

BEHAVIOR OF LEKKING SAGE GROUSE IN RESPONSE TO A PERCHED GOLDEN EAGLE

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Other investigators (Patterson 1952, Wiley 1973, Hartzler 1974) have described the anti-predator behavior of lekking Sage Grouse (*Centrocercus urophasianus*) to an approaching Golden Eagle (*Aquila chrysaetos*). However, no accounts exist of the behavioral responses of Sage Grouse to a perched Golden Eagle, largely because most Sage Grouse leks are on open sagebrush plains void of trees that might serve as perches (Patterson 1952). The following observations were made at a somewhat unusual lek in northeastern Utah (Figure 1).

At 0540 on 10 April 1983 I observed a juvenile Golden Eagle as it landed on the ground approximately 2 km southeast of the south mating center. At 0608 the eagle

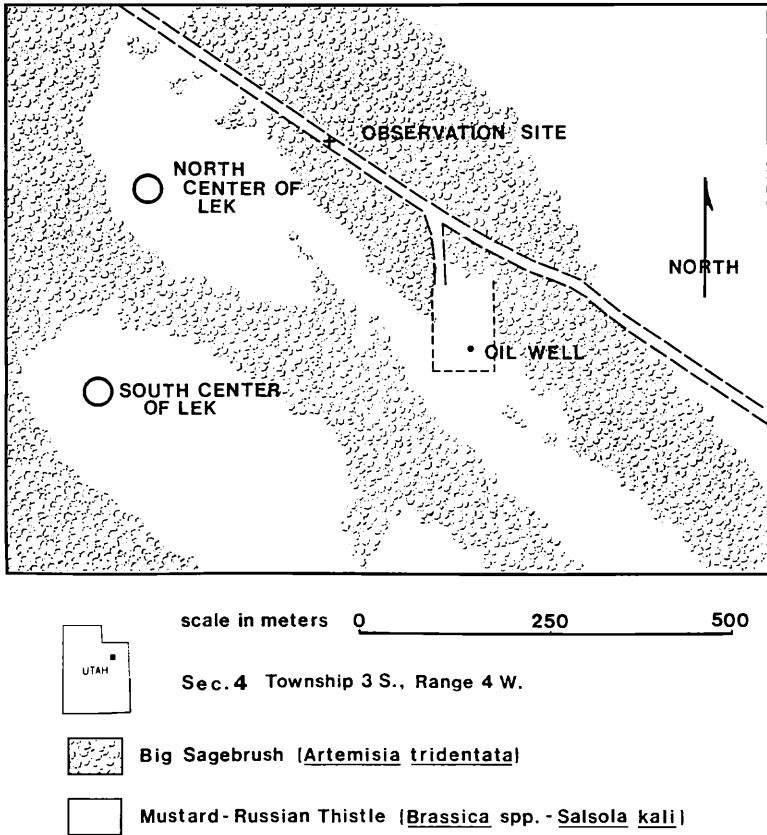


Figure 1. Location of Sage Grouse study area in northeastern Utah.

NOTES

began flying about 2 m off the ground in the direction of the oil well. When it was approximately 150 m south of the oil well it stooped to the ground. At 0614 the eagle flew directly toward the oil well. Three Sage Grouse flushed directly in front of the eagle as it gained altitude to land on the well pump. The eagle made no attempt to capture any of the grouse, but did circle the area once before landing on the pump. After landing, the eagle sat in a vertical position facing west. Its frequent side-to-side head movements suggested my presence may have distracted it.

Apparently the grouse on both display centers did not see the eagle until just prior to its landing, at which time all display activities came to an immediate halt. A previous count at 0600 revealed that 23 grouse (21 males and 2 females) occupied the south center and 10 males occupied the north center. Immediately following the arrival of the eagle at the well I could only see 12 males on the south center and 4 males on the north center, even though no birds had flushed in the interim. All birds were motionless and in a crouched or semi-crouched position looking in the direction of the eagle. It seems that the grouse froze immediately upon the arrival of the eagle. Air sacs of most males were about half inflated.

All grouse remained motionless until 0628 at which time the master cock of the south center stood and started displaying. The behavior of the eagle remained unchanged. By 0629 seven of the cocks on the south center had resumed displaying. Interestingly, the males displaying were the central males while the males still huddling were the peripheral males. At 0632 all but three males on the south center were displaying with tails fanned. All grouse flushed from the south center at 0636. Flight direction was northerly, the same as that taken during undisturbed lek departure. Again, the attentiveness of the eagle was unchanged.

Meanwhile, at the north center, the master cock was standing while the others remained huddled. By 0639 two cocks were standing with air sacs inflated. At 0641 the grouse flushed from the north center in the same direction as the others. The eagle remained perched until 0646; then it flew south out of sight.

Of particular interest is the fact that the birds previously identified as the master cocks (based on hen clusters and frequent copulation) were the first to stand and initiate lekking activities in the presence of a potential predator. Other observations I have made, as part of an ongoing study of aerial predation of breeding Sage Grouse, suggest that the central cocks are also more reluctant to huddle when a raptor approaches the lek. Such apparently non-uniform anti-predator behavior may be related to age, and thus experience, of the males occupying the lek.

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