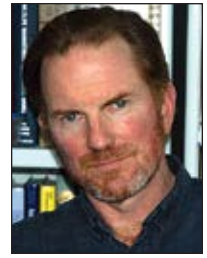


# MANAGING WHITETAIL DEER IN THE 21ST CENTURY: CAN WE ADAPT TO THE CHALLENGE?

SCIENCE BLASTS



JOHN F. ORGAN

B&C PROFESSIONAL MEMBER  
Director of the Cooperative Fish  
and Wildlife Research Units

**Whitetail deer management in eastern North America has had its share of controversy since restoration programs began more than a century ago. Protected deer populations quickly responded to the regenerating forest conditions that followed abandonment of eastern farms during westward expansion. The reduction and elimination of major deer predators helped fuel deer population growth as well. Meanwhile, the science of managing deer, policy development, communications, and public understanding of the dynamic that was unfolding lagged in response. Within a couple of decades after deer population restoration began, clarion calls were sounded for better science-based deer management. Today, if you ask any wildlife biologist in the U.S., “What wildlife species has had the most scientific publications directed towards it?” the overwhelming odds are the answer would be “whitetail deer.”**

The newly emerging vocation of wildlife management in the mid-20th century, funded largely through Pittman-Robertson Wildlife Restoration funds, focused on developing the science needed to inventory and manage deer and the habitats they needed. Deer population estimation models and procedures were developed, habitats were improved, and hunting seasons and bag limits were

established to achieve the deer numbers desired by stakeholders. In the early years, primary stakeholders were hunters who invariably desired more deer, and landowners (mainly, but not exclusively farmers and foresters) who in many cases wanted less deer because of their impacts to crops and forest regeneration. Elected officials, agency leaders, and wildlife managers, with a fresh memory of how we nearly lost deer on the landscape during the 19th century, conservatively focused on the sustained management and recovery of this key species as well as protecting the legacy of deer hunting. The deer management roller-coaster ride was launched!

Throughout the last 50 years, little has changed in the deer management decision-making process. Deer numbers are estimated using deer population modeling, which prompts a season and bag limit framework fixed through a democratic process that uses hunters to remove deer from the landscape and provides public recreational opportunities to achieve a deer density with a balanced sex and age structure that is at (or below) a defined carrying capacity. Carrying capacity traditionally has been thought of in biological terms—the number of animals of a species a given unit of land can sustainably support. In the 1980s, deer biologists Mark Ellingwood and the late Jim Spignesi, who worked

for the Connecticut Division of Fish and Wildlife, coined the term “cultural carrying capacity” to represent the threshold number of animals (deer) in a given area that the public can tolerate. When deer-vehicle collisions, ornamental, crop and forest damage, and zoonotic disease such as Lyme become intolerable, that threshold has been exceeded. The challenge to deer managers is that deer numbers do not necessarily correlate to human tolerance, and tolerance within a given population of humans (e.g., community) may vary greatly; therefore, managing by deer numbers might not work well.

Most controversy about deer management, however, revolves around hunter dissatisfaction with deer numbers. In part, this is because the most common deer management goal still focuses on number (density) and composition of deer populations. Few management agencies give

explicit consideration to assessing habitat conditions. For example, in the northeastern U.S. (Maine to Virginia) only Pennsylvania has explicitly incorporated habitat conditions into their deer harvest recommendations. Because whitetail deer have the potential to affect the functioning of forest ecosystems—and hence, their own biological carrying capacity, it is critical that not only deer populations, but also habitat conditions and values of all stakeholder groups are considered in deer management decisions.

Deer population modeling, as applied by management agencies in eastern North America, has changed little over the past 40 years.


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My colleague Dr. Duane Diefenbach of the Pennsylvania Cooperative Fish and Wildlife Research Unit (see *Fair Chase* Winter 2015, “The Whitetail Rut in Pennsylvania”) believes there are reasons for the lack of advancement.

1. Whitetail deer in eastern North America inhabit a forested ecosystem where the methods used to estimate deer numbers, based on observation counts, are fraught with biases or are impossible to implement.
2. Harvest data are readily available and methods based on using those data (sex-age-kill or reconstruction methods) are easily implemented.
3. Advanced estimation methods require more data and more sophisticated analyses.
4. And, state agencies are limited by funding, staff, and data analysis capabilities.

Diefenbach and his colleagues from eastern state wildlife management agencies have interest in reviewing the status of whitetail deer management programs of state wildlife agencies to learn the state-of-the-science with regard to deer population monitoring and why managing exclusively for deer numbers may be a failed

approach. They would explore the challenges and advantages of explicitly incorporating habitat conditions into deer management decisions. Such an approach has the potential to shift the management focus (and political discussion!) from deer numbers to deer habitat as well as explicitly address scientific controversies about the relative importance of deer herbivory and other factors on forested ecosystems and the values of a broad community of stakeholders. In some suburban areas, people refer to deer as “rats with hooves.” I hope that is the exception, because denigration of an animal as magnificent and culturally important as the whitetail deer is unacceptable. Ideally, such a shift in our approach to managing eastern deer populations as suggested by Diefenbach and his colleagues would engender broader public support for, and tolerance of, healthy deer populations, and recognition of the important role of hunters in the ecosystem. ■




Read the entire article “The Whitetail Rut in Pennsylvania,” as well as all of John Organ’s “Science Blast” columns online in the B&C Associates community. You also have access to 23 years of archived *Fair Chase* articles.

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