

# Young Forest Guide

WILDLIFE NEEDS YOUNG FOREST HABITAT.  
YOU CAN HELP.





*American woodcock. Credit: Tim Flanigan. Partners in the American Woodcock Conservation Plan have begun to halt this bird's rangewide population decline by making young forest habitat over the last decade: see [www.timberdoodle.org](http://www.timberdoodle.org).*

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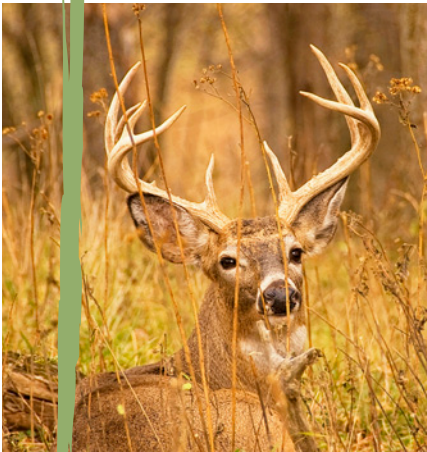


Jeremy Holtz, right, Wisconsin Department of Natural Resources, visits three generations of the Kroening family to talk about making young forest for wildlife. Credit: Jeremy Holtz

*Young forest can be an old field coming up in saplings, a shrubby wetland, or new trees springing up after logging. Many wild animals need young forest habitat.*

*Cover: Background habitat photo by Charles Fergus. Brown thrasher by Ed Guthro, group photo by Jeremy Holtz, New England cottontail by Kelly Boland, logging equipment by Steven Eustis.*

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Photos from top, clockwise: Adirondack young forest by Eric Ross, wild geraniums by Richard Martin, springtime shrubs by Kelly Boland, whitetail deer by Deborah Flanigan, yellow warbler by Tom Berriman. Center, bobwhite quail by Norman Bateman

# Young Forest

IS CRITICALLY IMPORTANT



Box turtle. Credit: J.D. Mayes

To keep the land healthy and to have a diversity of wildlife, we need a balance of different habitats, including enough young forest. Landowners and land managers can make young forest to help wildlife from box turtles to black bears.

## Introduction

This publication seeks to familiarize people with young forest and to inspire them to create such habitat – both to benefit wildlife and to increase their own enjoyment of nature and the land. Written for private landowners, it should also be useful for those who manage public lands, such as state wildlife areas, parks, or forests; town or county forests; and nature preserves, land trust properties, and hunting clubs. It's not meant to be a how-to manual but rather an introduction, fostering a basic understanding about an important habitat on which many kinds of wildlife depend.

## “In-Between Habitat”

The term “habitat” describes the places where animals find food and water, rear their young, and hide from predators. Young forest is sometimes called “early successional habitat.” You might think of it as “in-between habitat,” since it's not grassland or farmland and it hasn't become older forest yet.

The first growth stage of a woodland, young forest consists of small trees, shrubs, wildflowers, and grasses growing in places where sunlight reaches the ground. Young forest tends to be thick, tangled, and less than 20 feet tall. Thanks to its profuse plant life,



*In most places, we no longer let beavers dam stream systems and flood large areas, killing older trees that would have been replaced by younger ones. Credit: Charles Fergus*

young forest offers abundant food for wildlife (it's been called "nature's supermarket") as well as important shelter and hiding cover.

This short-lived habitat has dwindled in the East and the Upper Midwest over the last 50 years as our forests have increasingly become middle-aged. As a result, the populations of many kinds of wildlife that need young forest have fallen. Reptiles like wood turtles, box turtles, and green snakes. Birds such as whip-poor-wills, woodcock, ruffed grouse, bobwhite quail, brown thrashers, indigo buntings, and golden-winged warblers. Mammals like bobcats, snowshoe hares, and New England and Appalachian cottontail rabbits.

## Disturbances Yield Young Forest

Young forest arises following a disturbance in a wooded area caused by logging, a wildfire, a storm, an insect infestation, or even a long-ago event such as land cleared for farming and then abandoned and allowed to return to a forested state.

Young forest can take many forms. It can be the shoots and sprouts of small trees springing up after a timber harvest. An old field filling in with shrubs and saplings. A streamside thicket of small trees and shrubs growing on damp soil. Young forest can be a pine barrens greening up again following a wildfire or a controlled burn carried out by a trained fire crew.

**There used to be significantly more young forest before humans began developing the land and preventing natural forces, such as wildfires and floods, from creating such habitat. Today, young forest may make up less than 2 percent of woodlands in some areas.**

Biologists refer to young forest as *ephemeral*. That means it doesn't last long – usually only 10 to 20 years on a given site, depending on soil fertility, the length of the growing season, and rainfall. As small trees grow bigger and taller, their leafy canopies gradually knit together, shutting out sunlight. This lack of light causes ground-level vegetation to thin out. Gradually the habitat becomes older woodland, useful to a different group of wildlife.

Today we have more than enough older forest in our region. In part, that's because we have blunted many of the natural disturbances that formerly brought a steady stream of young forest to the land. To protect lives and property, we put out wildfires that once would have swept across many acres, killing older trees and spurring the dense regrowth of small trees and shrubs. Our dams stop floods from scouring away older forest along rivers. We no longer let beavers dam stream systems and flood large areas, killing big trees that would have been replaced by small ones. Of the many farms abandoned in the late nineteenth and early twentieth centuries, most have either been developed with houses or shopping centers or roads, or they've turned back into mature woods as a result of natural forest succession. Logging – once a major producer of young regrowing forest – has slowed or stopped in many areas. Tree blowdowns from storms give rise to patches of young forest, but such events don't occur frequently enough – or in the right places – to create enough habitat for wildlife.

Before settlement, it's likely that our region had significantly more young forest. In a recent study of lands in the Upper Great Lakes Young Forest Initiative in Michigan, Wisconsin, and Minnesota, researchers combined computer modeling with satellite data on forest canopy disturbances to estimate the amount of young forest available to wildlife. They found that just 3.4 percent of Bird Conservation Region 12 (Boreal Hardwood Transition) and 0.9 percent of Bird Conservation Region 23 (Prairie Hardwood Transition) could be considered “young” (0 to 20 years old). In the same two BCRs, only 1.0 percent and 0.2 percent of the habitat in woody wetlands was in the 0 to 20 years old range.<sup>1</sup> In the East, recent data from the USDA Forest Service's Forest Inventory and Analysis Program suggest that only 4.3 percent of New York's forests, 5.6 percent of New Jersey's forests, 1.9 percent of Massachusetts's forests, and 1.7 percent of Rhode Island's forests are in a young growth stage.<sup>2</sup>

This shift to older woodland has caused the populations of many animals to steadily decline. State wildlife agencies in a 17-state region from Maine to Minnesota and south to Virginia and Ohio list more than 60 kinds of young forest wildlife as Species of Greatest Conservation Need. (Other wild animals that generally live in older woods, and whose



*Most woodland in the East and Upper Midwest has become middle-aged. Creating more young forest helps many kinds of wildlife that need such habitat. Credit: Charles Fergus*



*Nature observers find many different kinds of birds in young forest habitat. Credit: Richard Martin*

## How to Get Advice and Find Funding

Landowners and land managers can get advice on how to make young forest from private lands biologists with state wildlife or forestry agencies, from the U.S. Fish and Wildlife Service and the USDA Natural Resources Conservation Service (NRCS), and from professional foresters who understand wildlife habitat needs. Harvesting timber can generate income for a landowner. Conservation agencies also offer financial incentives for making this type of habitat. The Wildlife Management Institute employs a network of biologists to help landowners plan and fund projects. Check out the “Contacts” section of WMI’s young forest website: [youngforest.org/content/youngforest-contacts](http://youngforest.org/content/youngforest-contacts)

populations have been more stable, also need young forest at various times of the year and during different stages of their lives.)

Fortunately, we have the knowledge and the ability to make young forest where it can deliver the greatest benefits to all wildlife, by using habitat management techniques to mimic natural disturbance events.

Over the last decade, many conservationists and landowners have joined a science-based effort called the Young Forest Project ([www.youngforest.org](http://www.youngforest.org)). Partners include state and federal agencies, wildlife organizations, land trusts, timber companies, towns and counties, colleges and universities, the U.S. military, Native American tribes, and foresters helping private citizens manage their farms, woodlands, and vacation properties.

Most forested land in the East and the Upper Midwest is privately owned – over 80 percent in some states – so it’s crucial for the future of our wildlife that private landowners create young forest on their properties. State and federal cost-sharing funds can help landowners make this important habitat.

**Many conservationists and landowners have joined a science-based effort called the Young Forest Project ([www.youngforest.org](http://www.youngforest.org)).**





*At Boyd Woods in western Connecticut, aspen trees sprouted prolifically following timber harvests designed to diversify the sanctuary's woodlands. Credit: Richard Martin*

## **YOUNG FOREST SUCCESS STORY:** *Bringing Back Birdsong and Cottontails*

In 1995, an heir of Margery Boyd donated a 102-acre property in western Connecticut to the Litchfield Hills Audubon Society. Twin Brook Farm had meadows, rock outcroppings, seasonal ponds, and woods – lots of woods. Litchfield Audubon named the property the Boyd Woods Sanctuary, and it quickly became a popular destination for hikers and wildlife-watchers.

Margery Boyd had lived at Twin Brook Farm from 1926 until 1992 and recorded every bird she saw. Says Litchfield Audubon member Debbie Martin, “Margery’s birding diary shows that many kinds of birds that need shrubland and young forest were common during the period when her property was reverting from farmland to forest.” By the time Litchfield Audubon received the land, it

was 90 percent wooded. “The woods were beautiful, but very quiet,” Martin says. “As middle-aged and mature trees had taken over, many species of birds that Margery recorded had disappeared.”

In 2012, biologists with the Connecticut Department of Energy and Environmental Protection approached Litchfield Audubon about using timber harvests to create new young forest habitat for the New England cottontail, the region’s only native rabbit.

Many society members objected, mainly on aesthetic grounds. “After visiting habitat projects in neighboring towns where timber had been harvested,” Martin says, “we were horrified by what we saw: treetops, logs, and piles of brush strewn all over the place. Boyd Woods was a lovely, peaceful spot. We didn’t want that kind of a mess on our property.”



*New England cottontail.  
Credit: Victor Young/NHFG*

But the Audubon members began to see things differently. “We learned about the threatened New England cottontail, and all the other species of wildlife that are also struggling due to the disappearance of young forest environments,” Martin recalls. Connecticut recognizes 34 kinds of young forest wildlife as Species of Greatest Conservation Need, largely because their habitat has vanished in recent years. “On that list were many of the birds Margery Boyd once counted as common,” Martin says. “We realized then that we could help bring those birds back to Boyd Woods. As an Audubon Society, committed to managing

our sanctuary for the preservation of wildlife, how could we not participate in this project?”

In 2014, members watched as loggers began an 8-acre clear-cut at Boyd Woods. Another 4 acres were cut in 2015. (Both projects received funding through the USDA Natural Resources Conservation Service.) Within a year of

each timber harvest, small trees, shrubs, and ground plants had already sprung up on the logged sites.

Now it’s impossible to think of the recently cut woods as “damaged” or “devastated,” Martin reports. “Although they still appear somewhat messy, when spring arrives these new habitats are full of life. Towhees

and fox sparrows sing from the brush piles.” (Workers built three brush piles per acre.) “Indigo buntings, field sparrows, and catbirds join the chorus along the edges of the cut areas. On our annual Evening Woodcock Walk, an amazing number of American woodcock sang and performed courtship flights over the recently expanded openings.”

The renewed sunshine spurred the growth of plants and wildflowers that previously weren’t present. “Many of them are beautiful and beneficial to butterflies and bees,” Martin says. Tracks in winter’s snow demonstrate that “a variety of animals are visiting the clear-cuts.” New England cottontails have been confirmed on another preserve three miles from Boyd Woods. “We’re confident that when New England cottontails show up here, they, too, will find this habitat accommodating.”

Says Martin, “We readily admit that the ‘messy’ clear-cuts that now diversify our landscape were the best thing we could have done. As we’ve created a mix of conifers, shrubland, and young forest – with a total of 17 acres cut between 2005 and 2015 – we’ve truly become a wildlife sanctuary.”

For more young forest success stories, visit [www.youngforest.org](http://www.youngforest.org) and click on “Habitat Projects” for your area. Many young forest demonstration areas are open to the public so visitors can see this important habitat firsthand.



*Indigo buntings nest and feed in young forest where shrubs, trees, and low plants grow thick. Credit: Tom Berriman*

# People Own Woodlands

FOR MANY REASONS



*Putting up bluebird boxes on a spring day at Boyd Woods Sanctuary in Connecticut. Credit: Richard Martin*

Many people go birding, hiking, cross-country skiing, or hunting in young forest settings. They get great satisfaction from seeing diverse wildlife and knowing that their habitat management efforts are helping to bring back wildlife whose populations have been falling.

**P**eople own woodlands for many reasons. Some desire a quiet, untouched haven where they can relax and listen to birdcalls, watch wildlife, or simply soak up the soothing ambiance of the woods. Some landowners enjoy harvesting firewood or maintaining roads and trails. Others like to hike, hunt, snowshoe, pick berries, or take photographs on their land. Seeing abundant and diverse wildlife adds enjoyment to all of these activities.

## Taking Action

Conservationists working together on the Young Forest Project don't want to pressure folks into doing things that go against the goals and priorities they've set for their wooded acres. But many landowners don't realize how important young forest is for wildlife, or the fact that they can actively work to create this vibrant habitat. Landowners who wish to see more and a greater variety of songbirds – or who care about



*Hunters head for young forest in search of game. Credit: © NHFG/Jon Charpentier Photo*

preserving or enhancing wildlife diversity – or who want to improve hunting opportunities – are invited to join in the effort to return more young forest to the land. Taking actions to create young forest in the right way and in the right places almost always yields a swift and positive wildlife response.



*Aspen grows from Maine south to Pennsylvania and in the Upper Midwest. A valuable timber tree, it springs up thickly following logging, creating excellent habitat for wildlife. Credit: Charles Fergus*

Conservationists and landowners make young forest by mimicking natural disturbance events through the use of timber harvests, mowing, shrub and tree planting, and controlled burning, all of which stimulate the dense regrowth of small trees and shrubs.

To enjoy a diversity of wildlife, we need a diversity of habitats. It's now our responsibility to do what nature once did: create "disturbances" that move around on the land giving rise to patches of young, regrowing woodland. And we need to do this now, before the populations of many young forest animals fall even further, to the point that they become threatened or endangered – or vanish from some areas altogether.

### **YOUNG FOREST SUCCESS STORY:** *Educating and Engaging Wisconsin Forest Owners*

The Wisconsin Young Forest Partnership draws together federal and state agencies, the Wisconsin County Forests Association, the Wisconsin Wildlife Federation, the Ruffed Grouse Society, and several large timber companies. Says Amber Roth, a habitat biologist with the Golden-Winged Warbler Working Group, "Our goal is to educate and engage landowners who are not currently managing their forested lands, so that they'll consider all of their management options and, we hope, decide to make and enhance young forest for wildlife."

#### **Landowners explain why they've joined the Partnership:**

**Les Strunk, Oconomowoc:** "What went through my mind was this: If I make the habitat better for birds, it'll also be better for deer. The alder shearing [in which a tracked machine shears down alder shrubs,

stimulating them to grow back thicker and healthier] gave me an opportunity to go in and open up old trails, plus put in new trails to get around on my property."

**Peter Ourada, Antigo:** "We plan to continue using timber harvests to make our property a productive woodland where we can conduct other commercial harvests in the future. What we're doing will help wildlife, and it will help us, too, by creating better hunting conditions along with more opportunities to view wildlife. What I've learned has helped me become a better landowner and get more enjoyment out of my land."



*Bird hunters seek out young, regrowing forest to find ruffed grouse and woodcock. Credit: Dave Kenyon*



Veronica Berg, right, visits with equipment operator Mike Riggle, taking a break from mulching older shrubs to spur the regrowth of thick new habitat on the Berg property in northern Wisconsin. Credit: Todd Berg

Young forest grows quickly. On sites with good moisture and soils, vegetation will come back strongly in one year. On sites with poor soils, it may take a few years to get abundant regrowth.



Ruffed grouse. Credit: Wisconsin DNR

**Mike Gardner, Rusk County:** “The work gave me a management toehold. After that initial push, I can now do a lot of the continuing habitat work myself, including mowing with a tractor to keep the shrubs young and vigorous. The project has let me renew my personal commitment to having a diversity of wildlife habitats of different ages on my land.”

Dan Eklund is a wildlife biologist with the U.S. Forest Service on the Chequamegon-Nicolet National Forest in northern Wisconsin. “To have a healthy ecosystem, you need to have some young forest around,” he says. “A lot of animals that breed in mature forest also need young forest at one time or another – and a lot of animals that breed in young forest need mature forest as well. The key is keeping all the different elements in the right balance.”

For more information, visit:

<http://youngforest.org/wisconsin/wisconsin-young-forest-partnership>

# Making Young Forest

FOR WILDLIFE



*Pokeberry. Credit: Richard Martin*

To learn what young forest looks and “feels” like, visit a habitat demonstration area near you.

**A**re you a landowner with 10 to 100 or more acres of wooded or vacation land? Do you manage a forested tract for a town, land trust, hunting club, or Audubon or other conservation chapter? Are you a state forester, or are you in charge of a state park? If so, part of your mission may be making the land more hospitable to wildlife and improving people’s wildlife-oriented recreation.

Taking the first steps toward conducting habitat management actions to bring a young forest component to a tract of land can be daunting. It can also be very rewarding. Below are some suggestions on how to move forward.

## How to Get Started

Study this publication, including the **Young Forest Success Stories** that describe how others have made young forest on their land. Consult the **Management Techniques** that follow in this chapter, plus the **Helpful Hints**. Look at the photos to see the different forms that young forest can take and the wildlife that use this vital habitat.

To get an even better idea of what young forest looks and “feels” like, visit a habitat demonstration area near you. See [www.youngforest.org](http://www.youngforest.org), [www.timberdoodle.org](http://www.timberdoodle.org), and [www.newenglandcottontail.org](http://www.newenglandcottontail.org) to find demonstration areas that are open to the public.



*Thick young forest provides food and escape cover to dozens of kinds of wildlife, including both rare and common species. Credit: Hunter Carbee*

Get in touch with a professional habitat biologist or forester to come look at your property and explain which technique or combination of techniques will work best. The U.S. Fish and Wildlife Service and the USDA Natural Resources Conservation Service offer programs to help you plan and carry out young forest management. Many state wildlife and forestry agencies have private lands biologists who will walk your property with you and give you free advice. Same with the network of biologists under contract with the Wildlife Management Institute, along with natural resource specialists with the Ruffed Grouse Society, National Wild Turkey Federation, and other partners in the Young Forest Project.

On the right side of the [www.youngforest.org](http://www.youngforest.org) homepage, click on the **Contacts** link in the box **Want to Make Some Young Forest?** for names, e-mail addresses, and

telephone numbers. These experts can guide you through the process of planning habitat management, tell you whether management actions will pay for themselves, and help you find funding and grants to cover out-of-pocket expenses.

Want to learn more about specific habitat management techniques such as harvesting trees and refreshing old shrubs? Consult [Managing Grasslands, Shrublands and Young Forests for Wildlife](#), a publication of the Northeast Upland Habitat Technical Committee sanctioned by the Northeast Association of Fish and Wildlife Directors. This manual focuses on states from Maine south to Virginia and also has application in the Upper Midwest. It is available for downloading (9.7 megabytes) under “Guidebooks and Manuals” in the “Resources” section of [www.youngforest.org](http://www.youngforest.org), along with PDFs of many other helpful publications.



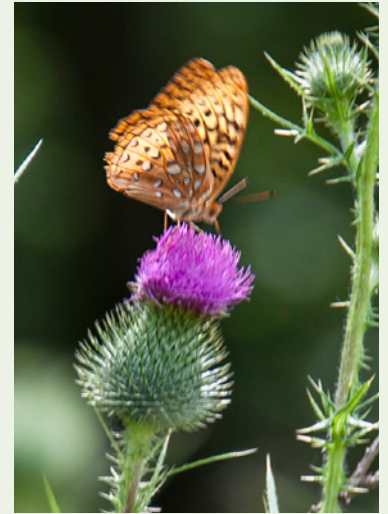
# Management Techniques:

## Harvesting Trees

At first a logging job looks messy, like a bad haircut. But in just one growing season, the stumps, root systems, and nuts of harvested trees send up thousands of new little trees. Light reaching the ground spurs the growth of plants such as blueberries, wild strawberries, blackberries, pokeweed, grasses, sedges, and wildflowers. Soon the resulting young forest provides abundant food and thick hiding cover to a tremendous range of wildlife, including dozens of kinds of reptiles, birds, and mammals. After around 20 years, trees have grown to a more-mature state, offering habitat to a different suite of wildlife; by then, a landowner or land manager may have found another place on the property to create new young forest.



*Following an even-age timber harvest, it doesn't take long for a stand of trees to grow back as wildlife-friendly young forest. Credits: fresh cut, Terry Jones; other three photos, Charles Fergus*



*Butterflies and other pollinating insects abound in old fields.  
Credit: Richard Martin*

*To expand habitat for New England cottontails and other wildlife, volunteers plant native shrubs in an old field at Rachel Carson National Wildlife Refuge in Maine. Credit: USFWS*

## Improving and Maintaining Old Fields

Old fields can be planted with native shrubs to create wildlife-friendly thickets – or shrubs already growing on the site can simply be allowed to spread on their own. Plants that offer excellent food (fruits, seeds, and buds) and hiding cover include pokeweed, alder, dogwood, hawthorn, crabapple, elderberry, winterberry, nannyberry, blackberry, wild plum, wild raisin, sumac, and Virginia creeper. Many shrubs flower beautifully in the spring, and turn brilliant colors in autumn to attract migrating birds, which feed on the shrubs' fruit and then disperse their seeds during their travels. Old fields support coneflower,

milkweed, black-eyed susans, and other flowering plants used by pollinating insects. Apple trees in old fields provide important food for wildlife; landowners often find it rewarding to take a chainsaw and “release” apple trees by cutting down surrounding trees before they shade the apple trees out. To keep an old field functioning as productive habitat, periodically remove taller hardwood trees (they make great firewood, or brushpiles for rabbits to hide in). Among the many animals that use shrubby old fields are ruffed grouse, woodcock, wild turkeys, bobwhite quail, ring-necked pheasants, cottontail rabbits, white-tailed deer, black bears, and songbirds such as towhees, brown thrashers, kingbirds, indigo buntings, gray catbirds, golden-winged warblers, and field sparrows.

## Cutting Back Older Shrubs

When shrubs get too old, they become spindly and sparse, and their habitat value to wildlife lessens. Low-impact machines with mulching or mowing heads can chew down older shrubs such as alder, dogwood, willow, or hawthorn, causing them to grow back more densely. Machines do this work quickly and efficiently, but it's also possible for individuals to cut back trees and shrubs using a chainsaw. Mowing or cutting stimulates the root systems of the shrubs to send up copious new shoots. Not only are those woody plants rejuvenated, but a whole suite of ground plants fills in the spaces between them, such as wild strawberry, milkweed, bergamot, clover, and plantain. Stands of dense shrubs provide great habitat for grouse, woodcock, songbirds, cottontail rabbits, moose, black racer snakes, wood turtles, and many other animals.



*Alder shearing should be done in winter when the ground is frozen to avoid causing damage. Winter mowing also greatly improves sprouting the following year. Credit: Jeremy Holtz*



*Controlled burning reduces flammable fuel on the ground and promotes a dense regrowth of trees, shrubs, and other plants. Credit: Joel Carlson*

## Controlled Burning

Native Americans used fire to renew wildlife habitats and attract the animals they hunted. Today, trained specialists can set fires that knock back older vegetation, increase soil fertility, and spur the dense regrowth of trees, shrubs, and other plants. Controlled burning (also called “prescribed burning”) may not be an option for a small private landowner, but those who manage state properties, land trust parcels, and nature preserves can organize and carry out controlled burns to refresh areas of young forest. Trained crews use firebreaks, fire engines, and up-to-the-minute weather forecasts to keep fires under control. Periodic small fires reduce the amount of flammable fuel on the ground, making it less likely that a big wildfire will arise in the future to endanger human lives and property. Young forest created through controlled burning attracts birds, mammals, reptiles, and a huge range of insects, including many beneficial butterflies and moths. Bats feed on flying insects; birds such as prairie warblers, towhees, and bobwhite quail quickly home in on new plant growth for feeding, nesting, and rearing young. Shrubs and trees that grow vigorously in the wake of a fire include blueberry, blackberry, pitch pine, fire cherry, black cherry, and many oaks, especially low, dense-growing scrub oak.



*Golden-winged warblers use brushy habitat with a few large trees to provide feeding opportunities and singing perches. Credit: Jeff Larkin*

## *Helpful Hints:*

### **Think 5-5-5**

It's ideal to make young forest in large patches – 10, 20, even 50 acres. But that's not always practical. Here's another approach to adding a young forest component to a wooded property:

“Think 5 – 5 – 5.”

Using this technique, a landowner divides his or her woodland into blocks 5 acres and larger, and harvests the trees on one or more of those blocks every 5 years, so that areas of young forest continually cycle through the property. The goal is to keep at least 5 percent of the woods in a young growth stage at any given time. Not only does this

help wildlife, it also encourages a healthy mix of different-aged trees as well as different species of trees.

In some areas, browsing by deer may make it tough for small patches of young forest to grow back. Before launching a “5 – 5 – 5” effort, consult with a professional forester, a state or federal private lands biologist, or a biologist with the Wildlife Management Institute (see <http://youngforest.org/content/youngforest-contacts>).

Remember, most young forest becomes less useful to wildlife after 10 to 20 years. Renewing young forest can be a long-term commitment, with management activities planned well into the future. Landowners can also cooperate with their neighbors to put together projects taking in several properties.

Many conservation organizations use timber harvests and other management techniques to create young forest for wildlife and to improve overall forest health. Organizations like The Nature Conservancy, Audubon, the Ruffed Grouse Society, and the National Wild Turkey Federation work to create and renew young forest throughout the East and the Upper Midwest.

### Watch Out for Invasives!

In some areas, stands of forest and shrubland may include exotic invasive shrubs (often simply called “invasives”) such as autumn olive, multiflora rose, Japanese barberry, Asiatic bittersweet, bush honeysuckle, and buckthorn. These aggressive intruders often spread at the expense of native plants that offer longer-lasting and more-nutritious food for wildlife. Contact habitat experts and plan carefully before taking actions – such as mowing older shrubs or harvesting trees – to prevent invasives from spreading. Spot-treating non-native plants with herbicides both before and after a timber harvest can give native trees and shrubs an edge. It may make sense to gradually remove invasives over a period of years while replacing them with native shrubs.



*Multiflora rose. Credit: Charles Fergus*

### Where Not to Make Young Forest

It's important to identify areas where we can help the greatest number of wild animals by making and refreshing young forest. It's equally important to know where not to create this type of habitat.



*U.S. Fish and Wildlife Service biologist Ted Kendziora explains habitat management options to landowner Tom McAvoy of Scotland, Connecticut. Credit: Charles Fergus*



*Young trees grow in an old field at Bellamy River Wildlife Management Area, a young forest demonstration area in southern New Hampshire. Credit: Charles Fergus*

Logging on steep slopes can lead to erosion. Cutting trees that cast shade on temporary woodland pools may cause those features to dry up too quickly, stranding young salamanders and frogs before they've had time to develop and leave the ponds as adults.

Large blocks of unbroken older forest in areas that already have ample young forest should be carefully evaluated before logging: It may be best to let such woodlands remain as habitat for wildlife that needs older forest. Landowners should also consider the potential value of trees before harvesting them. They may decide to let stands of high-quality hardwoods keep growing, so they'll produce valuable sawlogs in the future. (On the other hand, it may make sense to regenerate a high-quality hardwood stand using an even-age timber harvest, since some forest types need this level of disturbance to grow back successfully.) Consult a professional forester when planning any timber harvest.

Responsible land managers make sure not to damage the habitats of rare, endangered, or threatened animals or plants, or special natural communities. State wildlife agencies and the U.S. Fish and Wildlife Service can advise landowners and managers whether such animals or communities occur in a given area, and can offer advice on how to plan and integrate different management activities so that wildlife is helped and not harmed.

### **YOUNG FOREST SUCCESS STORY:** *Landowners Team Up in a Pennsylvania Watershed*

What happens when a group of landowners decide to help the American woodcock, a bird whose numbers have fallen as its young forest habitat has dwindled?

Georges Valley is a small watershed in central Pennsylvania. Valley resident Lisa Williams, a biologist with the Pennsylvania Game Commission, saw the value of creating young forest along the banks of Muddy Creek. "Woodcock will feed and rear their young in the thickets that grow up and shade the waterway," she says. "Other wildlife will also thrive, including brown thrashers, indigo buntings, and whip-poor-wills, and reptiles like box and wood turtles."

The Penns Valley Conservation Association and watershed specialists with Penn State University reached out to residents through letters, brochures, site tours, and



*Lysle Sherwin (left), George Kelly, and Lisa Williams inspect a young aspen planted in a field along Muddy Creek. (Plastic tubing protects against damage from deer, rabbits, and rodents.) Credit: Charles Fergus*

a panel discussion with federal and state conservationists, explaining how young forest can help wildlife while increasing opportunities for human recreation.

Ask landowner Jerry Myers why he got involved, and he'll point to the management plan that the Pennsylvania Game Commission developed for his farm through the agency's Private Landowner Assistance Program. Workers planted alder and other native shrubs in a wet pasture. "That patch hadn't been used for 10 years," Myers says. "It's an area I don't need to mow now."

Doug Bierly, a township supervisor and another cooperating landowner, also cites the fact that he won't be mowing a pasture that his family no longer needs. The Bierlys opted for a streamside buffer of aspen, redbud,

dogwood, and crabapple, with the U.S. Fish and Wildlife Service putting in 500 trees and shrubs on 4 acres. Says Bierly, "I've noticed a definite increase in birdlife since the plantings went in."

Biologist Williams notes that Georges Valley will become increasingly important for woodcock as shrubs and trees grow and more landowners join the project. "The watershed will produce more woodcock," she says, "and migrating birds will stop and rest in places where they'll find food combined with cover to protect them from predators. Just think what could happen if projects like this were replicated up and down the Atlantic Flyway," the corridor that woodcock and other birds follow as they shift between northern breeding grounds and southern wintering areas.



*Birds that nest in mature forest, like this scarlet tanager, often take their fledglings into young forest to feed on abundant fruits and insects. The thick structure of the young forest provides protection from aerial predators like hawks. Credit: Tom Berriman*

## Young Forest is for the Birds

Many birds site their nests in areas of young forest: golden-winged warblers, prairie warblers, yellow warblers, chestnut-sided warblers, field sparrows, indigo buntings, eastern towhees, eastern kingbirds, and dozens more.

It's not just young-forest breeders that need the combination of food and dense cover that young forest provides. Recent studies have shown that birds that nest in older forest also use young forest habitat. After the young of interior-forest breeders leave the nest, their parents often lead them to nearby shrub thickets and stands of small trees growing where clear-cut timber harvests have taken place.<sup>3</sup> Among the densely growing stems, the young birds find abundant insects, fruits, and seeds, plus have a better chance of avoiding predators. Those highly nutritious foods help the youngsters grow quickly, and let both adults and young build up fat for autumn's strenuous southward migration. Deep-forest nesters that use young forest after breeding include scarlet tanagers, wood thrushes, ovenbirds, and Blackburnian and cerulean warblers, to name but a few. During migration, a wide variety of songbirds look for areas of young forest where they can rest safely in the thick habitat while "refueling" on fruits and other foods before continuing on their way.



# Appendix

## Resources

Gilbart, Meghan. 2012. Under Cover: Wildlife of Shrublands and Young Forest. Wildlife Management Institute, 87 pp. Available for purchase from: <http://www.wildlifemanagementinstitute.org/store/home.php?cat=3>

Northeast Upland Habitat Technical Committee. 2006. Managing Grasslands, Shrublands and Young Forest Habitats for Wildlife, 148 pp., online at <http://youngforest.org/resource/managing-grasslands-shrublands-and-young-forests-wildlife>.

[www.youngforest.org](http://www.youngforest.org) (The Young Forest Project)

[www.timberdoodle.org](http://www.timberdoodle.org) (all about the American woodcock and its habitat needs)

[www.newenglandcottontail.org](http://www.newenglandcottontail.org) (a rare regional rabbit that needs young forest)

<https://www.fws.gov/partners/siteMap.html> (U.S. Fish and Wildlife Service's Partners for Fish and Wildlife Program)

<http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/financial/eqip/?cid=stelprdb1242633> (USDA Natural Resources Conservation Service's EQIP Program)

## Endnotes

**1 (p. 5):** Tavernia, Brian G., Mark D. Nelson, James D. Garner, and Charles H. Perry. 2016. Spatial characteristics of early successional habitat across the Upper Great Lakes states. *Forest Ecology and Management* 372: 164-174.

**2 (p. 5):** Forest Inventory and Analysis Program. 2015. Forest inventory data online. US Forest Service, Arlington VA. <http://www.fia.fs.fed.us/tools-data/index.php>

**3 (p. 22):** Stoleson, Scott. 2013. Condition varies with habitat choice in postbreeding forest birds. *The Auk* 130(3):417-428.



Smooth green snake is a Species of Greatest Conservation Need in many states. Credit: J.D. Mayes

## Young Forest Wildlife

The following animals are some of the more than 60 species of young forest wildlife whose populations have been falling in recent decades. All are considered “Species of Greatest Conservation Need” in different states in the East and Upper Midwest.

### Mammals

Appalachian Cottontail  
Bobcat  
Canada Lynx  
Eastern Spotted Skunk  
Moose  
New England Cottontail  
Short-Tailed Weasel  
Snowshoe Hare  
Woodland Jumping Mouse

### Birds

Alder Flycatcher  
American Redstart  
American Woodcock  
Black-and-White Warbler  
Black-Billed Cuckoo  
Blue-Winged Warbler  
Brown Thrasher  
Canada Warbler  
Chestnut-Sided Warbler  
Dark-Eyed Junco  
Eastern Kingbird  
Eastern Towhee  
Eastern Whip-Poor-Will  
Field Sparrow  
Golden-Winged Warbler  
Gray Catbird  
Hermit Thrush  
Indigo Bunting  
Kentucky Warbler  
Kirtland’s Warbler  
Magnolia Warbler  
Mourning Warbler

Nashville Warbler  
Northern Bobwhite  
Olive-Sided Flycatcher  
Prairie Warbler  
Rose-Breasted Grosbeak  
Ruffed Grouse  
Rusty Blackbird  
Spruce Grouse  
Tennessee Warbler  
Veery  
White-Eyed Vireo  
White-Throated Sparrow  
Willow Flycatcher  
Yellow-Billed Cuckoo  
Yellow-Breasted Chat  
Yellow Warbler

### Reptiles

Eastern Box Turtle  
Eastern Massasauga  
Five-Lined Skink  
North American Racer  
North American Rat Snake  
Rough Green Snake  
Smooth Green Snake  
Spotted Turtle  
Timber Rattlesnake  
Wood Turtle

In addition to the animals listed above, dozens of more-common kinds of wildlife use young forest, including wild turkeys, black bears, fishers, foxes, and white-tailed deer.





For more information about the Wildlife Management Institute and its ongoing conservation work, visit [www.wildlifemanagementinstitute.org](http://www.wildlifemanagementinstitute.org). To learn more about the effort to create and restore young forest in eastern North America, see [www.youngforest.org](http://www.youngforest.org).

