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# FEAR THE DEER

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A photograph of a deer standing in a field with a white SUV in the background. The deer is in the foreground, looking towards the camera. The SUV is in the background, slightly out of focus. The background is a mix of green and brown foliage.

"Just as a deer herd lives in mortal fear of its wolves, so does a mountain live in mortal fear of its deer. And perhaps with better cause, for while a buck pulled down by wolves can be replaced in two or three years, a range pulled down by too many deer may fail of replacement in as many decades."

-Aldo Leopold, from his essay "Thinking Like a Mountain"

■ AL CAMBRONNE

Unfortunately, Leopold was not exaggerating when he used the word "decades." Damage done by overabundant deer can reverberate through an entire ecosystem until it affects every plant, animal and bird in the forest. Even if we spend a fair amount of time in the woods, most of us have never seen a forest that's not shaped by deer.

As hunters, we rarely complain of seeing too many deer.

On a day when nothing is moving the phrase "overabundant deer" can seem like a cruel joke or puzzling oxymoron. Still, it definitely is possible to have too many deer. The only question is, "How many is too many?"





Deer numbers are out of control in many of the nation's suburbs, where population densities might exceed 100 deer per square mile.

It's a matter of balance, and not everyone will agree on the answer. But when we choose deer, we make an either-or choice: whitetails vs. all other wildlife. Trade-offs are unavoidable. If we want more deer, we get less of everything else.

It's easy to forget that by 1900 we'd nearly extirpated deer from the North American continent. We've brought them back from the brink, and we've greatly reduced the number of non-human predators on the landscape. By the time Leopold wrote those words in the 1940s, some parts of the United States were already experiencing the novel problem of too many deer. Today we have even more - about 30 million, roughly 100 times more than just a century ago. That's the good news. It's also the bad news.

### Rippling Changes

Deer impacts are a matter of quantity and quality. Overabundant deer reduce the total density of plants in the understory, but they also alter species composition and diversity. This happens for three reasons. First, deer browse preferentially, eating some species first. Second, even when deer do relish a particular species, it might tolerate browsing better than others that deer

find equally tasty. Third, plants deer don't prefer are suddenly released from competition and begin to dominate. For all these reasons, a forest with too many deer will have both fewer plants and different plants.

Deer can also increase the rates of foliage decomposition, disperse seeds, and help or hinder plant growth through soil compaction and trampling. But most of all, deer affect forests simply by eating them. They eat seedlings and saplings that will never become trees, and they eat other plants whose absence, although rarely noticed by us, definitely does matter somehow.

Ground-nesting birds are more exposed to predators and the elements. As plants in the midstory die or graduate into the canopy, birds that nest and forage there will be homeless, too. Even spiders are affected when they have fewer places to attach a web. And what about the insects they were hoping to catch in those webs? As any ecologist would tell you, this whole food web can get complicated in a hurry.

Here's just one example, described by Dr. Timothy Nuttle and his co-authors in a recent paper titled "Legacy of Top-down Herbivore Pressure Ricochets Back up Multiple Trophic Levels in Forest Canopies Over 30 Years." Like

Leopold said, decades.

In an ingenious study, Nuttle returned to an old experimental site where deer densities had been maintained at four different levels for an entire decade throughout the 1980s. Since then deer densities have been lower, and also at roughly similar levels in all four locations. Even so, the differences in songbird populations between the four locations are still measurable today.

"The details are complicated," Nuttle told me. "But we found that one simple relationship seems key. Both deer and caterpillars like to eat leaves from the same trees, and for the same reasons. They're more delicious and digestible than the leaves on other trees. If deer eat those leaves first, before the seedling or saplings can even turn into trees, then caterpillars don't get them. Fewer caterpillars in the canopy, fewer birds. So apart from deer eating the places where birds would nest and rest, the closest link between deer and birds is caterpillars.

"Most people," said Nuttle, "see large numbers of deer out in the woods and think it's a measure of how healthy that ecosystem is. It is, but in exactly the opposite way they think. A forest with too many deer is not a healthy forest."

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If you have friends who love to hunt but are skeptical of such statements, arguments about finches and trillium might not be convincing. Instead, remind them that ground-nesting birds include quail, grouse and turkeys, and that vulnerable fawns need cover to be safe from predators, too. When deer exceed the land's carrying capacity, even adults will have a tough time. In extreme cases, they might starve. One thing's certain: Undernourished deer rarely produce trophy antlers.

#### **P! A Lesson from Dairymen's**

To see a forest that deer have hammered especially hard, I visited Dairymen's, a 6,000-acre private club in the woods of northeastern Wisconsin. My guide was Dr. Tom Rooney, a botanist from Ohio's Wright State University. He's one of the world's leading experts on the effects of overabundant deer on the forest ecosystem.

Ever since its founding in the 1920s, the club has been a wildlife refuge where no hunting was allowed. Deer had been almost totally eliminated from northern Wisconsin, and they pretty much had been eliminated from the rest of the state. Other game was scarce, too.

Human/deer conflicts are common where deer population densities are too high. The most visual of these is the abundance of road kill on local highways and freeways.

So at the time, creating a wildlife refuge was a great idea.

By the late

1940s, however, Dairymen's already had too many deer. Eventually their densities exceeded 100 per square mile, a number that's unusual but not unique. Deer densities per square mile in America's suburbs and parks have at times reached 100 in Chicago, 125 in Minneapolis, 182 in parts of New Jersey, 200 in Kansas City and 400 in Washington, D.C.

When the club hired Rooney as a consultant back in the 1990s, his first advice was to stop feeding the deer. Because they'd find better cover and forage elsewhere, the deer would soon begin dispersing. In time, Dairymen's might even have fewer deer than the surrounding area.

Real recovery will take time, and 15 years later Rooney continues to measure its progress with painstaking analysis and sophisticated sampling techniques. Even to my untrained eye, however, the missing understory and clear browse lines were hard to miss.

But with enough time, who knows? Although Dairymen's still doesn't allow hunting, its members have stopped feeding the deer. A couple years ago, a pack of wolves moved in. Things are looking up.

#### **Doing Our Part**

Everywhere else, here's how you can be part of the solution:

- Keep up the good work. As hunters,

## **Deer are Selective Browsers**

Cattle graze, deer browse. Look closely, and you can see it in their faces. Cows have broad lawn mower noses, wide jaws and a mouthful of teeth shaped for scissored, side-to-side grinding. Although moose and caribou share some of these same facial features, deer have long, slender noses and narrow jaws that end almost in a point.

Even a deer's teeth are made for choosing as much as chewing. Deer, you'll recall, have lower incisors, but none on their upper jaw. There, they have no teeth at all for the first few inches. On the lower jaw, they have a correspondingly long gap between their incisors and molars. Although deer dentition is poorly suited for grinding large quantities of low-quality browse, it's ideal for plucking the perfect morsel and sending it back to the molars for a quick chew before it goes down the hatch.

— Al Cambronre

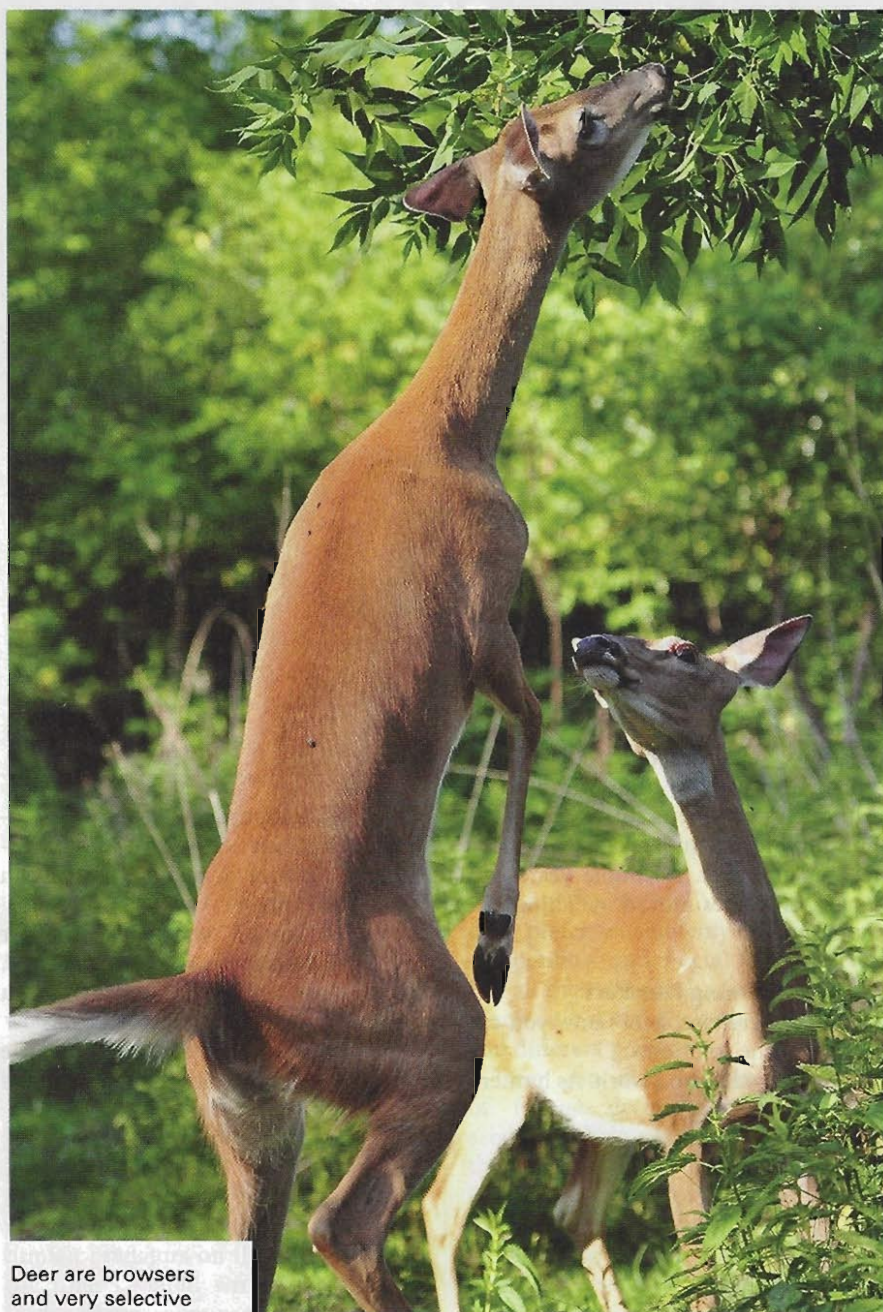
we play an important role in maintaining nature's balance — or at least beginning to restore a balance that's been disrupted.

- Eat more venison. Consider harvesting a doe or two for your freezer. If it's already full from the buck you shot first, consider donating a deer.

- Be a good land steward. Manage your land for quality, not quantity. If







Deer are browsers and very selective in regard to which plant species they eat first. This can have a rippling effect throughout a forest's understory and effectively change its composition.

you see clear browse lines, a depleted understory, or other signs of over browsing, hunt harder. You'll

be rewarded with healthier habitat and healthier deer.

- Hunt near home or head south. Michigan, Minnesota, New York, Pennsylvania and Wisconsin are all big deer hunting states with locally overabundant deer. If you live in one of these states and head north every fall for your annual big-woods hunting experience, great. But the northernmost parts of these states generally have fewer people

and fewer deer. Consider doing some of your hunting close to home, and maybe even bowhunting the suburbs or exurbs.

Although Aldo Leopold has become a patron saint of the modern environmental movement, few remember that he was also an avid deer hunter. Many of today's environmentalists would be even more surprised to learn that he's a key figure in the history of modern bowhunting.

Bowhunters were once in the same position as today's atlatl advocates; they faced an uphill battle convincing state wildlife agencies that archery equipment was an effective and humane way to harvest deer. Leopold, a bowhunter

## Multiple Connections

Even when deer aren't overabundant on a landscape level, recreational feeding concentrates them in one small area all winter long. This leads to severe over browsing — not just in the backyard where the feeder is located, but in surrounding woodlands and in all the neighbors' yards, too.

"Basically," Wisconsin forester Craig Golembiewski told me, "deer come for the corn and stay for the salad." Any tender green pine seedlings poking through the snow are in big trouble. So is any new growth on larger trees. And when homeowners feed deer all year round, the local landscape can end up looking a lot like Dairy-men's.

Baiting has the same effect, especially on small conifers. Even though it only continues for a few weeks, or at most a couple of months, it's at just the wrong time of year. During late fall and early winter, tender pine seedlings are the only tasty green browse remaining. Deer are lured in and concentrated by the bait, and they get tired of the corn after a while. It's kind of like us polishing off a bag of Doritos and still craving a spinach salad with dressing on the side.

Craig told me he can easily see where hunters have baited on public land. Even when he doesn't discover their secret spots until the following spring or summer, the trees tell a story. And if hunters have been baiting near a recently harvested pine plantation, you won't have to be a sharp-eyed forester to follow the story line. You'll be able to see where hungry deer followed the line of newly planted seedlings. Most will be missing.

— Al Cambronne

himself, helped lead the fight. One of his bows is enshrined in a glass case at the Pope & Young Club's Museum of Bowhunting.

When you think about it, none of this should be surprising. Leopold helped us better understand the problems caused by overabundant deer, and he also recognized the solutions. As a deer hunter, you can do your part to help restore nature's balance.

— Al Cambronne is the author of "Deerland," a book about the major role of deer in the environment and in American culture. Visit his blog at [www.alcambronne.com](http://www.alcambronne.com).

