

**EFFECTS OF SEASON-LONG AND PRESCRIBED ROTATIONAL GRAZING
ON GREATER SAGE-GROUSE HABITAT AND POPULATIONS ON PAIRED STUDY SITES
IN RICH COUNTY, UTAH**

July 2015

Report Update

Introduction

Purpose:

The purpose of this research is to scientifically document greater sage-grouse individual and population responses to habitat and vegetation differences that may occur under prescribed grazing and season-long grazing practices on paired study sites in Rich County, Utah. Fieldwork began in 2012 and will continue through 2015.

2015 Update

Nesting:

2015 has been a very low year for detected nests within the project area in Rich County. Despite ground telemetry efforts and a telemetry flight in mid-May we were only able to verify 9 nests in Deseret and 13 nests in Three Creeks. These low numbers are likely a combination of bird movements, mortalities, and the unusual weather that Rich County experienced this year. Since February we have located 11 hens that have left the study area. Another 19 hens were detected as mortalities. This is the highest number of mortalities that have been recorded for the project during this period. Causes of mortality are often difficult to determine as carcasses are typically scavenged by different predator species before the cause is verified. Many of the hens that died were older individuals but we will be analyzing our predator data to see if there might be a correlation in higher predator densities during this time. Apparent nest success for Deseret was calculated at 44% with 4 of the 9 nests successfully hatching. This is a decrease from 2014 when apparent nest success was estimated at 54%. In Three Creeks 6 of the 13 nests were successful for an apparent nest success of 46%. This was an increase compared to the estimated 29% apparent nest success in 2014.

Broods:

We have been tracking 4 broods in Deseret and 6 broods in Three Creeks despite the very low observed nest survival this year. Of the 4 broods in Deseret we are still tracking 3 of them. In Three Creeks we are still tracking 4 of the broods. We observed our earliest brood in Three Creeks moving down into a wet meadow on private land within Randolph. Two days later the hen was detected as a mortality with the brood being lost at that point. Despite some of these early losses we have had 2 broods on Three Creeks that have reached 50 days in age and the final brood count was performed. The first hen had a single chick surviving to 50 days with the second hen successfully raising a brood of 8 chicks! This is the largest verified marked brood since the study began in 2012. The first final brood counts in Deseret will begin 11 July.

Bird Movements:

Rich County continued to show just how roving some of the hens are within the Rich County population. The flight in mid-May detected one of our marked birds within 2 km of the Idaho border. While we did observe a larger movement in 2013 when a hen travelled nearly 70 km, this hen was detected a distance of nearly 40 km from her original capture location. So far we have observed 11 hens that have left the study area. Unfortunately each of these emigrating hens lowers our sample size within the study.

Mortalities:

To date for 2015 we've detected 19 mortalities with 6 of those occurring in May. As aforementioned within the nesting section of this report we are planning on completing our analysis of predator densities and potential correlations. The unexpected high mortality this spring combined with emigration events resulted in low overall sample size numbers of hens in each of the study areas.

Future Study:

We are currently working to help start another research project in Rich County that will be conducted over the next few years. This research project will use location data from GPS tagged sage-grouse in conjunction with location data from GPS tagged cattle. This unique study will allow a future graduate project to analyze and map sage-grouse/cattle interactions across a working landscape. In an effort to jumpstart the project we are deploying GPS PTT units on sage-grouse hens within pastures on this year's grazing rotation schedule within Deseret. We have been assisted by fellow graduate students and researchers from USU in these initial efforts. To date we have deployed 3 units and have successfully started collecting location data from each. Currently 7 units still need to be deployed with trapping efforts planned for the coming weeks.

As always, we greatly appreciate the help and support that we have received from the many agencies and landowners that have been involved in making this research possible and helping further our knowledge of greater sage-grouse conservation. Without the collaborative efforts and support of so many this project would not be possible. Thank you.

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