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## NEBRASKA SANDHILLS PROGRESS REPORT No. 4 – July 22, 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.*

The spring storms and snow delayed and at times interrupted the breeding season this year. The breeding peak in Nebraska occurred on about 30 April whereas last year it occurred on about 3 April.

### TRAPPING

Four individuals (myself, Gary Huschle, Terry Wolfe and Matt Rethaber and Robert Dugenske) trapped greater prairie-chickens (*Tympanuchus cupido pinnatus*) on 13 booming grounds and one sharp-tailed grouse (*Tympanuchus phasianellus*) dancing ground. STCP Board Member Jeff Kenkel visited us for a day and a half in Nebraska and met Rob Dugenske who will be working on insects and broods for us this summer.

Between 22 March and 30 April 2013 a total of 137 prairie grouse were trapped. This included 65 hen (4 recaptures), and 62 cock (6 recaptures, one with a failed radio) greater prairie chickens (GPC). In addition, we trapped 3 GPC x sharp-tailed grouse (STG) hybrids, 6 STG cocks (1 recapture) and 1 STG hen.

All of the 2013 GPC hens and 24 cocks were radio-marked. A total of 3 birds (1.8%), (all cocks) died as result of our trapping activities and all were killed by raptors while in the traps or along the leads.

Of interest is that on the Smith booming ground where in 2012 we caught 16 hens, we caught none in 2013. This spring all of the captured bird's legs were examined for cactus spines and scars. None were found. The fact that cactus spines were only observed during the summer and autumn would suggest that the grassland areas used by these birds was different (drier) than that used in winter and early spring. This corroborates the telemetry data collected to date.

### MOVEMENTS

One of the adult radio-marked hens that was located 35 miles northeast of her nesting area this winter returned to her nesting area in mid-April 2013. However she was killed in May probably during egg-laying and was fed upon by a raptor. She was at least 2.5 years old. A second hen located 12 miles north of her summer area this winter also returned to her 2012 nesting area in mid-April and

nested. Frustrating was the fact that nine other radioed hens that were not located during our search flights out to 35 miles also showed up in their 2012 nesting areas in mid-April. We have no idea at this time where they were or how far they went but they were obviously alive and their radios working. It should be obvious that a number of these radioed birds are moving over 35 miles from their summer/early autumn areas and some are apparently migrating. Historically, researchers including Hamerstrom have indicated that in the past, some GPC were migratory and that the hens were more likely to migrate than cocks. This is exactly what we have seen so far in Nebraska.

### **NESTING/BROOD REARING**

We have located 48 nests in Nebraska so far this breeding season and it is possible because of the late breeding season that we may find a few more. Several radioed hens were still incubating in mid-July and their nests based on egg measurements are estimated to hatch in late July. We are currently following 8 radioed hens with 2-4 week old chicks.

In addition, we are photographing the nest areas to eventually determine height and habitat type(s) grass, forbs, shrubs or sedges. We also have approximately 40 control sites in Nebraska and these are surveyed once a week for insects and cover type and height of cover.

### **INSECTS**

The habitats of radioed hens are being surveyed for the presence of insects by circling them and sweeping with insect nets to determine insect numbers and biomass. Rob Dugenske a recent graduate of UW-Madison in Wildlife Ecology and former Wisconsin resident is going to work with us in Nebraska this summer on the insect aspect of GPC ecology. Rob is also going to work on developing a method to assay GPC droppings especially those of chicks using DNA analysis so we can identify what they have been eating relative to age, habitat and availability. He plans to convert the basement at the Nebraska house into a temporary lab for picking bugs and analyzing droppings.

Zach Crete of Crete Biological Services LLC, is currently picking the invertebrates collected in Nebraska in 2012 and should be done by the end of July. Insects were also collected in Minnesota between 2010 – 2013 which will be analyzed by Rob Dugenske. This will provide us with a unique comparison of insect types & numbers available to broods in Nebraska and Minnesota via Syrowitz (2013).

Note that radioed hens fledged more chicks in Nebraska in 2012 than radioed hens in Minnesota. We suspect that this difference may relate to differences in insect numbers and types as the Minnesota habitat is a checkerboard of grassland and agricultural land primarily soybeans, corn, wheat and beets. The Nebraska study area consists of over 75 percent grassland cover with some trees and scattered center pivot fields of primarily corn.

## **PESTICIDES**

This summer when we trap additional young of the year to radio-mark and adults to change radios we will take blood samples, store them and hopefully have them assayed for pesticides and compare northwestern Minnesota where chemicals are heavily used versus Nebraska where other than herbicides, insect pesticides are not used as much.

John Toepfer, Ph.D.