

# Wildlife Management

By **JEFF**  
Jackson

## Be Selective With Herbicides



*Open loblolly pine understory derived from sweetgum thickets now features blackberry and dog fennel following Arsenal spray and fire. This understory may contain increased forage for deer. It is good habitat for certain birds.*



*Thicket understory of sweetgum and blackberry prior to Arsenal spray and fire. This is good escape cover for deer. It is good habitat for certain birds. Photos by David Moorhead*

It has been several years since a hunter came to me with a problem: The land his club leased from a timber company had been sprayed from the air by aircraft. The understory and midstory — dogwoods, grape, persimmon — had been browned and killed. There was nothing for the deer to eat, he said. He was upset. It seemed that in this case, with a closed canopy, it would be quite a while before the low-growing plants would recover.

Closer to home I know a timber tract where young loblolly pines have grown up around some huge, spreading, isolated oaks. The timber company sprayed the tract from the air with selective herbicides designed to kill the weedy competing vegetation. Since then the young pines have done well. The oaks that once laid down a carpet of acorns in hidden places among the pines are dead.

Any plant management technique can have good news and bad news.

Often it depends on one's perspective. The subject of using herbicides for wildlife management is very complex. This brief article, which focuses primarily on the southern United States, is only an introduction.

### Herbicides for Pine Release

Here are some recent claims about certain herbicides taken from advertisements and articles found in agricultural, forestry and wildlife magazines:

"Controls the brush that chokes out wildlife food sources in your pine stand."

"Has increased forbs [a whitetail's preferred food] 33-fold and quadrupled game-bird food."

"Forage capacity increases, which provides more food for a higher population of wildlife."

Some of these quotes pertain to selling selective herbicides developed to

release pines from competition. Every native plant is good for something. Some of the plants that follow pine release have value for certain wildlife species. To say that herbicides are generically "good for wildlife" is often misleading. These herbicides speed the growth of pines so they can close the canopy and keep the sunlight resource to themselves. After such closure many of the wildlife values begin to decline. In mature forests, after thinning, herbicides alternated with fire can maintain an open look.

If you own a pine rotational monoculture that measures in the thousands of acres where small parcels of diverse-age stands adjoin, such use of herbicides might well enhance forage for deer. Benefits from forbs may last for several years. At the same time, certain rare perennials may be lost.

On the other hand, if you own only a small parcel and your goals for wildlife are not subordinate to timber,

*Any plant management technique can have good news and bad news.*

*Often it depends on one's perspective and goals.*

I believe you can do better than such a broad-brush approach. It is important to keep in mind that, when there is money to be made, advertisers and their associates want us to focus on their good news.

There is research in respected journals that points to good news from the use of selective herbicides in forest management context. Much of this research focuses on byproducts that come from the use of herbicides aimed at releasing young plantations of southern pines. Often there are pluses of increased herbaceous plants of value to deer, quail, certain songbirds and some other species. The primary aim of such herbicide applications was originally to release pines and shorten the time to canopy closure. Mid-rotation release is also becoming more common, with similar temporary benefits in the understory if the herbicide treatments are associated with thinning and fire.

## Advanced Tree Tech

Pick Up  
March/April  
'06 p. 25

In my opinion such treatments result in a forest with certain deficiencies associated with monoculture.

Whenever land is laid bare, early-successional plants begin to grow. The plants that line up at the starting gate vary according to the seeds and roots on the site, the time of year, soil type, aspect, slope, herbicides used and other factors. The plants that succeed and win can be further manipulated with herbicides as well as in other ways. As the plants grow we can continue to manipulate to achieve our goals. The main idea behind using herbicides is to favor the plants we want and inhibit those we don't want.

Herbicides commonly used in southern forests for timber and wildlife management are glyphosate (Accord, Roundup, Rodeo), hexazinone (Velpar), Imazapyr (Arsenal, Chopper), picloram (Tordon), sulfometuron (Oust), trichlopyr (Forestry Garlon 4) and others. Application methods include various kinds of sprayers, pellets, squirts and others. Some are soil-active. Some are applied to leaves or stems.

Herbicides used in fields and other agricultural croplands are much more numerous and diverse than those used in timber production. Your Extension agent can help sort this out. My home state of Georgia has a large and complex pesticide handbook online. Details of application procedures and protective gear needed as well as many other important details are included on individual herbicide labels.

### Range of Management Uses

There is a range of ways to use herbicides in wildlife management. In the prairie states herbicides applied by helicopter have been used to kill cattails in marshes where blackbirds roost. Eliminating roosting spots near

vulnerable grain crops can reduce losses to blackbirds. Similarly, vast cattail marshes have been broken into a mosaic of open water and cattails. This diversity improves habitat for ducks. Herbicides are used to eliminate undesirable pasture grasses so as to make the site ready to plant native prairie grasses, dove fields, food plots for deer or other wildlife plantings. Selective herbicides can be used to remove grasses from clover patches or, conversely, to remove broadleaved weeds from patches of grasses or sedges.

Below are some of the ways I have used herbicides for wildlife management on my own land.

I got my first idea at a wildlife management conference in the late 1970s. There, at the Forestry Suppliers exhibitor's table, I met a charming southern gentleman named Jim Craig. I picked up a catalog. On the table I saw a Jim Gem Tree Injector, one of Jim's inventions. It's a tubular thing about five feet long with a handle. You stab it through the bark at the base of an unwanted tree to make a frill in the bark. Then work the handle to inject the herbicide. I bought one — still have it — and since then I have used it to remove many an unwanted tree.

I often use a Solo backpack sprayer. I put it on and go for a walk. I use it to establish trails and paths and release favorite fruit and nut saplings from competition. I use it to create openings as well as selectively remove certain weeds from my food plots. On a hot afternoon this is great exercise!

This last winter I planted little crabapples into a small clearcut that had volunteered into a sweetgum thicket. I surrounded each hole, at a distance of five feet, with a circle of spots of Velpar, a soil-active herbicide. I expect the sweetgums to die this

summer as they absorb the herbicide through their roots. The crabs still have their little root systems in the hole. I expect they will be beyond the range of the Velpar. By this technique I aim to release the crabapples from competition.

### **Insensitive Herbicide Use**

We don't all have the same values, attitudes and knowledge. Insensitive use can ignore "natural values." To learn how to best accomplish your goals, consider some of these recent concerns:

Herbicides have been used in the wrong place. This may be due to ignorance or insensitivity on the part of the user. Drift can kill adjoining vegetation.

Herbicides have been used for narrowly focused objectives in the context of natural areas with diverse values. There have been issues on public lands where managers aimed to spray native vegetation to favor exotic clovers or other vegetation for deer. Other land users object: Deer, after all, do not equal "wildlife."

Some research done by wildlife managers has been criticized because plant communities in test areas were not adequately described before sprays were applied. Many of us are ignorant of how to identify plant communities. There is an identification system for plant communities in North America. Some of the wild communities are rare, beautiful, interesting — and "good for wildlife." There are hundreds of named plant communities in the United States. If you have a rare and beautiful plant community, should you spray it out and replace it with a domesticated community? It would be like painting over the Mona Lisa. 

---

*Thanks to Phyllis Jackson and David Moorhead for reviewing this article, and to Karl Miller for discussing some differing points of view.*

# Making the Case for Herbicides

By DAVID  
Mercker  
& ALLAN  
Houston

Recently there has been some highlighting of herbicide use in forestry operations, specifically the use of aerial spraying associated with the management of pine plantations. Though understandable that society might initially have some unease with the use of herbicides (consider the days of DDT), a closer look brings reassurance that today's herbicides are safe.

Consider the following points when discussing the use of forest herbicides.

- If we plant, we must also manage. Herbicides allow young tree seedlings the opportunity to overcome competition from unwanted vegetation and thereby capture the site.
- Herbicides are chemicals, but so is salt. And salt, just as caffeine, baking soda and aspirin, is highly toxic if used incorrectly. The point is that herbicides are applied at very small rates, often ounces per acre. These rates are safe, having no lasting affect to the site.
- From lab to label. Today, in order for an herbicide to be labeled for commercial use, it must undergo rigorous testing and regular monitoring.
- Chemical companies are cautious. Such companies are very aware of past reputations and, if nothing else, recognize that trespass on public safety or biological standards would be sure suicide.
- Applicators must be licensed. To apply herbicides commercially, requires testing, licensing and continuing education (and when applied aerially, applicators must have a pilot's license).
- Labels are specific and penalties expressed. Not following the written instructions is a federal offense, subject to fines and loss of license.
- If not herbicides, then what ... bulldozers, prescribed fire, hoes? Each of these has some application, but none are practical or economic on large-scale operations.
- Herbicides enhance ecology. Herbicide applications can be tailored to enhance the environment by controlling unwanted exotic invasive plants, thereby benefiting the indigenous ones.
- Spray drift is noticeable. Concern for off-target spray drift is common. However, if spray drift were occurring on any measurable scale, the evidence would be irrefutable.
- Frequency of application. Very few forests will ever receive herbicide applications (less than 10 percent) and those that do, receive it on average once every 30 years.
- Only a "caution" label. FIFRA assigns hazard rating to pesticides according to potential harm to humans and the environment. Three ratings exist: caution, warning and danger. The lowest levels of toxicity are those pesticides labeled as "caution." 

---

*David Mercker is an Extension forester and Allan Houston is an associate professor, both with the University of Tennessee in Jackson.*