

... in the shortgrass prairies of New Mexico

Survivorship and Microhabitat Use by Lesser Prairie-Chicken Broods in Southeastern New Mexico

by Luke Bell

Luke Bell recently graduated from Southeastern Oklahoma State University with his B.S. in Conservation of Wildlife/Fisheries. He is currently working on his M.S. in Range Ecology at Oklahoma State University studying brood survivorship and microhabitat use by Lesser Prairie-Chickens.



Lotus Altman



Luke Bell

Microchips planted subcutaneously can be read by the pit-tag reader. This will aid in the long term monitoring of individual birds.

PIT tags were used to mark additional chicks in each brood for future identification purposes. Since data for chicks in the same brood are not statistically independent, only 2 chicks per brood were radioed. The radioed chicks were followed every other day using radio telemetry equipment to determine microhabitat and thermal refugia preferences for the initial 3 stages of their life.

Investigation of the first 30 days, known as the *chick stage*, was a new frontier for LPCH studies since little information is available for this period. Chick habitat use fluctuated depending on the time of day and whether the chicks could fly. At day-break, chicks foraged in a grass/forb mix within 10-20 feet of the hen. As the temperature increased throughout the day, the hen led her chicks to the shinnery-oak covered sand dunes where the chicks found shade. The dunes appeared to provide a cool resting place for chicks and adult birds. In the late afternoon the hen and her chicks moved down from the dunes into a similar grass/forb mix where they spent the night. Almost all the chicks slept under the hen's wings with the occasional chick or two sleeping within a foot of the brood. At 14 days of age, chicks can fly but still show similar habitat use patterns.

Finding cryptically-colored chicks in dense habitat was a challenge. A recording of chick peeps was made while processing a brood. When the chick peeps were played, the hen rushed for the recording. This technique allowed for a quick visual on the chick's location before the hen had a chance to lead us away.

At 30 days old, the chicks were recaptured and fitted with a 3-month lived *poult* radio transmitter. In order to collect the vegetation and weather data we needed, an exact location was vital at each stage. Whereas the *chicks* would remain in their location when approached, most *poults* would flush. To acquire an exact location for poults, a kiting technique was developed. With a technician flying a raptor-silhouetted kite 15-25 feet above the poults, the poults remained motionless, allowing us to determine a non-biased exact location. This technique was only used on birds that were frequent flushers to avoid habituation to the kite. Poults habitat use was very similar to chick habitat use, except that the poults and the hen began to move greater distances between checkups.

At 91 days old, the poults were considered *juveniles*. For the last time, the birds were recaptured and fitted with an adult radio transmitter and leg bands. Only three of the original 17 radioed chicks had survived and will be followed until spring to determine what percentages of chicks made reproductive stages.



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A Lesser Prairie-Chicken hen looks out from the native brush that is such a critical part of her brood's habitat on the shortgrass prairie.