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Lesser Prairie Chicken Use of Man-Made Leks

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TABLE 1

Release sites and subsequent known history of 129 tagged mule deer livetrapped on or near the Los Alamos Scientific Laboratory in north-central New Mexico and transplanted elsewhere in the state.

Release Site	No. released	Dist. from capture site	No. relocated	No. returned to capture site
Ben Hall Ranch	21	240	1	0
Navajo Reservation	16	230	0	0
Pecos	19	68	1	0
Borrego Mesa	10	50	2	1
Pacheco Canyon	17	42	1	0
Caja Del Rio Grant	13	23	1	1
Garcia Canyon	33	12	8	5
Total	129		14	7

planted 12 km away. There were no significant differences ($p > 0.05$) in the return rate between sexes or age classes, although sample sizes were small.

Based upon these data we conclude that mule deer in our area can return to their original capture location over transplanting distances of at least 50 km.

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LESSER PRAIRIE CHICKEN USE OF MAN-MADE LEKS.—The lesser prairie chicken (*Tympanuchus pallidicinctus*) has suffered severe population declines, presumably due to overgrazing, brush control, and conversion of rangeland to cropland (Hoffman, J. Wildl. Manag. 27:726–732, 1963; Jackson and DeArment, J. Wildl. Manag. 27:733–737, 1963; Jones, J. Wildl. Manag. 27:767–778, 1963). However, other of man's activities perhaps have benefited the species. The purpose of this paper is to describe lesser chicken use of man-made lek sites and to discuss the management implications of these results.

A survey of lesser prairie chicken leks was conducted from Feb. to May 1978 on a 5,200 ha block of rangeland along the northern edge of Yoakum Co. in the Texas Panhandle. Study sites were in an area of sloping plains and strongly sloping, stabilized dunes; soils were sands or sandy loams. Shinnery oak (*Quercus havardii*) and sand sagebrush (*Artemisia filifolia*) dominated the vegetation, which was typically about 0.5 m tall. Crawford and Bolen (J. Wildl. Manag. 40:96–104, 1976) described the soils, vegetation, and land use of northern Yoakum Co.

Leks were found by listening for vocalizations 0.5 h before to 1 h after sunrise during the spring courtship season. Counts of birds on leks were made from sunrise to 1.5 h after and leks were mapped on aerial photographs. The history

of the areas used for lek activity was determined from evidence on the site and interviews with landowners.

Of the 14 leks found on the study area, two were on areas of relatively undisturbed natural vegetation, and 12 were situated on open areas resulting from human disturbance. Of these 12, eight were on compacted caliche pads established for oil exploration, three resulted from tillage, and one was in an experimental herbicide plot treated with pelleted tebuthiuron. Oil pads were approximately 40 X 40 m. The natural sites were on slightly elevated terrain where shinnery oak was between 10 and 20 cm tall. Natural areas, herbicide treatment plots, oil pads, and reverted cropland averaged about nine males, whereas areas situated near stock tanks and cultivated cropland averaged about four males. The average distance between leks on the study area was 1.25 km; none was closer than 1.0 km to another active lek.

The present data suggest that lesser prairie chickens readily use bare areas resulting from human activity for courtship and display. Thus lek construction could benefit the species in extensive blocks of homogeneous vegetation where suitable lek sites are lacking. Also, construction of potential lek sites could be used to attract birds away from sites disturbed frequently by vehicular traffic and other machinery. Disturbances may be inimical to breeding activities (Crawford and Bolen, *Southwest. Nat.* 21:238-240, 1976). Use of man-made leks subject to disturbance could be discouraged by breaking up caliche or compacted soil to encourage growth of vegetation.

Constructed leks should be slightly elevated, undisturbed, and near suitable nesting and wintering habitat. Leks should be at least 1.2 km from other suitable, active leks or use may be minimal. Recorded vocalizations may hasten use of artificial leks as this attracted greater prairie chickens (*Tympanuchus cupido*) to booming grounds (Silvy and Robel, *J. Wildl. Manag.* 31:370-373, 1967).

Herbicide application may be an effective means of creating space for courtship. The herbicide-treated plot in this study closely resembled the two natural leks in that vegetation was 1 to 4 dm tall and scattered over the ground. Such cover apparently adds to the stability of greater prairie chicken grounds (Anderson, *J. Wildl. Manag.* 33:636-643, 1969). Tebuthiuron was applied at rates of 1, 3, 5, and 7 kg/ha (R. Pettit, pers. commun.) on the area used by lesser prairie chickens. Rates of 3 to 5 kg/ha appeared most appropriate. Lower rates did not result in the low vegetation required on leks, and higher rates resulted in near total plant kill and problems with wind erosion. This is Research Note TTU 9-193, Noxious Brush and Weed Control Program, Coll. Agr. Sci., Lubbock, Texas.—*Maple A. Taylor, Department of Range and Wildlife Management, Texas Tech University, Lubbock, TX 79409.*

ADDITIONAL RECORDS OF *BAIOMYS TAYLORI TAYLORI* (THOMAS) IN TEXAS.—The northward dispersal of the pygmy mouse, *Baiomys taylori*, in Texas has been rapid and fairly well documented. In 1905, Bailey (*N. Am. Fauna* 25:1-222, 1905) reported the species only from the extreme southern section of the state. By 1960 it was reported in central Texas by Packard (*Univ. Kansas Publ., Mus. Nat. Hist.* 9:579-670, 1960), and a decade later the species was reported from north-central Texas by Baccus (*Texas J. Sci.* 22:182, 1971) and Hart (*Southwest. Nat.* 17:213-214, 1972).

Specimens are now available from the panhandle of Texas. In Dec. 1972, a pygmy mouse was trapped 8 mi SW Paducah and three specimens were trapped