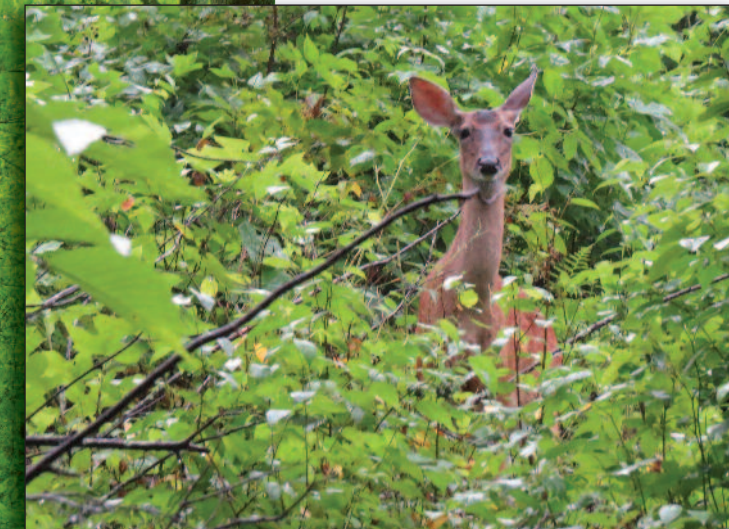


# From the Shadows

by Cristina Santiestevan







Al Bourgeois



Ralph Hensley

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Many wildlife species require the tender shoots, sprouts, and seedlings of a young forest.

*Forests should be old and dramatic. Trees should stand tall and proud. These are the lessons we learn in children's books and throughout our lives. But, it is not this simple.*

“Most things that grow need sunlight,” explains Al Bourgeois, a wildlife biologist with the Department (DGIF). “Some things can grow in the shade of trees, but the oak and the hickory—which is primarily what we have out here in the Appalachian Mountains—need a lot of sunlight.” Put another way, young oaks and hickories and many other trees and plants cannot grow well in the shadows of their elders. If the forest canopy remains undisturbed, those sprouts and seedlings will

remain confined to the understory, unable to mature and produce the seeds or nuts that would support wildlife and another generation of trees. Eventually, the forest becomes an arboreal retirement community, populated almost entirely by elderly specimens.

A mature forest appears dramatic to the human eye. The trees stand tall, as we imagine they should. The understory is often relatively open, inviting hikers and others to stroll beneath the canopy. It is the forest of our childhood storybooks.

But from the perspective of many wild species, both game and nongame, an older forest does not meet their needs. Over-mature trees often produce less mast—the nuts and fruits of forest trees—such as acorns and hickory nuts. This means less food for deer, turkey, bear, ruffed grouse, and other mast-eating animals; so, their numbers decline. Those towering trees also block sunlight from reaching the forest floor, which is why shrubs are scarce. As a result, ground cover is limited and the deer, bear, and turkey, as well as smaller mammals and birds have few places to hide

from predators, and their numbers also decline. Some animals thrive in the open understory of an over-mature forest, but many do not.

In Virginia and elsewhere, wildlife biologists, hunters, and nature lovers all agree that many forest-dependent species are declining. The list is long and varied, including woodcocks, turkeys, ruffed grouse, cottontail rabbits, and other game animals, as well as nongame species such as prairie warblers, least weasels, and brown thrashers.

“The best science we have indicates that the decline is due to the fact that our forests—

not just in Virginia, but up and down the eastern seaboard and particularly in the Appalachian region—have become mature forests,” explains Jay Jeffreys, science team leader for DGIF. “When that happens, certain communities of wildlife benefit, and others do not benefit and their numbers in turn can go down. A whole variety of species require some open, shrubby, young forest habitat mixed in.”

The answer is simple: increase the diversity of the forest. For it to be healthy, it must include a blend of mature forest, maturing forest, and young forest. That young forest—known to biologists as early successional habitat—is key. In its early years, a young forest may more resemble an overgrown field than any forest of our imagination. There might be blackberry and raspberry brambles, sumac, and even grasses. But from that tangle of growth, young trees will emerge. Within a decade or two, they will stand taller than a grown man and will begin to cast shade on the plants that grow beneath. As their canopy expands and the shadows deepen, the understory will naturally open up. The raspberries and blackberries will disappear, to be replaced by sparse forest shrubs and open spaces. The young forest will have grown up.

A healthy forested ecosystem includes stands of all ages. A portion might be shaded by towering mature trees that measure their lives in centuries, while another section might be exposed to full sunlight and filled to overflowing with brambles and grasses, with the remainder being somewhere between the two extremes. This is the kind of forest that supports a wealth of wildlife; smaller animals that need shelter for hiding, and larger animals that prey upon them.

Loosely defined, a young forest is anything ranging from a bramble-covered field to a 10- or 15-year-old stand of trees. It is not a static habitat. The patch of young forest will grow and mature, to be replaced by another patch of young forest elsewhere in the larger forested ecosystem.

In the northern Piedmont and west of the mountains, roughly five percent or less of Virginia's forested land would be considered young. This is not enough, says Bourgeois. “A lot of our wildlife species that are in serious decline are those that require young forests. If we could get 15 to 20 percent of our forest in that young forest habitat, that would be awesome. A lot of these declining species would begin to recover.”



## Then and Now

Young forest does not come about without some loss. “This part of the world, it’s hard to keep trees from growing,” explains Chris Burkett, Wildlife Action Plan coordinator for DGIF. “You really have to work at it to keep the forest from regenerating. When trees die back, you end up with a young forest. You might have grasses or shrubs for 10 or 15 years before the trees grow tall enough to make it feel like a forest again.”

Historically, forests sprang up, grew tall, and were knocked down. The cycle would be triggered by lightning strikes that sparked fires, wind storms that leveled hillsides, floods that drowned mature trees, and pests and diseases that wiped out whole species or landscapes. For the most part, this is no longer the case. “What we are finding, at least over the last several decades, is that there’s a real reluctance to let a lot of these natural processes occur,” says Burkett. “But there’s also a real reluctance to actually cut trees. And so we’re seeing very large chunks of the landscape in this really old forested state.”

The truth is, there is good reason to limit these natural disturbances when possible. In a truly wild setting, natural disasters are necessary and even welcome as a means to support biodiversity. But, when people live so close with the land, the randomness of these events becomes a risk. Fire, for example, poses a very real threat to homes and communities. And invasive diseases and pests have increased the risk of unnaturally dramatic losses, such as the fate that befell American chestnuts in the early decades of the last century. “We don’t want to manage by gypsy moth,” says Bourgeois. “We could have 1,000-acre blocks of forest die at one time, and we really don’t want to see that. We want to manage it.”

In the absence of natural disturbance, wildlife biologists are left with two viable management options: cutting and burning. Often, the

most practical approach is to harvest the timber, cutting down and removing the majority of the too-old trees. Sometimes an entire 10- or 20-acre plot is clearcut, while other times DGIF opts for a shelterwood-cut or thinning, removing some trees while leaving others standing. The decision of what to cut and what to leave is made on a tree-by-tree basis by DGIF’s forester, biologists, and land managers. The timber is then sold at fair market value.

“We do make money on it, but that’s not the reason we cut timber,” says Bourgeois. “We’re cutting it for habitat. But we don’t want to give it away.”

Fire is another option. Controlled burns may be set in places where timber harvest is either impractical or not allowed—as on some parts of the backcountry—or in fields or other management areas where biologists want to encourage more biodiversity. “When I think fire, I think biodiversity,” says Jeffreys. “If it is done the right way and at the right time, you get that age class distribution and the all-important cover at ground level such as young trees, shrubs, grasses, and herbs.”

## A Public Image Challenge

“It’s just not intuitive for most people that it’s a good thing—in the right proportion and at the right time—to cut trees,” continues Jeffreys, who explains that public perception is perhaps the Department’s greatest challenge when managing for young forest. “Several years ago, we were getting hammered by the media and a lot of users of our wildlife management areas on cutting trees in a certain management area. The groups we were at odds with did not understand that balancing the age classes in our forests was a vitally important thing to do for bringing back or making habitat for these species that need young forest habitat.”



A selective cut, after 2 years.



A forest recently cleared.



Green-up from a prescribed burn, 5 weeks later.



A clearcut after 3 to 4 years of growth.

The problem is largely one of perception. “A clearcut looks like a moonscape,” says Bourgeois. This is an image that is difficult to forget: churned soil, broken branches, and apparent general destruction. How could it be anything else? But, in fact, it is. The clearcut may look dreadful the day after the timber is hauled away, but it does not stay that way for long. “The young forest starts right when you are done cutting,” explains Bourgeois. “After three or four years, the whole area will be covered in raspberries and blackberries. You’ve got oak seedlings. You’ve got hickory seedlings. You might have sassafras.” And, living within all that abundance is wildlife: quail, turkeys, cottontail rabbits, migratory songbirds, ruffed grouse, least weasels, and much more.

This rapid recovery is aided by the Department’s approach to timber harvests, guided by the Virginia Department of Forestry’s best management practices. Streams are protected, buffered by undisturbed stands of trees measuring 50 to 100 feet in breadth. All access roads are laid on the grade, significantly reducing any threat of erosion. Hollow trees may be left standing, immediately increasing the wildlife value of the land. Then, following timber removal, land managers come back and work the soil, adding lime and fertilizer if necessary and seeding the ground with native grasses. The recovery—and its benefit to wildlife—is dramatic.

Already, some landowners, hunters, and outdoorsmen have begun to embrace this management approach. “The hunters that utilize that tract were thrilled to see what we were doing,” says Stephen Living, land and facilities manager for the Department’s eastern region, about a timber harvest project recently completed on the GATR tract in the Mockhorn Island Wildlife Management Area (WMA). Their enthusiasm is understandable; the GATR project will likely

boost populations of woodcock, turkey, and deer. Likewise, Living expects to see increased use of the property by migratory songbirds, including several species designated by the Wildlife Action Plan as species of greatest conservation need.

“I think our constituents understand that our focus is wildlife,” says Living. “When we do timber work, we aren’t doing it for the value of the timber. We are doing it for what we can do for the wildlife.”

Jeffreys is hopeful that this image problem will fade as the benefits of cutting and burning forests become better known and understood. “The beauty of it is that this young forest habitat is not lost. It is not like a subdivision or parking lot, where that habitat is just gone. That young forest, in time, will become an older forest. And then we start over. The forest replenishes itself continuously.”

## Toward Diversity

A biologically diverse forest—wealthy with game and nongame species—is a generationally diverse forest. This is the lesson that wildlife biologists have come to learn and embrace in recent decades. Already, DGIF is successfully managing lands throughout the state for mixed-age forests, with a blend of very young, very old, and much in between.

Looking ahead, the plan is to do more. Additional clearing is planned for the Highland WMA in western Virginia, and new projects are being developed for the Chickahominy WMA and Hog Island WMA, both in southeastern Virginia. With time and effort, Virginia’s forests may achieve the Department’s goal of 15 to 20 percent in young forest. The benefits—recovering populations of woodcock, turkey, migratory songbirds, small mammals, and more—will be visible to all.

Mature trees are good,” says Burkett. “But little baby trees are good too, as are grasslands and shrubs. From a wildlife perspective, it’s that diversity of habitats that we really need in order to conserve all these species.”

*Cristina Santiestevan writes about wildlife and the environment from her home in Virginia’s Blue Ridge Mountains.*

## RESOURCES

- The Young Forest Project: [www.youngforest.org](http://www.youngforest.org)
- Virginia Department of Game and Inland Fisheries: [www.dgif.virginia.gov/quail/forest-land.asp](http://www.dgif.virginia.gov/quail/forest-land.asp)