in an area free of disturbances where it is easy to see and convenient to refill. Your feeder should be close to natural shelters (cover) such as trees or shrubs. Evergreens are ideal, providing maximum cover from winter winds and predators. If trees and shrubs are too close, however, they can also provide good jumping-off places for squirrels that may be eyeing the seeds, and cats that may be eyeing the birds. A distance of about 10 feet seems to be a happy compromise. You can provide resting and escape cover for ground-dwelling birds, such as Song Sparrows, by placing large, loosely stacked brush piles near your feeders.

FEEDER MAINTENANCE

Clean your feeders often by scrubbing them with soap and water and then dipping them into a solution of one part bleach and nine parts water. Rinse them well, and allow them to dry thoroughly before refilling them with birdseed. Another important maintenance chore is to periodically rake up birdseed hulls beneath the feeders. Decomposing hulls may harbor bacteria that could spread disease to your feeder birds and may kill your lawn or flowers.

BIRD FEEDING CONCERNS

Poorly maintained feeders may contribute to the spread of infectious diseases among birds. The feeders themselves can sometimes pose hazards too. Here are some helpful hints for successful bird feeding.

- Avoid overcrowding at feeders by placing numerous feeders several feet apart.
- Keep your feeding area and feeders clean.
- Keep food and food storage containers dry and free of mold and fungus.
- Check your feeders for safety. Sharp edges can scratch birds and make them susceptible to infection.

People wonder whether bird feeding causes birds to change their migratory behavior. The clue that most birds use to migrate is the change in day length rather than the availability of food. Also, peak migration time is late summer and fall, a time when natural foods are readily available anyway. So, it is unlikely that feeding birds has an effect on their migratory patterns.

Many people also worry about what will happen to their backyard visitors when they go on vacation. Ideally, a neighbor or friend should stop by to restock your feeder. Otherwise, try to taper off gradually before you go. Don't fret, however, it's fine to stop feeding briefly. In winter, natural food sources often disappear overnight when they are covered by snow and consumed by other animals. Birds have adapted accordingly – studies show that even birds with full access to feeders consume three-quarters of their diet elsewhere, and that when feeder birds are deprived of supplemental foods, they quickly revert to an all-natural diet. If your neighbors have feeders too, you can rest even more assured that your birds will not starve.

IF YOU BUILD IT, WILL THEY COME?

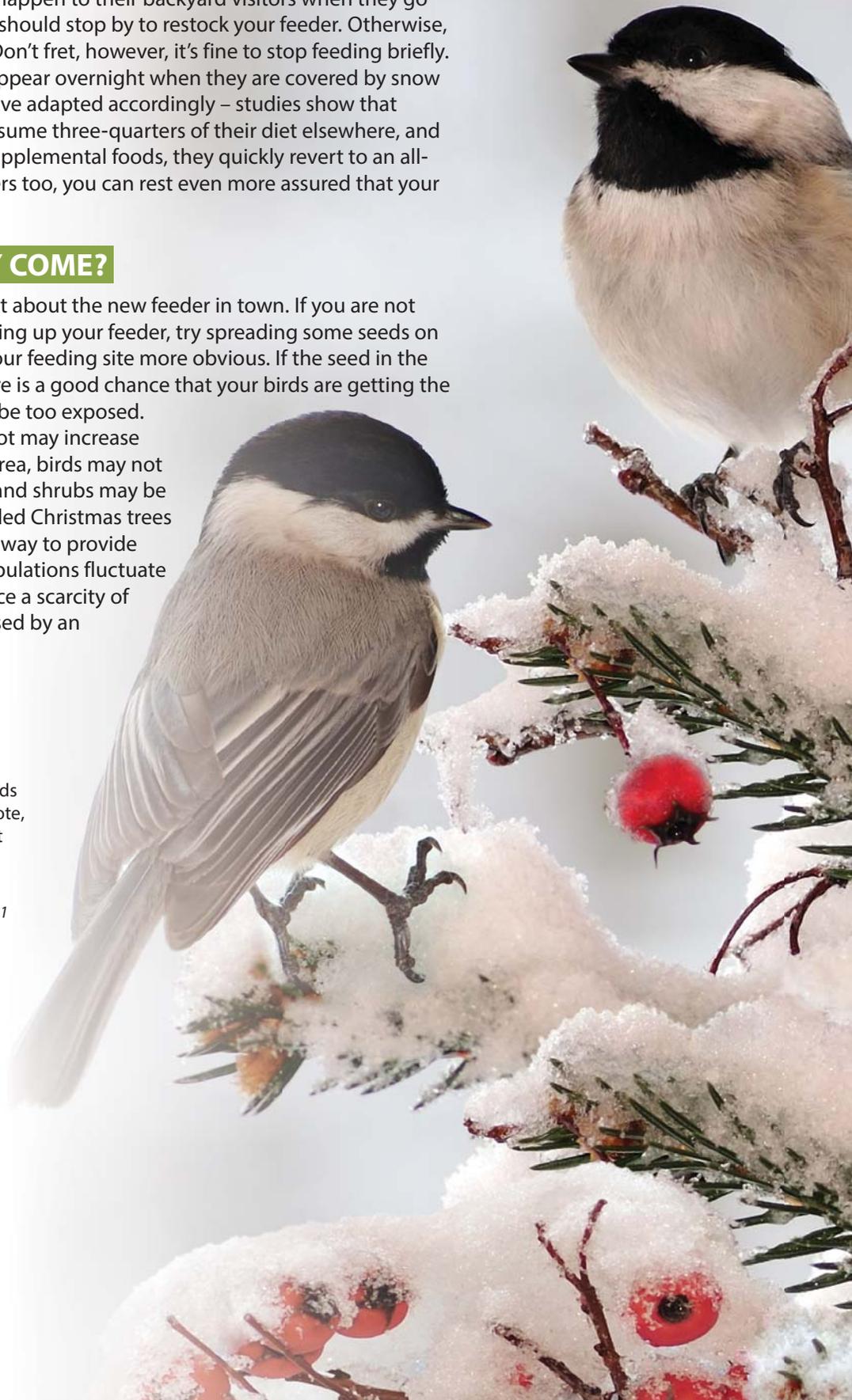
It may take a while for the word to get out about the new feeder in town. If you are not seeing any birds within a few days of setting up your feeder, try spreading some seeds on the ground around the feeder to make your feeding site more obvious. If the seed in the feeder is blowing out or getting wet, there is a good chance that your birds are getting the same treatment. Your feeder may simply be too exposed.

Moving it to a calmer, more sheltered spot may increase visitation. In newly developed housing area, birds may not feel sufficiently protected because trees and shrubs may be few in number and small. Placing discarded Christmas trees near your feeder is a quick, if short term, way to provide some cover. Remember too that bird populations fluctuate naturally from year to year, so if you notice a scarcity of feeder birds this year, you may be surprised by an abundance of birds the next year.

For More Information:

If you wish to pursue your interest in feeding birds beyond the information contained in this BirdNote, consider joining the Lab of Ornithology's Project Feeder Watch. For information or to sign up, call (800)843-BIRD or (607) 254-2414.

Bird Notes from Sapsucker Woods, Number 1 Cat. No. 211



Squirrel Solutions

WHAT CAN YOU DO ABOUT SQUIRRELS?

What's the single most frustrating, annoying, downright infuriating thing a person is likely to face in backyard birding? Most bird watchers probably would answer emphatically, "Seed-stealing squirrels." It's not enough that the furry little felons drive off every songbird in the yard and gobble up expensive seed by the bushel; as an added insult determined squirrels will rip your bird feeder to shreds in the process.

BAFFLES AND TRICK POLES

For starters, try to make your feeders inaccessible. That's no easy task when you're dealing with an animal as acrobatic as a squirrel. These creatures can leap 8 feet horizontally or jump 11 feet down from a roof or tree branch onto your feeder. Position feeders at least 10 feet from jumping-off points.

You'll also need to install baffles on all your feeders. Here at the Cornell Lab of Ornithology – where we suspect we have the world's craftiest squirrel—we've experimented a lot with baffle placement. We find that we can repel jumping squirrels by placing tilting baffles over a feeder. Usually, when a squirrel lands on such a baffle, the rodent simply slides off.

If your feeder is hung from a branch or suspended from a horizontal line, install a tilting baffle at least 18 inches in diameter above your feeder might just do the trick. Another hint for suspended feeders: try hanging them from a three to four-foot length of nylon monofilament fishing line instead of wire. If your feeders hang from a horizontal line or wire, place lengths of plastic tubing around the line; the tubing will spin when a squirrel tries to walk on it.

But if your feeder is mounted on a pole, you'll need to set up your baffle below the feeder, because squirrels can climb the slipperiest poles imaginable. In this case, the baffle need not (and probably should not) tilt. You can make a baffle quite easily from a garbage can lid or similar round object. Or buy a ready-made baffle that fastens to the pole with a clamp. The only truly squirrel-proof feeder in the Lab's bird garden is a tube feeder that's mounted on a pole more than 10 feet from cover. It has a 16 inch baffle fastened about a foot below the feeder bottom. The baffle also serves as a feeding tray that catches seed spilled from above.



SQUIRREL SPOOLER

Instead of – or in addition to – a baffle, you could buy a "squirrel spooler" pole. These ingenious spooler devices have a movable plastic sleeve covering the upper part of the pole, held in place with a simple counterweight system. When a squirrel reaches the plastic sleeve on its way up to the feeder, the sleeve slips down, dumping the surprised squirrel onto the ground. The sleeve then automatically moves back into place, ready for the next squirrel. Some people suggest coating feeder poles with grease or glycerin, but we don't recommend using these substance – they might be harmful to wildlife. Many chemicals are toxic, and grease can mat feathers or fur, which could cause both squirrels and birds to freeze to death.



SQUIRREL-PROOF FEEDERS

If your yard has too many squirrel-launching platforms – fences, rooftops, trees – it may be impossible to keep squirrels off our feeders. And if squirrels are chewing your feeders to bits, you have little choice but to switch to a new feeder made of indestructible material, such as Lexan. The best feeders also have seed ports reinforced with metal and come with guarantees against destruction by squirrels. Another choice is an all-metal feeder with a counterweighted door that closes automatically, protecting the seed whenever anything heavier than a songbird steps on the feeding platform. Several brands are available on the market. They do a good job of protecting expensive seed.



IF YOU CAN'T BEAT 'EM, JOIN 'EM

As a final measure, why not try bribing the squirrels with foods that they like more than birdseed? Set out some raw peanuts in the shell, throw some inexpensive cracked corn on the ground, or dangle some ears of corn from your tree. You'll find that the squirrels will end up spending a lot of their time feeding on these humble offerings, allowing the birds to fill up at your feeder. Who knows? You might eventually even come to enjoy the squirrels. They are, after all, interesting creatures in their own right. Their presence will only add to the fun of your backyard bird feeding station, once you learn to cope with them.

