Spring use of stock ponds by Lesser Prairie Chickens.—Little is known regarding the water requirements of Lesser Prairie Chickens (*Tympanuchus pallidicinctus*). However, man-made stock ponds have seemingly increased the availability of water for this species in otherwise semi-arid prairie regions. Copelin (Oklahoma Wildl. Dept. Tech. Bull. 6, 1963) and Jones (Auk, 81:65–73, 1964) confirmed that Lesser Prairie Chickens utilized earthen stock ponds for drinking water in late summer and fall. Our study reports the influence of stock ponds on Lesser Prairie Chickens during spring in the western edge of the Texas Panhandle.

The study was conducted from March through May, 1972, in Yoakum County, Texas. The area lacks permanent streams and lakes; stock ponds supplied by windmills are the only permanent water sources. The average annual precipitation measures 15.58 inches, most of which comes from May through October (U.S.D.A. records). Four study areas, two consisting of earthen stock ponds, and two with metal stock tanks, were observed. One of the latter sites consisted of three metal tanks, one of which was buried to ground level; the other site was a single tank above ground. One earthen pond site had a gobbling ground within 100 yards. The other sites had leks from 0.5 to 0.7 miles away. Our data include both direct observations and the incidence of prairie chicken tracks at the water's edge as evidence of watering, although waves and winds undoubtedly obliterated some tracks before they could be recorded. When intact, the tracks were subsequently erased to avoid duplication of counts.

The first observation of springtime use of stock ponds was made on 18 March. A lek occupied by 10 males was located 100 yards from an earthen pond. About one hour after sunrise, a single male flew from the lek to the edge of the pond and drank for 5 minutes and then returned to the lek. Within 10 minutes, all of the males went to the pond. Three males flew directly to the pond's edge and began drinking. Seven other males flew to within 50 feet of the water. At least five of these males walked to the water and also began drinking. All 10 males flew away together after about 5 minutes. Similar observations were made in April. On one occasion, a female was observed drinking 1.5 hours before sunset. Males were also observed watering in the evening. Tracks were found around this pond on several occasions during March and April. Four additional inspections in May disclosed no further use of this pond.

Signs of prairie chicken use were also found at the second earthen pond. Although this pond did not show use in March, direct observation of birds watering and fresh tracks indicated use throughout April. This site was also checked four times in May with no use indicated.

Use of a third site, a metal tank buried to ground level, was observed on only one occasion in late April. This tank was dry throughout March but later collected considerable runoff. Tracks indicated that Lesser Prairie Chickens drank from the buried tank as well as the runoff. No use of this tank was found in May.

The fourth site, containing a metal tank above ground level, was not used at any time during this study. The rim of this tank provided little area for perching and the water level was low throughout the spring.

Male prairie chickens usually came to water after the intensity of morning gobbling dropped off. In the evening, the males watered before gobbling. All watering was observed between one and three hours after sunrise and between one and three hours before sunset. When males came to water in the morning, they normally spent about 5 minutes at the edge of the tank. They spaced themselves 2 to 3 yards apart and no displaying or fighting was observed during the morning drinking period. In the evening, the males spent more time at the edge of the tank and, besides drinking, they preened

and rested. No gobbling was observed at the tank in the evening, but males occasionally chased one another at the water's edge.

Drought conditions existed throughout all study areas during March and April. The only measurable precipitation received during these two months was 4 inches of snowfall on 31 March. This snowfall resulted in 0.56 inches of precipitation. The 25 year average for March and April is 0.53 and 0.79 inches, respectively. In early May, there were frequent showers and the vegetation began to "green up"; also there was normally a heavy morning dew. The total precipitation for May was 2.56 inches. The 25 year average is 1.92 inches (U.S.D.A. records). The use of stock ponds by Lesser Prairie Chickens coincides with this period of drought and eased when the drought was relieved.

The differences in water utilization at the various study areas likely reflect the availability of water in the habitat from other sources. For example, diet is undoubtedly of importance in this respect as Lesser Prairie Chickens perhaps do not necessarily require abundant free water in the spring. This species commonly inhabited arid regions prior to settlement and the concurrent development of water resources. However, Lee (J. Wildl. Mgmt., 14:475–477, 1950) reported that populations of Lesser Prairie Chicken decreased during drought years. The reasons for such declines are no doubt complex, but it seems quite probable that the advent of man-made stock ponds may now enhance survival of Lesser Prairie Chickens during periods of spring drought.—JOHN A. CRAWFORD AND ERIC G. BOLEN, *Department of Range and Wildlife Management, Texas Tech University, Lubbock, Texas 79409, 2 February 1973.*

Precocious lek behavior in Sharp-tailed Grouse Chicks.—It is known that juvenile Sharp-tailed Grouse (*Pedioecetes phasianellus*) are able to take part in lek displays as early as their first autumn (Lumsden, Ontario Department Lands and Forests, Rep. No. 6, 1965; R. J. Brown, in prep.), but the earlier development of these displays appears not to have been examined in detail for this species. The precocious occurrence of "dance" displays was reported for young grouse by Ernest Thompson Seton (Trail of an artist naturalist, Scribners, N.Y., 1940) but has not, to my knowledge, been reported elsewhere. Observations that I made, on three occasions, of this phenomenon in 3- and 4-day-old hand-reared chicks, are reported here.

On the first occasion, as my hand containing a chick was moving past another, the latter lowered its head, and with neck outstretched, beak slightly open, wings spread and curved downward, tail up, and feet stamping rapidly, followed my hand across the box. This behavior pattern appeared to be identical to the tail-rattling portion of the lek display (Lumsden, loc. cit.; pers. obs.). This behavior was next observed on two occasions during the following day, when the chicks were four days old. On one of these occasions the behavior pattern was elicited in the same manner as described above, on the other occasion, simply by opening the box in which the chicks were being held. Subsequent dissection showed the gonads to be less than 1 mm in diameter, and not hypertrophied. My observations of this phenomenon agree with Seton's completely, except that the chicks I observed were younger, no crowing occurred and only one of the chicks danced at a time.

By presenting relatively intense stimuli to domestic chicks, Andrew (Anim. Behav., 12:542, 1964) produced various calls similar to those produced in chicks injected with testosterone. More recently, Vidal (Behaviour, 39:20, 1971) has described adult-like sexual responses in domestic cocks as young as 4 days of age. The fact that Sharp-tailed Grouse chicks can exhibit a complex behavior pattern similar to that shown by adult males on the dancing-ground indicates that in this species, one can similarly relate such