



SOCIETY OF

TYMPANUCHUS

CUPIDO

PINNATUS

LTD.

NEBRASKA SANDHILLS PROGRESS REPORT No. 3 – January 24, 2013

The information in this Progress Report is preliminary and ongoing. As such observations and data are incomplete and can and will change. Thus it should not be cited or quoted until a final report is produced.

A total of 63 nests of radio-marked prairie grouse were located in Nebraska in 2012. Nest success was 30% (18/63) or 20% lower than that observed in northwestern Minnesota in 2012. All but 5 of the nests located in Nebraska were found in native sandhill habitat (90.4%); 3 nests (4.8%) were located in CRP grasslands and 3 (4.8%) in hay meadows. Nests were predominately found in bunch grass habitat dominated by little bluestem, Panicum or switchgrass and Kentucky blue grass. The lower nest success we documented in Nebraska is probably due to drought conditions but more so due to the fact that cover is not as dense or tall as the residual cover found in the cool season grass and tall grass prairie cover present in Minnesota and Wisconsin. A total of 9 radio-marked hens (47.4%) that had successful nests fledged chicks in Nebraska and the average number of chicks fledged (survived to 6 weeks) was 4.3 (Range 1-8). This is 2 chicks higher than the 2.3 (range 1-6) seen in Minnesota in 2012.

From April – October, prairie-chickens in the sandhills spend nearly all their time in “native” habitat which suggests they are dependent on native grasses, forbs and insects during the breeding season, summer and early autumn.

A simple analysis of seasonal movements (summer to autumn) so far showed that the radio-marked greater prairie-chickens in Nebraska are much more mobile than their counterparts in Minnesota. The mean maximum movements summer to autumn for radio-marked prairie-chickens in Nebraska are 2 to 5 times greater than those of Minnesota. In addition, all the age and sex cohort movements in Nebraska are greater than those seen in Minnesota. Overall, hens are much more mobile than cocks in both Nebraska and Minnesota. What is most surprising is the mobility of adult cocks and young of the year cocks in Nebraska where the mean moves are twice that of all the cohorts in Minnesota.

The maximum moves from summer to autumn in Nebraska were made by two adult hens and a young of the year hen. These birds left their summer areas and moved 35 miles to the northeast to a large complex of cornfields interspersed with grassland areas too hilly to plow. These birds have been feeding in the corn and night roosting in the adjacent undisturbed grassland cover. This is a daily pattern similar to that seen in birds in Minnesota and Wisconsin in the cold weather

months. The maximum move made this autumn by a radioed bird in Minnesota was 5.5 miles and was made by an adult hen.

The big question now is why do the prairie chickens leave the grasslands and shift to agricultural fields, what if anything is lacking in the Nebraska sandhills during the autumn and what did prairie-chickens do before the establishment of agriculture and the winter feeding of cattle? And, where are all the missing radioed birds and what are sharp-tails doing?

The size of the area covered summer to autumn by dispersing radioed prairie-chickens in Nebraska in 2012 so far is estimated at 1,150 square miles. In Minnesota this dispersal area was approximately 350 miles in 2012 and in Wisconsin after 1998 we never had any birds disperse off of the Buena Vista Wildlife Management Area; an area of about 72 square miles. Typically the greatest dispersal movements of prairie-chickens occur just before the nesting season (Halfmann 2002, Toepfer 1988 and Toepfer and Eng 1988). This means we are likely to see more and greater movements in Nebraska between now and spring.

Some Nebraska radioed prairie-chickens have now established regular movement patterns of feeding in the cornfields during the AM and PM, roosting in the adjacent sandhill grassland and then flying to taller lowland grass areas for night roosting. Some of these individuals are making very long daily movements of 1-1.5 miles from the cornfield to night roosting areas. Radioed cocks in Minnesota and Wisconsin have never been documented moving this far between feeding and night roosting areas. This is likely because they do not have to move that far because agricultural fields in Minnesota and Wisconsin are in closer proximity (0.25-0.50 miles) to the grassland cover used for nesting and night roosting.

One obvious question is will these birds that have moved 15-35 miles return to their spring/summer areas or will they remain in their autumn areas? And again, where are all the missing radio-marked birds in Nebraska, how far have they moved and how far will they move? In Minnesota and Wisconsin birds return to the grassland areas in early spring and these shifts are associated with the loss of snow cover and the onset of the breeding season.

The remote hilly terrain in Nebraska is the most difficult terrain I have worked in to follow radio-marked animals. At times radioed birds have been just on the other side of a hill only a quarter-mile away and a radio signal could not be detected. By comparison, tracking prairie-chickens in Minnesota, Wisconsin and North Dakota where the terrain is flat is easier.

The Nebraska project has now become about nesting, brood production and general dispersal movements of radio-marked prairie-chickens. Because of the difficulty of keeping track of radioed birds in the hilly terrain and large movements seen so far, it will be difficult if not impossible to get an accurate estimate of

survival. Other possible options to get good information are to make the radios more powerful by reducing life, use back pack GPS satellite transmitters, improve efficiency of airplane searching and use recoverable GPS radios that will get multiple daily locations and store them on board which could provide information on daily movements and document when and how individuals are making these long moves from season to season.

John Toepfer, Ph.D.