

The thermal stress deer feel in summer is as real as what they deal with in winter. But it takes a very different habitat type to give them relief from heat. *Photo by Linda Arndt*

PROPERLY COVERED

BY JAMES C. KROLL

Despite the overall attention given to whitetail habitat management, some of its components often are overlooked. One of these is thermal cover — especially during summer. While often thought of only as a winter need, cover also can be critical during the hottest part of the year.

FUNCTION & BENEFITS

Whitetails tend to feed less during daylight hours in hot, dry periods. This is true even in the relatively cool North. Our studies show that in years with excessively hot summers, antler quality is reduced. While this can in part be due to lower forage supply/quality, it's also a result of lower overall activity. Providing summer thermal cover at the proper spacing can improve antler development.

COVER TAKES MANY FORMS

What we commonly call "deer cover" exists in three forms: screening, summer thermal and winter thermal. Let's see how these elements differ.

Screening cover is any vegetation that allows a deer to flee at least 75 yards and no longer be seen from the point of disturbance. This cover comes in many forms, ranging from tallgrass prairie to dense brush.

The importance of each type of thermal cover depends on geographic location. The principle is to provide protection from harsh climatic elements, whether wind, precipitation or extreme temperature.

Useful winter thermal cover provides protection from wind, snow and extreme cold. The structure involves a dense overhead canopy and an understory dense enough to greatly reduce the wind. An example would be a white cedar swamp, the kind notorious for serving as a "yarding area" in the far North.

Summer thermal cover differs from both winter thermal cover and screening cover by not having a dense understory. Its functional purpose is to provide overhead shade and a cooling breeze at ground level. It's the same principle as your favorite shade tree.

DEVELOPING COVER

These cover types have structural similarities and differences, all affected by the passage of time. The gradual change from open, bare ground to a mature ecosystem is sculpted by natural and human events. You can take any land and, through various management practices, guide development to produce any of the cover types.

The tools we use to produce a specific type of cover remain similar to those proposed long ago by Aldo Leopold: the axe, the plow and the match. But how do you use them?

In 1978, my wife Susie and I purchased a tract of land near Nacogdoches, Texas. It recently had been totally "cut over" by the

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previous owner. By "cut over" I mean all timber was gone; there was little but bare, eroded soil!

I remember the first day I walked over it with Susie in tow. Fighting our way through the quickly developing briar and blackberry thickets, I stopped at a spot and pointed out how it one day would be summer thermal cover. Susie's expression told me she didn't have a clue what I was talking about, yet she also made it obvious she trusted me to make it happen — whatever "it" was.

Taking a 10,000-foot view of the property by way of an aerial photo and topographic and soils maps, I identified key areas where we'd supply natural and cultivated forages and where we'd develop cover and travel corridors for the deer that soon would visit our property. My growing knowledge of deer behavior supported that the minimum area needed by a whitetail was about 80 acres. Yes, it will roam over a far greater area (especially a buck during the rut), but it would prefer to have everything it needs in this size area. My goal was to make it happen.

Eastern Texas is part of what resource managers call the Southern Gulf Coastal Plain. It extends from Virginia to the middle of Texas. Although vegetation types vary east to west and north to south, it can be said with great confidence that forests are the dominant climax vegetation. As I've often noted, in the southeastern U.S. land management is a "war against vegetation." The canopy can close in 5-7 years, as opposed to 10-20 years in the North.

Whitetails need only about 20 percent of their home range in cover. That translates to roughly 16 acres of our basic 80-acre management unit. (Areas with dense growth of deer browse plants also can serve as screening cover, so there's some overlap between habitat types.)

I like to make it easy for the deer, setting up cover areas immediately adjacent to food sources such as food plots, browse areas and mast-producing tree stands. Again, there's obvious overlap in function of a habitat type; an oak stand can also serve as summer thermal cover.

The ideal structure to protect deer from excessive heat has enough canopy to block the sun but an open understory that doesn't impede airflow. The trick is not just to produce an area with these characteristics but also to keep it that way. If you lack such cover, you'll be growing a forest that ultimately will function as summer thermal cover. If not, you'll manicure an existing stand to that end.

IMPROVING OUR SITUATION

In the case of our property, we had no choice; the property had been totally



cleared. So we decided where we wanted summer thermal cover to be, based on where we'd develop food and travel corridors, as well as the area's topographic position favoring shade. We then developed a plan to guide the natural succession from brush to saplings to forest in a manner that would end with thermal cover.

The dominant vegetation in our area is pine forest in the uplands and hardwoods in the bottoms. We wanted our summer thermal cover to be in the uplands, where there's generally better airflow. To achieve this, we planted pines at a somewhat dense spacing of 12 feet by 12 feet. That translates to 302 trees per acre, which is too dense for a mature forest — but we had a reason for it. The high density forced the pines to grow upward more than outward. As a result, in only seven years they were 15 feet tall, with narrow crowns.

We then cut down a third of the pines (Leopold's "axe"), leaving about 200 per acre. As there was no commercial use for trees of that size, we left the felled ones on the ground to serve as bedding cover for deer. So while developing our future summer thermal cover, we also were developing screening cover.

Native Americans knew quite well that fire could be used to manipulate habitats to favor game production. The forests encountered by the first Europeans had been sculpted by centuries of fires applied by man. Of course, in most places a landowner can't just go into his woods and light a match! You have to either be trained or hire professionals for prescribed burning. However, many states offer landowner certification programs that provide training and give some amount of liability protection to the landowner.

We began burning our thermal cover stands at 10 years, an age at which pines in the South are tall enough to resist damage from an understory fire. Here a cut tree will decay in three years, so there wasn't a lot of fuel on the young forest floor.



This spot has ample browse, but for summer bedding it would benefit from having more airflow near ground level. Annual burning is often the solution. *Photo by Gordon Whittington*

Over the next 30 years we burned this location many times, eventually reaching an optimum tree density of about 50-75 per acre. As time passed, burning became easier and easier, as the understory gave way from brush to grasses and weeds: just what we needed for summer thermal cover. Today, during summer it's common to see several bucks together in this area at midday, lying in the shade to escape the heat. We maintain this thermal cover by doing an annual burn just before spring green-up.

ANOTHER APPROACH

When starting with an existing forest, begin by burning the stand to kill back the underbrush. If you can't burn, use either chemical or mechanical removal. Next, reduce the overstory tree density gradually to the levels noted above. The trick is to keep the understory low, which is best done by burning. If you can't burn, use herbicides or mowing to accomplish the task.

We've used these techniques to produce summer thermal cover even in places such as Kansas, where the dominant upland woody vegetation often is cedar or juniper. In such cases, however, never burn; these trees are sensitive to fire and highly volatile, due to concentrations of aromatic oils. Also, cedars and junipers often are allelopathic, producing root chemicals that retard competing vegetation growth. Fortunately, you can cut these conifers off at the base and they seldom re-sprout. We also have produced nice summer thermal cover areas exactly where we want them by using a tree digger and relocating trees.

In upland hardwood stands we produce thermal cover by gradually manipulating tree density, using basal treatment or injection of herbicides to remove unwanted trees or species. Contrary to media hype, most forestry herbicides are safe and ecologically friendly. I prefer triclopyr (sold under the name "Remedy"), mixed with either mineral oil or diesel at the rate of 20 percent Remedy to 80 percent oil or diesel.

Walk around your hardwood stand until you find a tree you don't want; then spray the bottom 15 inches with this mix until saturated. When you walk away, the tree for all practical purposes is dead. It usually will die within a year (starting at the top) and then fall. This provides the added benefit of increasing bedding cover.

Again, such practices might be regulated in your area and require training and certification. So always check to be sure.

IN CONCLUSION

Sound habitat management is about far more than just food plots. It takes paying attention to *all* factors that affect deer health and productivity. So don't overlook summer thermal cover. Savvy managers know just how critical it can be. **NAW**