

while the song most often given by another was essentially a copy of the song of Black-chinned Sparrow (*Spizella atrogularis*). This imitation was close enough to our ears that we originally misidentified the song to species.

DISCUSSION

All of these nesting species were found in habitat with vegetation structure similar to that found in their typical breeding habitat in the mountains of southern California. Suitable habitat may occur in very limited patches in the Sierra San Pedro Mártir. For example, all of our observations of summer Hermit Thrushes come from a single small stand of mature white fir on a steep north-facing slope along the high eastern escarpment. There is an abundance of downed timber and scattered shrubs in the ground layer. The ground layer in other fir dominated areas is much more open. Suitable habitat for Green-tailed Towhees and Fox Sparrows is also limited. Open forest with sufficient brushy understory is apparently restricted to a narrow band paralleling, and immediately east of, the range's lower western escarpment. In contrast, Dusky Flycatcher habitat is extensive and includes all the aspen groves and numerous islands of mixed aspen, lodgepole pine, and fir lining the edges of the extensive central plateau meadow system.

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Greater Prairie-Chickens Displaying in Tree on Lek

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ABSTRACT.—I describe 23 observations of 4 Greater Prairie-chicken males displaying from a tree in eastern Kansas. This was observed on a lek located in predominantly native tallgrass prairie containing a few scattered trees. *Received 24 May 1997, accepted 5 Aug. 1997.*

Greater Prairie-Chicken (*Tympanuchus cupido pinnatus*) leks are generally on high

prairie with grass cover that is relatively short compared with surrounding vegetation (Yeater 1943; Schwartz 1944, 1945; Schroeder and Braun 1992). Leks are in open country with wide vistas (Hamerstrom et al. 1957). Displays are typically performed on the ground but have been performed on blinds and other raised positions (Schwartz 1945, Hamerstrom and Hamerstrom 1973). This note describes prairie chickens displaying in a tree.

The observed lek was in native tallgrass

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prairie in Lyon County, Kansas (96° 08' 00" W, 38° 32' 02" N). The grassland area including the lek was moderately grazed, annually burned, and interspersed with ~20% woody cover and ~10% cropland. Woody vegetation in the area was scattered eastern cottonwood (*Populus deltoides*), elm (*Ulmus* sp.), hackberry (*Celtis occidentalis*), and osage orange (*Maclura pomifera*), with eastern red cedar (*Juniperus virginiana*) invading prairie pastures or abandoned cultivated fields. Density of prairie-chicken leks in this area was ~0.12 leks/km².

Four prairie-chickens were observed in a 6 m high cottonwood tree when the lek was first observed on 26 March 1997. All 4 birds were "booming." On closer observation, it was found that the lek consisted of 16 males displaying on the ground beneath and north of the tree. Another 3 m high cottonwood was present 5 m from the tree being used by the prairie-chickens.

The four males in the tree were performing in part the "variant" boom as described by Grange (1948:177). This display consisted of erection of pinnae, inflation of air sacs, and snapping of the tail. The accompanying vocalizations included the staccato cackle, booming, and the whoop call (Hjorth 1970). Males on the ground performed the complete display including dancing and turning in circles.

The 4 males in the tree periodically flew to the ground to interact with the 16 males there. Each time a male flew from the tree to the ground, a male flew to the tree within a few seconds. These may have been the same or different males. The above observations were noted on 23 different mornings during peak display (~20 Mar–20 Apr). There were 4 males using the tree on all observation days. The number of males on the ground beneath the tree ranged from 16–21. A minimum of 7–10 females were observed on the ground on or near the lek. One female perched in a cottonwood tree 500 m from the lek on 2 days of observation.

This lek has been under observation for most display seasons since 1964. During that period, the lek has moved 0.8 km south of its

first location. The last movement of this lek was 0.24 km southeast of its previous booming season location. Most (~80%) of the area within a 1.6 km radius of this lek is native prairie pasture.

Since all repeat observations of this booming ground were similar, it is assumed the observer did not influence use of the tree. Grange (1948) noted the "variant" boom occurring in trees "rarely" when birds were disturbed. It was, in fact, the observation of prairie-chickens in a tree from 0.8 km distance that drew the observer's attention to the whereabouts of the lek.

Use of trees by female prairie-chickens has been observed in response to intrusion and for winter budding (Schmidt 1936). Use of trees for display, to my knowledge, has only been mentioned by Grange (1948).

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