

Red-cockaded Woodpeckers – The Road to Recovery

BY JIM COX

The phrase wildlife management can sound like an oxymoron at first blush. Can you really manage something that is wild?

The management of endangered wildlife can wrestle with this paradox in a particularly complicated dance. Managers obviously want to increase or maintain numbers of rare species that once thrived in pristine environments, but the challenge comes in sustaining these species in the altered environments that have developed in the time since Columbus arrived.

It's a situation that can lead to missteps, unintended consequences, and unimpressive results. However, increasingly, it seems that we know what we are doing for some rare species.



Red-cockaded Woodpeckers, reproduced from a watercolor by George M. Sutton for *Georgia Birds* by Thomas D. Burleigh.

Take the case of the Red-cockaded Woodpecker, a flagship species for the mature pinelands that make the Red Hills so famous. The Red Hills region supports the largest population of this threatened woodpecker found on private lands, and some properties in the region provide unparalleled opportunities to study this rare bird in a setting where frequent fire and old-growth timber management have created conditions about as pristine as anywhere on earth.

In the late 1980s, the global woodpecker population seemed at best to be stuck at approximately 4700 territories (about 10,000 individuals). At worst, populations were declining and biologists everywhere were deeply worried about future prospects.

“Most people thought they were headed for extinction,” says renowned woodpecker expert Dr. Jeff Walters in a recent newsletter from his home institution, Virginia Tech University. “But now their numbers are increasing, and people say they think they can be recovered.”

The global population of woodpeckers has increased to over 6100 territories (about 14,000 individuals) — a resounding 120% improvement — since the early 1990s, and woodpeckers appear to be increasing throughout much of their current range.

Why the turnaround amid the doom and gloom of the late 1980s? The answer lies in development of an insightful management tool that addressed a key ecological need.

The cavities used by Red-cockaded Woodpeckers are as important as air, food, and water. They're even more important than securing a mate, at least for some young adults. Red-cockaded Woodpeckers are the only woodpecker in North America to excavate their living quarters exclusively in mature, living pines. They select trees that typically are at least 80-100 years old; the structures con-



At left, biologist Greg Hagan drills an artificial cavity. Photo by Jim Cox. Center, Close-up of an artificial cavity insert. Photo by Robert L. Crawford. At right, pine tree with artificial cavity insert. Photo from Tall Timbers Photo archives.

vey critical shelter from nocturnal predators and inclement weather.

But the process of chiseling away at a mature tree in an effort to create a cavity can take months or years. Given the lengthy process, woodpeckers, particularly the young ones, are dependent on the cavities provided by their forbearers rather than the cavities that they might try to excavate anew. Cavities persist for many years, after all, and a woodpecker family that has occupied a territory for decades can accumulate dozen of cavities through the individual actions of its family members.

Duplicating a Critical Resource

Cavities were known to be a critical ecological resource that was tightly linked with population stability, but it took some innovative thinking to figure out how to supply this resource without waiting the many months it takes a woodpecker working solo to create new cavities or the time needed to grow a 120+ year old tree.

Starting in the late 1980s, Dr. Walters and his team set out to design artificial cavities that mimicked natural woodpecker cavities. As he describes, graduate student Carole K. Copeyon climbed special ladders wielding a small, gas-powered drill. She reamed out intersecting horizontal and vertical tunnels in the tree that produced an “artificial” cavity with an entrance tunnel about 1¼ inches in diameter and a cavity chamber that was approximately 6 inches deep.

It took about 45 minutes for Copeyon to excavate such a structure, not the months or years it might take a woodpecker, and the woodpeckers loved it.

Walter’s team placed 20 clusters of artificial cavities in mature pine forests in the North Carolina Sandhills region. The trees selected were immersed in areas that had suitable foraging habitat for woodpeckers but otherwise were not inhabited. Within a year, Red-cockaded Woodpeckers were living in 19 of the 20 clusters.

This key management tool helped to turn the tables for a threatened species that seemed to be headed for a very uncertain future in the 1980s. In addition to drilled artificial cavities, biologists now insert box cavities directly into trees as another method of enhancing cavity resources. Development and application of the management tool also represented one of the most rewarding points in Dr. Walter’s career. As he notes, “In 1989, anyone you asked would have said these birds were doomed, and now their populations are increasing. To me, the most rewarding thing is to apply basic science to conservation and then follow through with the implications of the science to improve the conservation. It’s very exciting and gratifying.”

A Second Innovative Tool

Artificial cavities were first used in the Red Hills region when U.S. 319 was scheduled to be widened in the late 1990s. The new right-of-way road passed through two

To view the installation of an artificial cavity, visit <http://talltimbers.org/red-cockaded-woodpecker-rcw-cavity-construction/>.



Warren Bicknell, above, signed a Safe Harbor agreement in 2003. Photo by Rose Rodriguez

woodpecker territories and threatened the stability of these sites. To help offset the losses, artificial cavities were constructed on six properties. Today, three of these territories are occupied—a net gain of one territory—while the other three have shown more occupancy followed by periods of inactivity.

More important, if you were to look at the number of artificial cavities that have been excavated since this early effort, you might think there'd been a proliferation of new road work in the region. Currently, over 350 artificial cavities are distributed throughout the Red Hills, but the rapid increase in cavity construction stems from a second innovative tool—the *Safe Harbor Program*—that caters to the conservation of rare species on private lands.

The *Safe Harbor Program* removes the fears that landowners might have when they hear the phrase “endangered species.” The program is totally voluntary and simply encourages property owners to conduct management activities that benefit rare species such as woodpeckers. In exchange for this, the property owner is not liable should woodpecker numbers increase on the property. In other words, a property owner that has entered the *Safe Harbor Program* may increase woodpecker numbers by scores and scores, but, should management objectives for the property change, the owner is not liable for all the new endangered species they now have living on their property.

“I was very reluctant to sign up for Safe Harbor at first”, says Warren Bicknell, owner of Warbick Farms near Thomasville. “It took a long time for me to become comfortable with the idea of signing an agreement with

a governmental agency, but I am now an enthusiastic supporter because the program works for the landowner and the woodpecker.”

Mr. Bicknell signed his *Safe Harbor Agreement* in 2003. All he had to do to satisfy the agreement was to burn his property regularly, but soon afterwards he also agreed to allow biologists to excavate artificial woodpecker cavities on Warbick Farms. Mr. Bicknell was under no obligation to allow such activities, but he also would not be penalized should woodpeckers take to the structures and increase in number.

And of course they did! Woodpeckers quickly took up residence in the areas where artificial cavities were provided. They will be there as long as Mr. Bicknell wishes, and during that time they will provide greater stability for the Red Hills population through an increase in number of woodpecker territories as well as the steady pool of young birds that these territories produce each year. Some of these young birds naturally disperse and help to maintain greater continuity among the other territories in the region.

“Forest management for woodpeckers fits well with our overall management,” Mr. Bicknell says, “but another aspect of the program I like is the important link between this endangered species and the use of prescribed fire.”

“Concerns about the effects that prescribed burns have on air quality seem to be increasing each year “and eventually might threaten our ability to burn,” he adds. “However, here in the Red Hills we can point to the importance of burning for an endangered woodpecker, as well as quail, in hopes that the use of prescribed is never jeopardized.”

The Canopy Road to Recovery

Thanks to the *Safe Harbor Program* and artificial cavities, increases in woodpecker numbers similar to those observed on Warbick Farms also have taken place on Tall Timbers Research Station, Pebble Hill Plantation, and four additional properties. Recent surveys suggest the increases are not quite offsetting losses that are taking place elsewhere. As a result whether we can maintain this rare bird with these innovative tools ultimately depends on larger issues that have far-reaching implications.

If a flagship species like the Red-cockaded Woodpecker continues to decline in the Red Hills, this import-

ant landscape—touted as one of the *Last Great Places* in North America—will become more and more like so many other private lands in the southeast. That is, the Red Hills is certain to remain rural and valuable at some level, but it become much less *exceptional*.

For decades, the management of pine forests throughout the region has served as an unparalleled model for land stewardship. The model has changed over the decades, but let’s hope the region continues to make use of novel management tools in perpetuating the region’s rare species. It’s estimated that more than 35% of the endangered species found in North America are completely dependent on private lands for their continued existence. The tools that we use to keep the Red-cockaded Woodpecker thriving in the Red Hills could have application in many other regions.

“We understand the biology well enough now that we can recover the Red-cockaded Woodpecker to whatever level we want,” Dr. Walters notes. “So now the question is: does American society want the bird or not? Is it willing to protect enough habitats?”

The Red-cockaded Woodpecker will be removed from the federal list of imperiled species when five key criteria are met. The criteria require that approximately 25 populations support more than 7600 active territories.

The criteria also require that the distribution of territories among these populations vary from a minimum of 1000 territories, for at least one primary population, to smaller regional populations that help to ensure the bird occurs across a broad geographic range.

While the recovery goal of 7600 active territories (about 19,000 total birds) appears to be close to the estimated 6100 territories that exist currently, recovery criteria also require that populations on public lands not be dependent on artificial cavities. Instead, the populations on public lands should thrive under habitat management plans that emphasize appropriate forest structure and age and frequent prescribed burning.

Here amid private landholdings of the Red Hills, artificial cavities will play a much more prominent role in maintaining this important component of our mature, open pinewoods. While there are many pockets where pristine conditions persist, these areas will not support the large population needed to sustain this species far into the future. Fortunately, the *Safe Harbor Program* allows all landowners in the region to pitch in without being penalized, so recovery along our canopy roads will take a different path—and perhaps a more important path—as we continue to find ways effectively to maintain rare species on private lands.



Above, author Jim Cox with a banded Red-cockaded Woodpecker. Photo by Susan Jones. At right, Safe Harbor properties in the Red Hills by year enrolled. Map by Jim Cox.

Jim Cox is the director of the Stoddard Bird Lab at Tall Timbers.

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