

From The Research Biologist: Things To Consider When Setting Regs For Spring Wild Turkey Seasons

Dr. Michael Chamberlain | December 30, 2020

Dr. Michael Chamberlain, Ph.D
Terrell Distinguished Professor of Wildlife Ecology and Management
Warnell School of Forestry and Natural Resources
University of Georgia

With deer season winding down, turkey hunters are eyeing spring and what many of us consider the best time of the year—spring wild turkey season! A question I am often asked is why spring seasons are set as they are—in other words, why does the season open when it does, and why is the bag limit what it is? As we all know, turkey hunters have opinions on when it's best to open turkey seasons and how many birds should be allowable, and those opinions are often pretty variable. As turkey hunters, it's important to understand why the timing of spring harvest matters, and why the number of toms we remove (and when) matters to turkey populations.

In general, states set the opening of turkey season so that we are able to hunt when birds are gobbling, as hearing birds gobble is a primary determinant of hunter satisfaction. Some states use data on gobbling activity to help set the timing of their seasons, whereas other states go farther and use data on hen nesting activity to time hunting so that it occurs around peaks in incubation. Unfortunately, many states use neither approach, and simply set seasons based on social and political pressures that often result in seasons opening well before peaks in incubation. Biologists years ago noted the importance of opening hunting seasons after laying and incubation had begun, so this is the most biologically sound approach given what we know about turkeys and their mating system (more about this below).

In Georgia, research has clearly shown that peaks in incubation generally occur during mid-April, and this is similar from south to north Georgia—the timing varies only by a few days at best. But toms start gobbling in March, even earlier on some select days, so it's natural for turkey hunters to want to be out there to hear them. Before we delve into the timing of the season, let's talk about some basics of the wild turkey mating system—these basics are critical to understanding how the timing and rate of harvest (what percentage of toms we remove) matter to ensuring we have sustainable populations in the future.

Wild turkeys use a mating system that hinges on pecking orders they've established and tested before the onset of breeding in spring. In each group of toms we see in spring, there is a dominant tom that does most breeding within that group. That group of toms interacts with a group of hens that also have a pecking order. When it's time to breed, the dominant hens become receptive and breeding occurs in a sequence, where dominant toms are breeding hens in sequence based on these pecking orders. Some of these hens will go breed with other toms, whether they be dominant toms in other parts of her range, or simply other toms she encounters. So how does the timing of when we harvest toms relate to this—in other words, why does it matter when we kill toms?

Well, toms are ready to breed well before hens are receptive to breeding, hence the gobbling you hear in early March. In other words, the strutting and gobbling we hear in March (and even February) is largely not associated with breeding, it's focused on toms displaying for hens, testing pecking orders, and establishing dominance. In fact, research throughout the southeastern U.S. has shown that toms begin gobbling about 45 days, on average, before peaks in nesting. So, if many dominant toms, and many toms in general, are removed early in the breeding season (March), it creates problems in the turkey world. That's because hens have spent time selecting toms atop their pecking orders, and when those toms are removed early in breeding, she's forced to go back through the process of selecting a tom to breed with—and all toms are not created equal. Earlier research has shown that not all toms are capable of breeding even as adults, because the presence of dominant toms can influence hormone levels in toms that hang around each other. In other words, some adult toms may not be able to produce viable clutches of eggs despite the fact that they're displaying for hens. The bottom line is, we cannot assume that removing a dominant tom today means that another tom will step up and be a breeding tom tomorrow. It appears that things are not that simple in the turkey world.

Have you ever heard the saying, "It only takes one tom one time?" In other words, that saying suggests hens only have to breed with a single tom once to produce a clutch, so once they've been bred, toms are expendable and can be removed. Well, there's much to consider with this statement. First, we can't reliably just look at toms that approach us on a hunt and determine who the dominant tom is, because we're not privy to their pecking orders—despite what we see during our limited interactions with birds. Also, just because a tom comes in strutting while another tom is not, it does not automatically tell us the strutter is the dominant tom—dominant birds routinely allow subordinate toms to display around them. And research has also shown that birds that use a mating system like wild turkeys generally have improved fertility and viability of clutches when hens can breed multiple times with toms—particularly during the period when hens are laying. Why? Because if a tom breeds with a hen that is entering egg laying, he has a better chance of being represented in her clutch. And from the hen's perspective, there is benefit to her clutch if she breeds with a tom multiple times, or with multiple toms, because it allows sperm competition—this simply means that it allows the best sperm to win, and having the most viable sperm to fertilize clutches mean improved fertility across the population.

We know so much about wild turkeys, but there's also much we still need to learn. One thing that we do know is that many years ago, biologists noted that spring seasons would need to be adjusted as turkey populations stabilized and habitat conditions changed. It is important to note that across the Southeast, wild turkey populations have declined during the past decade, and in many areas, hunters and biologists alike are working hard to understand the underlying reasons. Many years ago, biologists suggested season frameworks that focused on timing harvest around peaks in incubation with sustainable harvest rates of toms. The logic was, and still is, removing toms when most breeding has occurred and hens have begun nesting makes the most sense biologically.