Dr. Deer's™ PRESCRIPTION

The Critical Element: Part 2

By Dr. James C. Kroll

Last issue I talked about the importance of water to deer. In fact, water often is the critical element. In spite of this, however, few managers really pay attention to ameliorating water availability as part of a management program. In this installment, I will discuss some of the unique ways I have provided water *economically* to the deer herds I have managed.

I often advise the landowners with whom I work to drill every well they can and build every pond or lake they can as soon as possible. Not only is water a limiting factor to whitetails, but human population growth and increasing development of urban areas within dry portions of the country always will take precedence over the needs of wildlife. The day will come; mark my words, when you will have a meter on every water well in Texas. And, to get a permit to construct a pond will be a laborious task, requiring a ton of permits and even an environmental impact statement. So, be warned.

I recommend, under intensive deer management (the kind most small landowners want) you should provide a free-water source per a maximum of 160 acres; one per 80 acres is optimum. During my early career days, we radio-tracked deer here in eastern Texas in forests which had not seen the clear-cutter's axe. In those days forests were managed and regenerated using selective harvesting, not the most efficient way of regenerating growth, but much more environmentally friendly. When clear-cutting first came to the Pineywoods, we decided to monitor what happened to deer home ranges as forestland was cleared. In a nutshell, as we broke up mixed pine-hardwood forests into smaller and smaller patches, we could never get a whitetail to a home range size smaller than 80 acres. That patch size became my standard even to this day. So, you often will hear me recommend some activity on a "per 80 acres" basis.

Getting your hands on water, especially in places such as the Texas Hill Country and the South Texas Plains often can be an expensive proposition. Water tables can be quite deep and the cost per foot of drilling a well can scare the living daylights out of $20,000, just for a small output device. So, I will first examine what you can do with the well water you already have or can afford to acquire, then move on to some very innovative ways to have water for your deer.

Last issue I discussed how we used watering devices at the old Diamond H Ranch near Catarina, comprised of nothing more than a "leaky" faucet. In the last three years, I have used the same method to deliver water as part of the intensive whitetail management program at Al and Quad Boenker's Dos Gringos Ranch near Alice, Texas. The exception is Al and Quad always do things in a top-notch manner, so they also have constructed little ponds with each station, complete with shoreline vegetation for many species of wildlife. The water line they put in to deliver water was quite simple to do, in my opinion (Al and Quad may disagree); a PVC water line trenched in the side of roads and senderos. We used an aerial photograph and GPS to decide on locations. The deer and a host of other species are quite happy with our arrangement of watering stations; and, I will be conducting a research study this spring and summer on what physical and habitat features affect use.

Now, let's turn to a situation in which you cannot afford to drill more wells. My great friend, Ken Bailey of Four Canyon Ranch near Camp Wood, is a real conservation pioneer. He quietly has supported many innovations in whitetail management, and even was the man who funded the initial work to develop artificial breeding in whitetails. I will never forget the first time I visited his ranch. It did not take long for me to come to the conclusion Ken



Many options exist for supplying adequate water to deer herds, so there's really no excuse not to do so, according to the author. He recommends a free-water source per a maximum of 160 acres. One per 80 acres is optimum.

had bought "my" ranch; at least the one I always had wanted. Four Canyon lies half in the South Texas brush habitat and half within the Hill Country. It is well named, with steep juniper hills and four prominent canyons. Limestone rock is abundant, making well drilling very expensive, if not impossible. In his management plan, I proposed we have at least one watering site per 160 acres. So, Ken set out to do just that. After drilling some not so good wells, Ken put his intellectual skills to work solving the problem. I wish I could take credit for the solution, but it must be given solely to Ken. He purchased a surplus water truck for almost nothing. Then, he bought polypropylene water tanks and distributed them around the property at the proper density. Attached to each tank was a water trough and a float valve, protected from animal damage. Today, Ken only has to deliver water to these tanks a few times a year—problem solved.

There are other, equally effective ways to supply inexpensive water. My friend Gordon Whittington and I traveled a few weeks ago to Johnson City, where his father had ranched for many years, as well as operating the Whittington Jerky store and game processing plant. Gordon's brother recently connected the metal roof of his barn to a water collection system. Just a few inches of rain each year is all it takes to store water in a large reservoir; enough to supply the farm dwellings, livestock and ranch uses. I was so impressed; I went home and now am installing one for my deer facility. Here are the facts.

If you have a barn that is 40 feet wide by 40 feet long, it has a roof surface area of 1,723.25 ft^2. Since 3 inches of rain amounts to .25 feet, this amount of water will constitute 430.8 ft^3. A cubic foot of water contains 7.48 gallons, so the total water that could be stored from such a structure would be 3,222 gallons. An area receiving only 15 inches of rainfall per year could potentially yield more than 15,000 gallons of usable water.

Using this information, biologists long ago came up with designs for what are known as "guzzlers." There even is a company selling commercially designed devices (www.wildlifeguzzler.com; www.bosstanks.com; www.oasisguzzler.com; and others). These devices can capture and store from 200-5,000 gallons of water; allowing for capture of 35 gallons from a 1 inch of rain. Or, you can obtain plans for building your own from the Internet. Water can be routed into an underground tank or an above ground tank downhill, which then is outfitted with a water trough and float valve. Only storing 1,000 gallons of water will allow you to support about 500 deer-days; particularly useful during drier portions of the year.

Here is another idea. Even on the driest of ranches, there are years when you have run-off adequate, not only to fill you ponds, but have excess runoff. Why not use a solar-assisted pump to store water in portable tanks? This is what I call "water banking."

So, you see there is no excuse for not supplying your deer with adequate water. When you add in pond and lake construction, you should be able to provide the water needs of your deer at the density suggested above. By spreading your deer out using water, you will spread out browsing pressure and reduce social stress on your animals, which can have an effect both on antler development and fawn survival. Take a look at your own situation and apply some good old Ken Bailey ingenuity!

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