

by Marc Radell

NE OF MY FAVORITE PAINTINGS HAS ALWAYS BEEN *The Song of the Lark* by Jules Adolphe Breton. In it, a peasant laborer is transfixed upon hearing a lark at dawn. Even those of us living in comparative prosperity often take joy in the sight and sound of the creatures we call 'songbirds.' I certainly do, and I would like to share with you how I have learned to attract them to my yard (75 species so far!) through a variety of gardening practices.



Jules Adolphe Breton, *The Song of the Lark*

About Songbirds

Songbirds comprise the suborder *Oscines* of the order *Passeriformes* (perching birds), within the class *Aves* (birds). Of the approximately 167 species of oscines in the Mid-Atlantic area, the largest is the common raven (27" long) and the smallest is the golden-crowned kinglet (4" long).

Oscine derives from the Latin oscen meaning "bird that gives omens by its cry." Indeed, the complex vocal apparatuses that characterize oscines enable them to produce an incredible range of sounds, including some of the most melodious omens on Earth! If you have never heard a wood thrush sing, read no farther until you have listened to the recordings at www.allaboutbirds. org/guide/Wood_Thrush/sounds. These wondrous sounds are possible because the wood thrush has two sets of 'vocal cords' and can actually sing overlapping melodies.

In addition to beautiful vocalizations, songbirds such as warblers, tanagers, orioles, and finches, have striking plumage that brings additional color and movement to our home gardens. It comes as no surprise, then, that many people want to attract songbirds to their yards.

The current avifauna of the Mid-Atlantic evolved in a post ice age, pre-European contact environment, dominated by mature deciduous forests. Each forest layer, from canopy trees down through understory trees and shrubs to herbaceous plants and the forest floor, provided one or more of the necessities for survival-food, water, and cover-throughout the year. Most of these forests have been lost or degraded through logging, agriculture, development, fragmentation, invasive plants and pests, and overbrowsing by deer. As gardeners, we can mitigate some of the loss by looking to these richly vegetated and layered forests for inspiration in creating our own songbird habitats.*

Food

Perhaps the most significant part of songbirds' overall diet is insect material. About half of adult songbirds feed mostly on insects and all of them provide insects to their young. In fact,



Black-throated green warbler gleans caterpillar from sugar maple.

many conservationists consider the amount of available insect material to be the limiting factor in songbird populations on the lands they manage. So, the "food" part of gardening for songbirds includes a heavy emphasis on providing the plant material that insects prefer. This may seem counter intuitive to gardeners, who often think of themselves as constantly battling insect pests, but most of those pests are nonnative insects (e.g., Japanese beetles) attacking nonnative plants (e.g., tomatoes, tea roses). In a natural ecosystem, mature, healthy plants seldom die from insect damage due to a combination of the plants' own defense systems and the control of insect populations provided by predators, parasites, and diseases. This system gets skewed upon the introduction of exotic plants and insects.



American robin gathers algae from pond for nest-building.

^{*} People who garden in coastal zones or other areas that were not previously forested can contact their local chapter of the Audubon Society for advice specific to their geography.

About ninety percent of herbivorous insects evolved to circumvent the natural chemical defense systems of only a few plant species. Most native insects simply cannot eat exotic plants. Therefore, using native plants whenever possible is crucial to maintaining the level of insect material necessary to support breeding songbirds.

Because of their volume, trees provide the most leaves, nectar, pollen, and seeds for the insects that contribute to songbirds' diets. The top five genera of trees that support caterpillars and other key insects are *Quercus* (oak), *Salix* (willow), *Prunus* (cherry, plum), *Betula* (birch) and *Populus* (poplar, cottonwood). Many early-blooming trees, including those that are primarily wind-pollinated, also attract hordes of small flying insects, to the delight of resident and migrant songbirds. In spring, even seedeaters, such as chickadees, become adept flycatchers.



Red-breasted nuthatch pries insect from blue spruce bark.

Moving down through the vegetative layers, some shrubs that support multiple species of insects are Vaccinium (blueberry), Corylus (hazelnut), Rosa (rose), Hamamelis (witch hazel), and Viburnum. Herbaceous perennials of particular importance to insects for songbirds include Aster, Comptonia (sweet fern), Solidago (goldenrod), Urtica (nettle), Coreopsis, and grasses.

Many adult songbirds feed on fruits, both fleshy (e.g., berries, drupes, pomes) and dry (e.g., nuts, achenes or "seeds"). Because of coevolution, native fruits prove to be the best source of nutrition for songbirds of the Mid-Atlantic in terms of quality, timing, and edibility. For instance, studies have indicated that the berries of



Cedar waxwing eats berry of Eastern red cedar.

nonnative bush honeysuckles are low in the protein and fat that birds need for fitness and energy and that the berries of Kousa dogwoods are too large for most American songbirds to consume. The more that you can incorporate a wide range of native fruits spanning different heights and seasons into your landscape, the more species of songbirds you will attract.

Trees and shrubs with early summer fruit include Betula, Populus, and Alnus (alder). One of the few herbaceous perennials with early fruit is Fragaria (strawberry). Midsummer fruit ripens on such woody plants as Salix, Amelanchier (serviceberry), Sassafras, Lindera (spicebush), Rubus (raspberry), and Vaccinium (blueberry). The fruit of most other woody and herbaceous plants ripens in late summer or fall to meet the demand of hungry juvenile and migrant songbirds, in addition to breeding adults who survived the summer. Of course, anyone who grows blueberries can tell you that birds usually eat the fruit before it ripens. Such is the case for most fruits. Still, it is important to grow a wide variety of fruiting plants, especially those like *Ilex* (holly) and Juniperus (juniper) whose fruit can persist all winter.

Water

Like other terrestrial lifeforms, songbirds must ingest water to survive. Even songbirds that obtain most of their water through eating insects or berries usually enjoy the occasional sip of pure water. Many of the same sources of shallow water suitable for drinking are also convenient bathing spots.

The easiest way to provide water for songbirds is via birdbaths, which should feature no-slip surfaces and shallow (2" or less) bowls. Several baths in a variety of heights (from almost flat to 30") and various locations will attract a greater number of species. Changing the water at least once per week keeps it suitable for drinking and all but eliminates the chances of breeding mosquitoes. Keep low-growing vegetation several feet away to deter predators; provide taller shrubs or trees close by for birds to safely preen and dry their plumage.

When it comes to attracting songbirds, water features seem to be the anchor stores of the backyard: the higher the quality, the more desirable the patrons. For this reason, I highly recommend creating a naturalized water garden stocked with native marginal plants. The sound of moving water alerts night-flying migrants to its presence and encourages them to land nearby. Water features also establish a whole new ecosystem full of insects and fruits for birds to consume and also provide mud and algae for nestbuilding.

Cover

In order to provide cover for songbirds from predators and the elements, a garden should provide suitable nesting sites and materials as well as shelter for fledglings and adults.

Ovenbirds, song sparrows, and Eastern towhees are some of the songbirds that nest on the ground in wooded or shrubby areas. To attract such ground nesters, allow duff to accumulate around trees and shrubs and underplant them with ferns and other herbaceous vegetation. Brush piles provide nesting sites and shelter for sparrows, wrens, and thrashers.

Every stratum of vegetation shrubs, vines, understory trees, and canopy trees—contains suitable nesting



Red-winged blackbird on nest in common cattails.

Marc's Top Recomendations to Attract Songbirds

Over the more than ten years that I have been rehabilitating my property to attract songbirds, I have seen that the following practices contribute substantially to increase their number and diversity.

Simulate the structure of a forest or forest edge by providing layers of native vegetation: canopy trees, understory trees, shrubs, and herbaceous perennials. Songbirds instantly recognize quality habitat.

Avoid or minimize the use of toxic herbicides and pesticides. Even if they do not kill food insects or songbirds, toxic chemicals can weaken them and make them susceptible to disease, parasites, and predation.

Leave leaves alone. Leaf litter provides an excellent foraging area and increases the overall sensation of having a quality forest.

Support local land conservation agencies. Our yards seldom provide habitats large enough to sustain many breeding songbirds. Without conserved lands nearby, we would not have as many songbirds.

➤ Keep cats indoors, or bell* or collar** cats, especially during spring breeding season. Outdoor cats are the leading cause of death among both birds and mammals in the United States, killing between a widely estimated 20–100 million up to 3.7 billion birds each year.

➤ Reduce lawn space. Turn as much of your property as you can over to native plants. A diversity of native plants and insects will attract many more songbirds that the monoculture of turf. If you do maintain turf, mow it as high and as infrequently as possible and allow insect-friendly "weeds" such as violets, clover, dandelions, and plantain to remain.

* www.saga.co.uk/magazine/homegarden/pets/cats/protecting-gardenbirds-from-cats

** www.audubon.org/news/how-stopcats-killing-birds locations for different songbirds, so be sure to include as many strata as you can in your design. Densely branched evergreen trees and shrubs, including *Juniperus, Ilex,* and *Picea* (spruce) offer winter shelter, as well as valuable nesting sites.

Many songbirds, including chickadees, titmice, wrens, swallows, and bluebirds, nest or seek shelter in the cavities of live or dead trees. Such cavities may occur naturally in decayprone live trees, like Acer or Quercus, or be excavated by woodpeckers. Woodpeckers may excavate holes in living or dead trees, though they generally avoid live trees with profuse sap (e.g., Acer, Pinus, Picea) or very hard wood (e.g., *Quercus*, *Juglans*). Just about any dead tree or large branch will do, however, so consider leaving these snags in place if they do not present a safety hazard.



Baltimore oriole pulls fiber from Eastern bluestar for nest.

Twigs, feathers, lichen, moss, mud, fur, plant fibers, and algae comprise some common nesting materials. The loose, fissured bark of *Vitis* makes ideal nesting fabric, as do grass leaves and the cellulose fibers from the stems of *Amsonia* (bluestar), *Asclepias* (milkweed), and *Phytolacca* (pokeweed). Do not cut back these herbaceous plants in the fall, but let the stems and leaves weather throughout the winter and remain standing until



Common yellowthroat eats Joe Pye weed seeds during fall migration.



Chipping sparrow and Northern cardinal bathing.

at least Memorial Day. Watching orioles, catbirds, jays, cardinals, and other songbirds peel fibers from these dead stems is well worth a few gasps from the members of your garden club. The floss of *Asclepias* and *Cirsium* (thistle) seeds also provides fibers for the nests of goldfinches, warblers, and hummingbirds.

Summary

Songbirds help maintain a healthy, balanced ecosystem and preserve biodiversity. To attract the greatest variety of songbirds to your yard, use native trees, shrubs and herbaceous plants in naturalized layers, provide an attractive water feature, and avoid using toxic chemicals.

And don't forget to take the time to just sit and enjoy their beauty. Why should you garden for songbirds? Because you can!

By incorporating a small-scale green roof into your premises, you can provide ecological services including habitat creation for birds and insects, pollinator sustenance, and enjoy pestfree gardening while moving toward more sustainable living. Your small efforts combined with those of others in your community can contribute these environmental advantages while conferring health benefits to you.

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Ed Note: Unless otherwise indicated, all pictures in this article are ©Marc Radell.

Some Native Plants That Provide Food for Songbirds

(also look for other native species in the represented genera)

Botanical Name	Common Name	Attracts Insects	Fleshy Fruit	Dry Fruit	Other Attributes
Acer saccharum	Sugar maple	Yes		Late	Provides nesting cavities, early pollen, and sap
Betula nigra	River birch	Yes		Early	Hosts ~400 species of caterpillars, spring seeds
Celtis occidentalis	Common hackberry	Yes	Late		Host for hackberry emperor butterfly
Fagus grandifolia	American beech	-		Late	Beechnuts are among most important wildlife food
Nyssa sylvatica	Blackgum	Yes	Late		Provides nesting cavities, special value native bees
Pinus strobus	White pine	Yes		Late	Evergreen, hosts ~200 species of caterpillars
Prunus serotina	Black cherry	Yes	Late		Fast grower with high wildlife value
Quercus alba	White oak	Yes		Late	Jays and woodpeckers cache acorns for winter
Salix nigra	Black willow	Yes		Mid	Hosts ~400 species of caterpillars
(Inderstory Trees (less than 65' tall)					
Amelanchier arborea	Downy serviceberry	Yes	Mid		40 bird species eat fruit, special value native bees
Cornus florida	Flowering dogwood	Yes	Late		High wildlife value
Juniperus virginiana	Eastern redcedar	-	Late		Evergreen, winter-persistent, berry-like cones
Malus coronaria	Sweet crab apple	Yes	Late		Thickets provide cover, special value native bees
Rhus typhina	Staghorn sumac	Yes	Late		Winter-persistent berries, special value native bees
Sorbus americana	American mountain ash	Yes	Late		Special value native bees
Sassafras albidum	Sassafras	Yes	Mid		Larval host for silk moths and swallowtail butterflies
Vines					
Lonicera sempervirens	Trumpet honeysuckle	Yes	Late		Semi-evergreen leaves, cover, fruit
Parthenocissus	Virginia creeper	Yes	Late		High wildlife value, larval host for sphinx moths
Vitis riparia	Riverbank grape	Yes	Late		High wildlife value
Shrubs					
Cornus amomum	Silky dogwood	Yes	Late		High wildlife value
llex verticillata	Winterberry	-	Late		High wildlife value in winter
Lindera benzoin	Spicebush	Yes	Mid		Larval host for silk moths and swallowtail butterflies
Morella pensylvanica	Northern bayberry	-	Late		Semi-evergreen with winter-persistent berries
Rubus occidentalis	Black raspberry	Yes	Mid		Abundant summer food, cover
Sambucus nigra subsp.					Berries eaten by 48 species of birds, special value
canadensis	American elder	Yes	Late		native bees
Vaccinium corymbosum	Highbush blueberry	Yes	Mid		Special value native bees
Viburnum dentatum	Southern arrowwood	Yes	Late		A top berry-producer, special value native bees
Herbaceous Perenníals - Woodlands/Shade					
Phytolacca americana	American pokeweed	-	Late	Late	Fall berries, winter-persistent seeds
Fragaria virginiana	Wild strawberry	Yes	Early		Special value native bees
Eurybia divaricata	White wood aster	Yes		Late	Tolerates dry shade
Solidago flexicaulis	Zigzag goldenrod	Yes		Late	Special value native bees
Chasmanthium latifolium	Northern sea oats	Yes		Late	Nesting materials, host plant for skippers
Herbaceous Perennials - Openings/Sun					
Coreopsis tripteris	Tall coreopsis	Yes		Late	A goldfinch favorite
Echinacea purpurea	Purple coneflower	Yes		Late	Winter-persistent seeds, special value native bees
Eutrochium purpureum		Voc		Lato	Chapiel value native hear
	Sweet Joe Pye weed	res		Late	special value native bees
Rudbeckia laciniata	Sweet Joe Pye weed Cutleaf coneflower	Yes		Late	Special value native bees
Rudbeckia laciniata Schizachyrium scoparium	Sweet Joe Pye weed Cutleaf coneflower Little bluestem	Yes		Late Late Late	Special value native bees Special value native bees Nesting materials, host plant for skippers

Early = before summer solstice

Mid = between summer solstice and autumn equinox

Late = after autumn equinox

prepared by Marc Radell, Penn State Master Gardener Volunteer (2016)