

*All photos in this article are by Dr. Jackie Augustine*

# PRAIRIE-CHICKENS: HOME ON THE RANGE

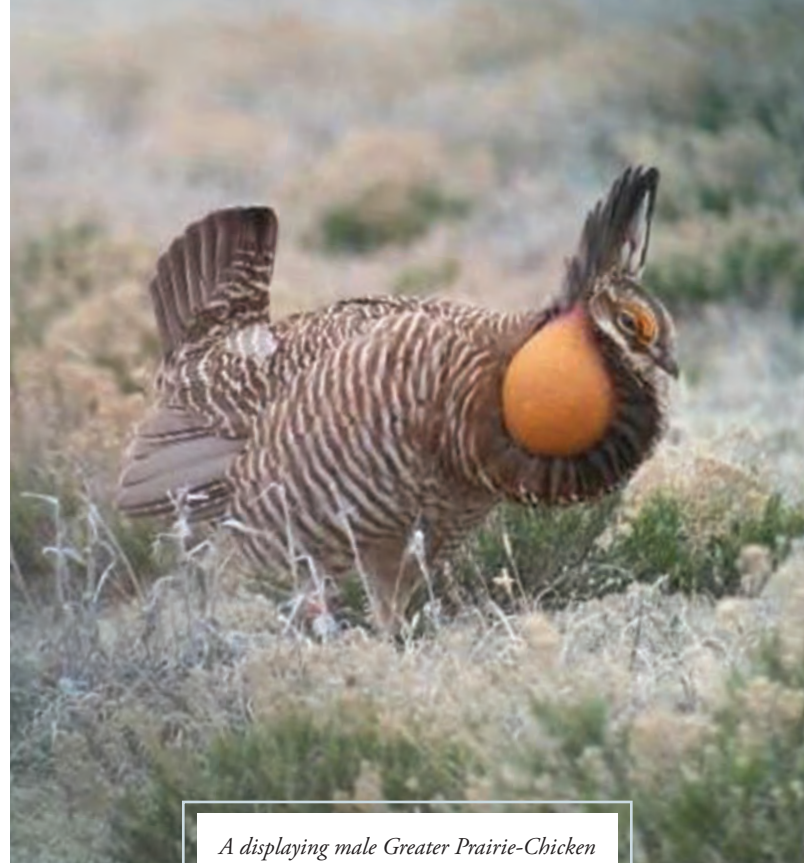
*Dr. Jackie Augustine,  
Executive Director of AOK*

Everyone has that particular animal that makes them feel so grateful to be in nature. Hopefully for you it is something like a chickadee or goldfinch or something else that you have a reasonably good chance of seeing whenever you're outside. For many, it is a bald eagle that symbolizes freedom, or any hawk whose hunting prowess you have the privilege to witness. Maybe it is an owl that hoots outside your window at night that makes your skin tingle in excitement. For me, seeing grouse makes me feel like I am truly in someplace wild.

Grouse compose a relatively small group of birds and include prairie-chickens, sage-grouse, ptarmigan, and woodland grouse like Ruffed Grouse and Blue Grouse. What fascinates me most is their diversity of mating systems – roughly a third are monogamous (one male and one female raise offspring together) and two thirds are promiscuous (males and females may have multiple mates, female raises young on her own). This is contrary to most birds – of which 90% are socially monogamous (although the frequency of fooling around outside the male/female pair varies quite a bit depending on the species). Of the two thirds of grouse that are promiscuous, about half of those (or one third of all grouse) have a unusual mating system, called a lek mating system.

The word, 'lek,' is said to be of Swedish origin meaning 'to play,' and at first glance, males look like they are playing when they gather together in a relatively small area to display. The place where they display is the 'lek'. On these leks, males' mating displays appear comical: they vocalize, puff out their feathers, and perform ritualized behavioral displays. But it is not all fun and games. They also defend small territories through physical fights with their neighbors. The territories do not contain food or nesting sites; the males themselves are the prize that is defended. One reason why these leks are thought to have evolved is to allow females to inspect more males easily. Females are extremely choosy when picking a mate, and they tend to agree as to which male is best. A small minority of males win the majority of mating opportunities, leaving over half of the males never attracting a mate. Once they have mated, females raise the young entirely on their own.

Kansas is lucky to have two species of lek-mating grouse currently, Greater and Lesser Prairie-Chickens. Greater Prairie-Chickens occupy the eastern part of the state, and are associated with tallgrass prairie. Lesser Prairie-Chickens occupy western Kansas, and are associated with shortgrass prairie. The two species' ranges overlap in central and northwestern Kansas where mixed grass prairie occurs.



*A displaying male Greater Prairie-Chicken*

Greater and Lesser Prairie-Chickens share many components of their display. They both start by stomping their feet rapidly against the ground making a 'drumming' sound. As they stomp, their heads are pointed forward, their tails and 'pinnae' feathers behind the head are pointed up, and their wings are next to their bodies but are spread so that the wing tips are almost touching the ground. When the stomping stops, a vocalization is given while simultaneously inflating two fleshy air sacs in their throat, perhaps amplifying the sound. The vocalizations are vastly different between the species, with lessers giving a short, higher-pitched 'pop' and greater's producing a longer, low-frequency, three-noted 'boom' vocalization. Lesser Prairie-Chickens also have a unique display where males rapidly counter-sing, with each male alternating 'pop' vocalizations with the other.

Physically, Lesser Prairie-Chickens are 80% the size of a Greater Prairie-Chicken. At a distance, the species are hard to distinguish unless you can hear the vocalization or see how long the air sacs stay inflated (short 'pop' vs longer 'boom'). At close range, males can be distinguished by the color of their air sac. Lessers have a magenta-colored air sac; whereas greater's air sacs are orange. Females and non-displaying males are much harder to distinguish to species because you have to rely on overall plumage coloration. Greater Prairie-Chickens have bolder barred plumage with whiter whites and broad dark brown bars, whereas Lesser Prairie-Chickens have off-white whites and thinner, light brown barring. Additionally, the barring on the belly of Lesser Prairie-Chickens may be absent.

The barred plumage of prairie-chickens makes them virtually impossible to see when they are not on leks. The best time to see these birds is in spring. They display between mid-March and mid-May from a half hour before sunrise to about three hours after

sunrise. When I try to find leks, I search from public roads, for you can hear an active lek of either species from about a mile away on a calm morning. After getting landowner permission, I walk to the area where I think they are displaying in the middle of the day so as not to disturb them. They generally display on an area that is a bit higher in elevation than the surrounding area and has sparse grass. This helps the vocalizations travel a long distance as well as allowing the birds to see predators approach. I know I have found the lek site when the ground is littered with feces and feathers plucked from fighting males. I then mark a site on the east side of the lek with a piece of rebar and reflective tape. The rebar marks the location for a blind, and the reflective tape allows me to find the rebar the next morning. The taller grass in this area and the lack of feathers and feces tell me that it would be a good place for a blind.

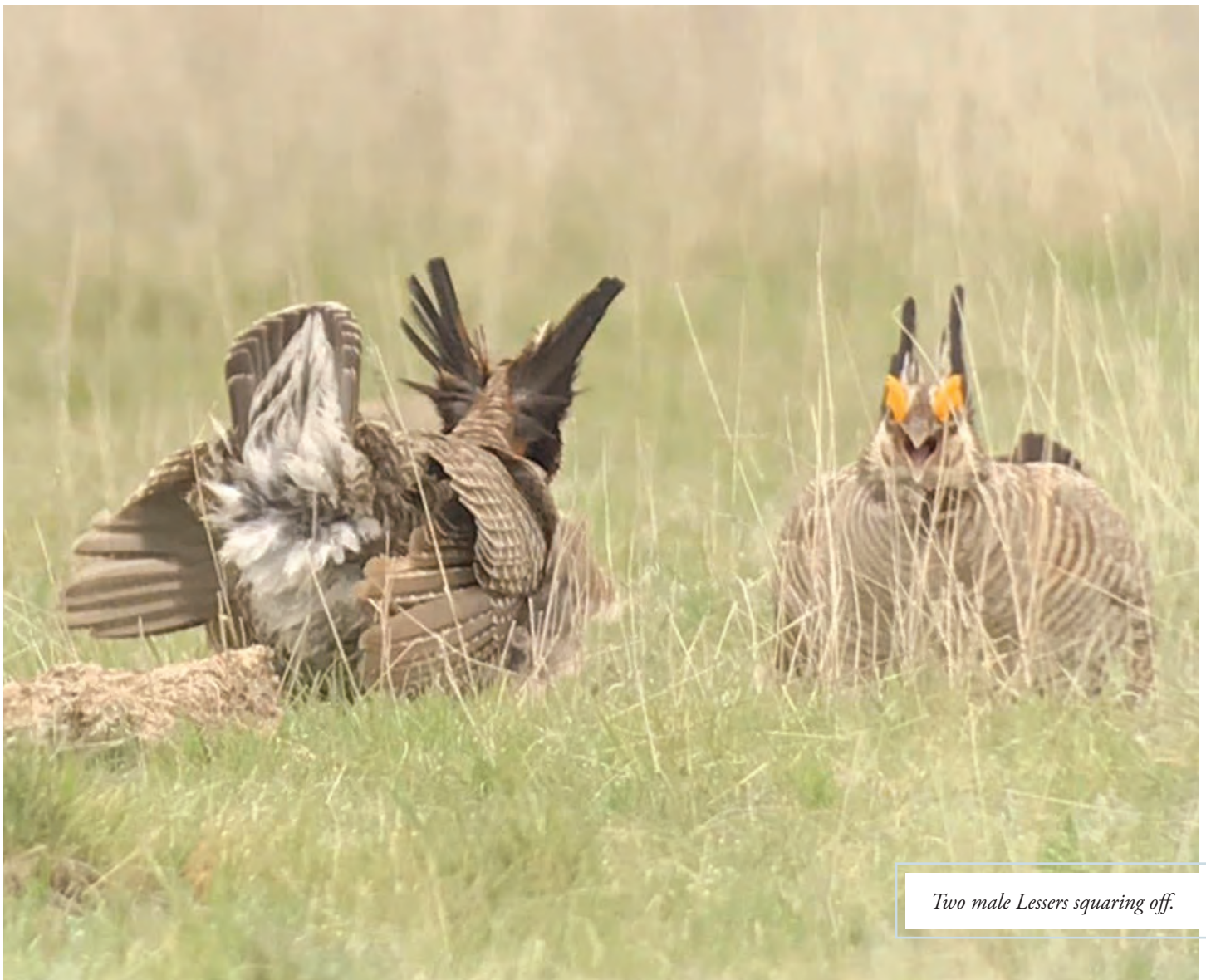
I choose the east side so that the rising sun will be at the back of the blind. This prevents the light from shining into the blind and revealing my location (not to mention that it also provides the best photography opportunities).

The next morning, I wake up several hours before sunrise to eat a good breakfast before heading out. I need to be at the lek site at least an hour before sunrise to set up the blind. Horned Larks are already singing at this time, and the sky is still black. If I have an extra couple of minutes, I gaze at the Milky Way, which I have never seen any brighter than at a lek site. I enter the blind when the meadowlarks start singing, about 45 minutes before sunrise. The birds show up about 30 minutes before sunrise (if it is cloudy or raining, they might sleep in a couple minutes). At first, you



*A male Greater Prairie-Chicken checking out his competition at the lek. The grid stake was used to map the size of males' territories.*





*Two male Lessers squaring off.*

hear them – a flutter of wings, a cackle. They can walk or fly to the lek. Then, you see dark shapes move in front of you. Finally, one displays. Soon, they are all displaying.

Females usually visit shortly after dawn. I can tell when one is present by the behavior of the males. There is an unmistakable increase in the intensity of males' display and aggression. Females often look as if they barely notice the males, preferring to munch on vegetation. When they are interested in a male, they seem to sit on a territory boundary watching the fight that ensues between the male and his neighbors. If there are multiple females on a lek, they fight with each other to gain first access to a male. Females fight in a similar way as the males – approaching each other with their pinnae pointing up and chasing each other. When a female is ready to mate, she bends down and forward and spreads her wings. The male steps on her back and grabs the feathers on the back of her neck with his beak while they copulate. The process only takes a couple seconds, but that is enough time for neighboring males to run at the happy couple and knock the male off her back. It often takes two or three attempts before a copulation is successful. Following successful copulations, females shake their wings and body vigorously – like a dog shaking water off its body. It is

believed that this behavior flings off ectoparasites that may have been transferred during the mating, but it has not been tested.

**My spring is not complete without seeing this yearly ritual unfold in front of me from the quiet of a blind. It makes me feel connected with nature and gives me a glimpse of how the land might have been before European settlement.**

There is often a bison wallow near a lek showing that the birds prefer virgin prairie, as plowing would have destroyed the historic wallow. If you have never seen prairie-chickens from a blind, and your body allows you to sit in the cold for four hours or more, I strongly encourage you to seek out the experience I have described. Even if you are only able to watch the saga unfold at a distance, viewing prairie-chickens is an opportunity you will never forget.