BUILDING YOUR OWN
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Laying Out Food Plots For Maximum Benefits

Confused about how many acres of food plots you need to grow the maximum number of big, healthy deer on your land? Don't know where to plant? Relax! Our step-by-step guide makes those questions easy to answer!

by David Morris

You want more and bigger deer on your land, and you're convinced that food plots can help get you there. You're willing to commit the time and other resources to make it happen. In short, you're ready to start "farming for deer" so that you can get the most from your land and your hunting season.

But how many total acres do you need in food plots? How many plots should you have? How big should they be? Where should you put them? This month, in our ongoing special series on private-land management, we'll help you find the answers.

RESOURCES & GOALS

Everything discussed here assumes a serious agriculture-based food-source program designed to greatly improve nutrition for your herd. And it assumes that we're only interested in carrying deer in prime physical condition, not just in running up deer numbers.

Any management program must start with an evaluation of what you have to work with and what you're trying to achieve. We've covered this process in past issues, so suffice it to say that you must take a hard look at your available resources: land (including that of your neighbors), deer herd, money, time, expertise, equipment, personnel, etc. Then, after a thorough evaluation of the resources, noting both the pros and cons, you must set realistic goals.

Once these steps have been taken, you're ready to employ food plots to help reach your goals . . . assuming you *have* a food-plot strategy.

TYPES OF FOOD PLOTS

As we've often discussed, there are two kinds of food plots: those growing during the "warm season" (spring to fall) and those growing during the "cool season" (fall to spring).

Warm-season plots, usually high-protein legumes, are used to provide the protein deer need for growth during the spring and summer. These plots are the heart of a food-source management program, and their sole purpose is to provide optimum nutrition.

Conversely, cool-season plots — typically small grains mixed with clovers — provide both protein and carbohydrates (energy) during fall and winter so deer can maintain good body condition then. These plots often have the added benefit of concentrating deer activity for hunting purposes.

In much of the South, East and Midwest, food plots can be double-cropped, meaning both cool-season and warm-season crops can be planted in the same fields. The growing season is long enough and the moisture supply is adequate for warm- and cool-season crops to be grown back to back. Our discussion assumes double-cropping for year-round nutrition, though in some places (such as snow country or arid areas) that might not be practical.

RULES OF THUMB

We'll be calling upon certain "rules of thumb" to help guide decisions. These are based on years of nutrition research, mainly at ***WHITETAIL***'s own Fort Perry Plantation in Georgia. Working with the Institute for White-tailed Deer Management and Research, we've found that mixing the right forages with the right farming practices really can grow more and bigger deer.

Yes, each situation is different, but these "rules" are good places to start, assuming similar crops and farming techniques. Special circumstances in a given locale should be obvious enough to make it clear when changes in these guiding assumptions are necessary.

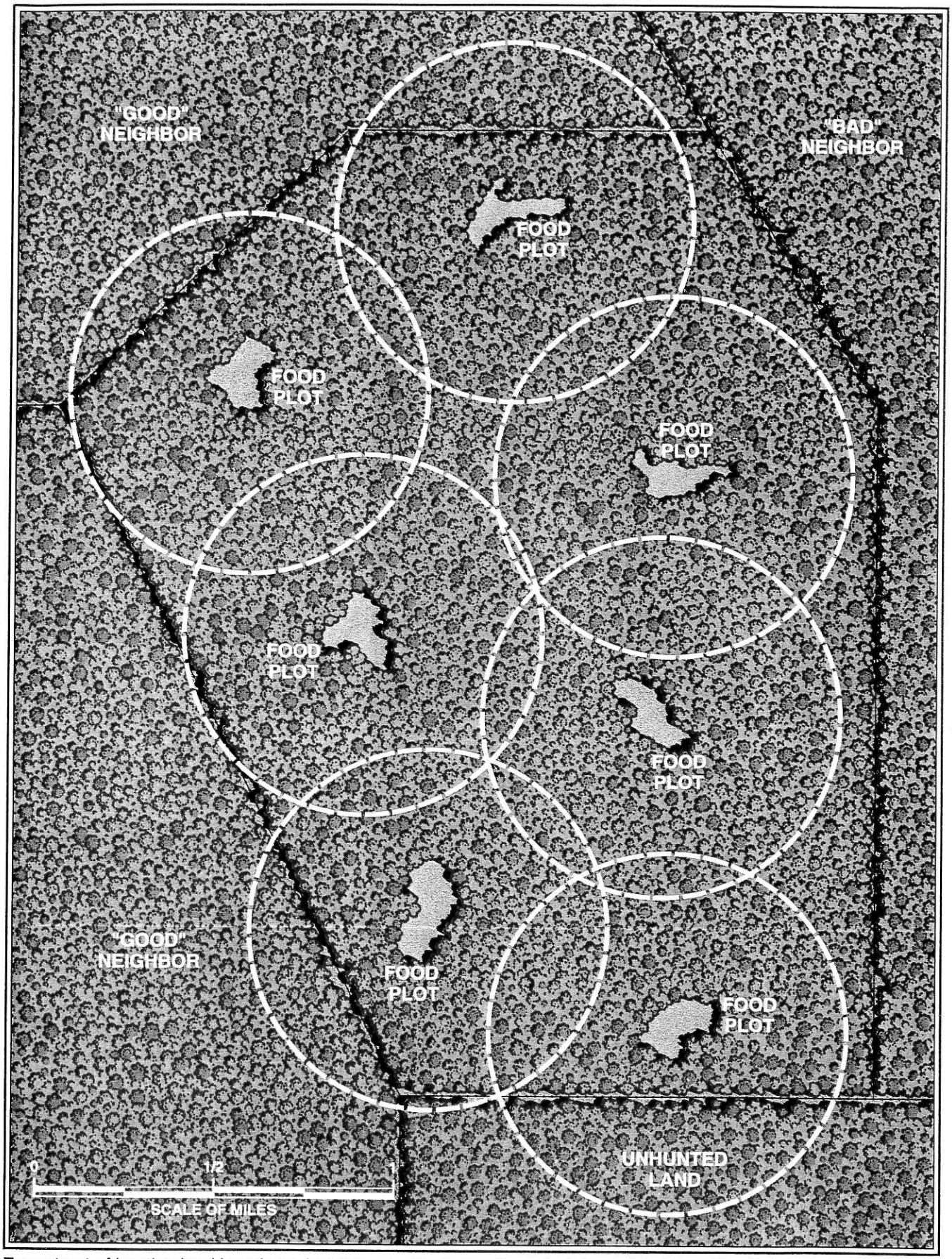
LAYING OUT FOOD PLOTS

How Many Total Acres In Plots?

The acreage needed in food plots depends largely on the deer density you want to carry. *As a rule of thumb, assume that a year-round acre of food plot will support about 3 deer.* We support about 3.5 prime-conditioned deer per acre of plot at Fort Perry, but our program is intensive and includes a "safety net" of supplemental feed. A figure of 3 deer per acre is reasonable and provides a cushion.

Through our research, it's become increasingly apparent that this number is tied more to the warm-season crop than the cool-season crop. But without cool-season plots, the number of deer you can support on your land definitely will fall off, particularly if the native habitat offers slim pickings in winter.

Assuming the ability to feed 3 deer



Every tract of hunting land is unique, but this map illustrates the principles behind good food-plot placement. Each of these plots is big enough to feed all deer living within 1/2 mile of it (areas shown by circles). Also, all plots are at least 1/2 mile from the "bad" neighbor's border, to minimize losses of deer through indiscriminate harvest. See the text for more details. Map by Allen Hansen.

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per acre of food plot, determining how many acres of plots you need is simple. First, establish your deer density goal. If you want to carry 100 deer on 1,000 acres (a deer per 10 acres), just divide 100 by 3, and you'll see that 33 acres of good plots will meet your needs.

You also can come at this from the opposite direction. If you know the acreage of plots you're willing and able to put in, you can determine how many deer can be supported with those plots. Simply multiply the number of plot acres by 3 to reach the density target. If you can put in 25 acres of plots, your population goal will be 75 deer.

We even can figure what percentage of the total acreage needs to be in food plots to achieve specific density levels. For instance, let's say that we want to carry 200 deer on 1,000 acres (a deer per 5 acres). First we divide 200 by 3, which tells us that we need 67 acres in plots. Then, we divide 67 by 1,000 to get the percentage — i.e., 6.7 percent.

Using this process, we've developed the following rules of thumb: *Having 6.7 percent of the total acreage in food plots should support a deer per 5 acres; 3.3 percent, a deer per 10 acres; 2.2 percent, a deer per 15 acres; and 1.7 percent, a deer per 20 acres.*

Obviously, this math only works well when applied to a reasonable size land base (with the herd largely contained on that tract) with adequate native habitat and good farming practices. And the plot/density math can be taken just so far. After all, the land will support only so many deer without suffering habitat degradation of some sort. Anytime the density exceeds a deer per 10 acres, you need to monitor the habitat for signs of damage.

Where double-cropping is feasible, many managers plant as many acres of cool-season plots as warm-season plots. However, I don't think you need to do so. From what we've been able to determine through our years of research at Fort Perry and elsewhere, a good rule of thumb seems to be that the acreage for winter plots can be about 60 percent to 70 percent of that needed for warm-season plantings. Of course, having more land in cool-season plots won't hurt anything (except your pocketbook), unless it somehow cuts warm-season forage production.

Cool-season plantings tend to be primarily of small grains. However, many managers add various clovers or other legumes to cool-season plantings to meet protein needs in late winter and early spring, before warm-season crops come onboard.

PLOT DISTRIBUTION & SIZE

OK, you now have a handle on the total acreage of food plots needed. But how many actual plots do you need, what size should they be and where should you put them?

You can't answer any of these questions without giving thought to the others, because they're all related. The number of plots depends in part on how big they are, and vice versa. And in areas with limited tillable land, the distribution of that tillable land and how much there is at each site go a long way toward determining both the number and size of plots. Still, there are ways to make logical decisions.

Having 6.7 percent of the total acreage in food plots should support an overall density of a deer per 5 acres; 3.3 percent, a deer per 10 acres; 2.2 percent, a deer per 15 acres; and 1.7 percent, a deer per 20 acres.

Plot Distribution

Let's first consider the number of plots, which of course is partly a function of how much deer land you control. What we're really talking about is plot distribution, or *coverage*. Let's look at some factors that might guide our distribution decisions.

Research at Fort Perry and elsewhere has shown very little plot plant material in deer droppings more than a half-mile from a plot. This can only mean: (1) deer feeding in a plot are staying near it; and/or (2) deer living more than a half-mile from a plot seldom visit it.

Frankly, I've seen evidence of both, but the former more than the latter. Does in particular are homebodies during the summer, seldom ranging more than a few hundred yards during the fawning and fawn-rearing time. Bucks are more mobile, but why make them move more than a half-mile to feed, causing them to burn excess energy and expose themselves to danger in the process?

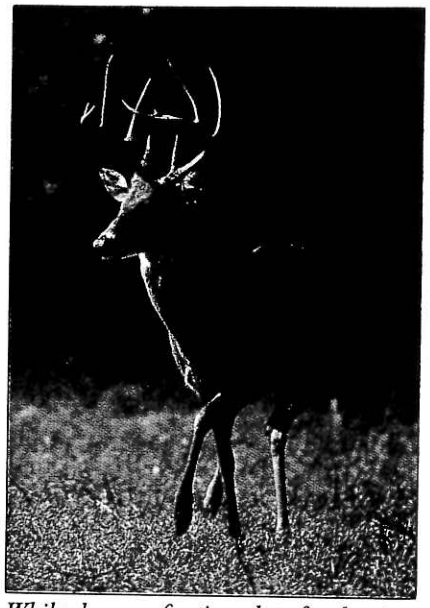
Given all of this, we can develop a rule of thumb regarding the desired distribution of plots and, thus, their number: *If possible, food plots should be no more than a mile apart, so that all resident deer are at all times within a half-mile of a plot.* (For a bird's-eye view of what good coverage might look like, see the map on Page 52.) I actually prefer to limit the maximum distance between plots to about three-quarters of a mile to better serve the does and fawns.

Unless valuable native habitat must be compromised in the process, tighter plot spacing certainly doesn't hurt. But as we'll see, it's more expensive to farm many small plots than a few big ones.

Plot Size

The target deer density has led us to a total acreage in food plots, and the movement pattern of deer has given us a guideline for plot distribution. With this done, we now can develop some guidelines for plot size.

To simplify the math, let's assume that you have a target density of a deer per 10 acres and that you don't want any deer on your land ever to be more than a half-mile from a plot. How do you figure out the "right" plot size?



While deer prefer tiny plots for daytime feeding, plots of 6 to 30 acres tend to provide more management benefits. Photo by Tom Evans.

First, look at the effective coverage area of the plot. A half-mile radius around a plot covers roughly a square mile (640 acres). At a deer per 10 acres, this plot has to feed 64 of them. Now divide the number of deer (64) by the number of deer an acre of plot will support (3). This indicates that you need about 21 acres of plots.

You also can start with a known or desired plot size in determining plot distribution. For instance, let's assume that a plot can be only 10 acres, due to limited tillable soil. This plot will support about 30 deer, which, at an overall density of a deer per 10 acres, represents the herd on about 300 acres. That's roughly a half-square-mile of coverage, or everything within a quarter-mile radius. So neighboring plots must be close and/or big enough to serve deer living more than a quarter-mile away or there will be too much pressure on this plot.

On plots of varying sizes, determine the coverage area of each plot and match them up so that overall coverage is as uniform as possible. Such factors as limited tillable land, prime habitat that needs protecting, access problems, neighbor concerns, etc., usually force less than ideal coverage, but that's OK. Just do the best you can.

This approach helps you see problem areas, which perhaps can be shored up with supplemental feed. Too much overlap is seldom a problem, but too many holes in coverage can force you to lower your target deer density.

Several factors point to a practical range of sizes for food plots. One is farming efficiency. From travel time between plots to maintaining roads to turnaround time on the rows, it's more costly and less efficient to farm many small plots than a few bigger ones.

Smaller plots also tend to have lower forage yields because of the shading and moisture/nutrient drain of nearby trees. This calls into question the wisdom of leaving trees in a plot for aesthetic reasons. Leave no more than necessary, especially on small plots or where moisture is at a premium.

Smaller plots often suffer more damage from deer than do larger ones. This is partly because having many smaller plots scattered across an area makes it more convenient for deer to spend an inordinate amount of time on the plots, even when not feeding, thus increasing pressure on the plants. Also, several types of warm-season legumes are quite sensitive to early grazing



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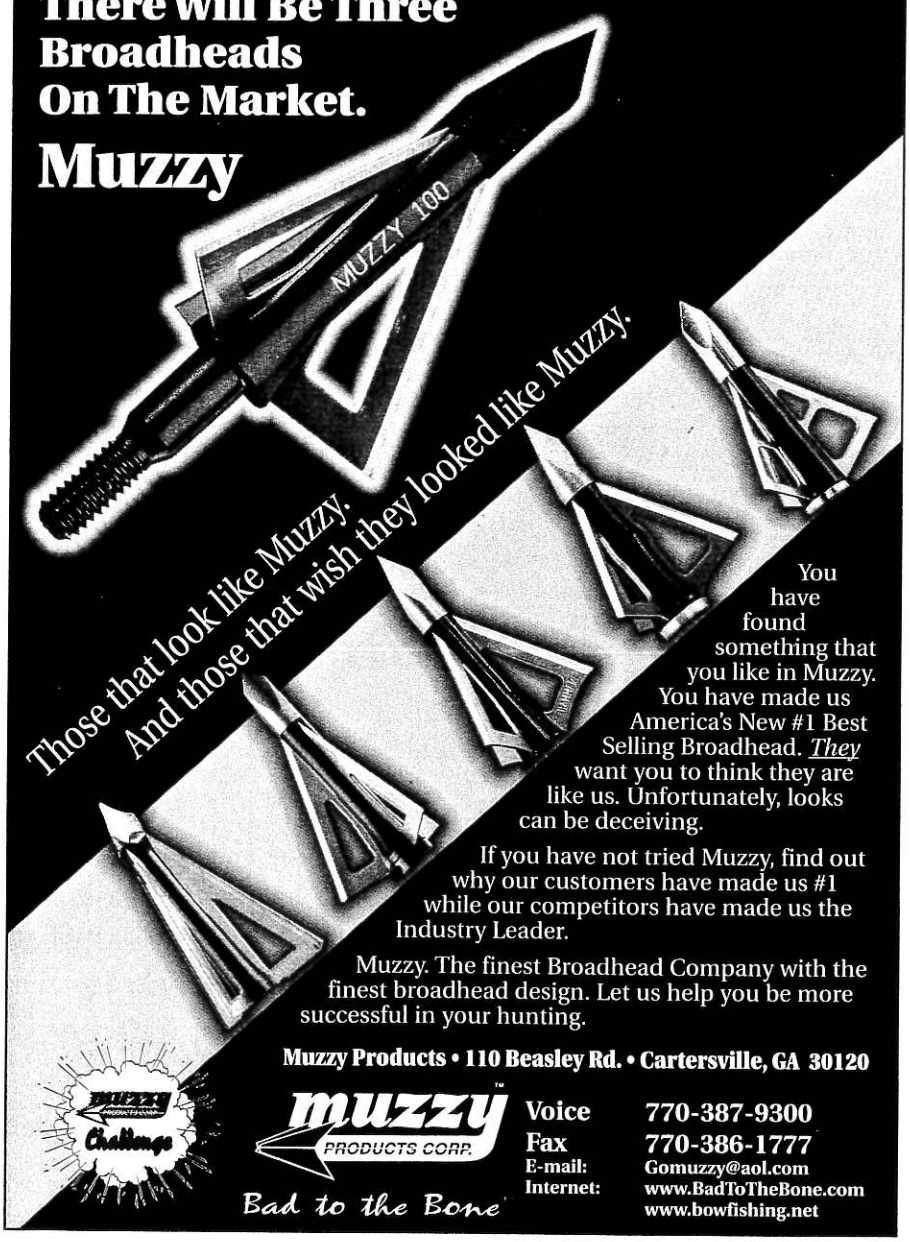


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pressure, so planting small plots of these plants often results in heavy deer damage. Cool-season plots are a bit less vulnerable.

Again, in terms of farming efficiency and forage yield, a bigger plot is better. But there are practical limits to how big a plot *needs* to be. The upper limit depends largely on travel distance: not only how far they *will* travel but also how far you *want* them to travel.

Set a limit on travel distance and deer density, and you'll establish a maximum field size. For instance, if a half-mile is the maximum desired travel distance, even at the extremely high density of a deer per 5 acres, a field of only about 40 acres is needed.

Frankly, at that density, I wouldn't want deer to have to travel a half-mile to feed. So a more practical maximum plot size probably is 30 acres. Even that will support a density of a deer per 7 acres in a square-mile coverage area or a deer per 10 acres over nearly 1.5 square miles. Either scenario pushes the envelope to the limit. Also, there's the fact that cool-season plots often are hunted, and 30 acres is about as much land as most folks can cover from a stand — even with a long-range rifle.

From all of this, *we can establish a practical rule of thumb for plot size at about 6 to 30 acres.* Cool-season plots a bit under 6 acres can be productive, and warm-season plots greater than 30 acres are fine, provided they're for a nutritional cushion and aren't counted on to serve deer coming from much more than a half-mile away.

Selecting Food Plot Locations

Where should you plant? If tillable soil is scarce, its location might alone determine plot placement, as well as total plot acreage and plot sizes. Even if land is tillable, erosion concerns, soil fertility and/or availability of irrigation water might guide plot location.

Habitat considerations can be factors as well. You want good farming soils and the right plot distribution and size, but not at the cost of key deer habitat. Study aerial photos, soil maps and/or topographical maps before deciding on the best locations for plots.

You also need to know deer travel patterns on, and onto, the tract. Identify and protect major bedding areas, holding cover, travel corridors and highly productive native habitat. Also,

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if a plot is to be hunted, consider its attraction to deer during daytime.

Competing food sources, such as other agricultural crops, also are worth noting. If you have them on your land, factor them into your plot program. If they instead lie *near* your land, they could be drawing away "your" deer. Position plots to counter the attraction of these competing fields.

Physical features of the land also can determine plot location, especially in regard to moving farm equipment to and from fields. Roads have to be wide enough to accommodate equipment and smooth enough not to beat it into an early retirement. Consider streams (and flooding) and other wet areas that could hamper access to or work in a plot when timing is critical. If these problems exist, you might need to put your plot(s) somewhere else.

Where double-cropping is feasible, many managers plant as many acres of cool-season plots as warm-season plots. However, I don't think you need to do so.

High on the list of placement factors, especially on managed areas of under 2,000 acres, is the neighbor situation. Blessed is the manager whose land borders a large unhunted or lightly hunted tract. By planting plots near that boundary, he can attract more deer to his side, in effect managing more deer and more land than his own acreage total would indicate. (See the bottom of the map on Page 52.)

In most cases, of course, the best you can hope for is a neighbor with harvest goals similar to yours, so he doesn't disproportionately skim off "your" deer. If a neighbor is far less selective in his harvest than you are, the last thing you want to do is concentrate the herd near his property line.

So we come to a final rule of thumb: *If possible, never put a plot closer than a half-mile from the boundary of an indiscriminate neighbor.* (Again, refer to the map for an illustration.) Feeding deer well does you no good if someone shoots them before their time.

(Editor's Note: Next month, Dr. James C. Kroll will share some great tips for improving deer nutrition on land where you *can't* plant food plots.)

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