

Seasonal Summary Report- September 7, 2016

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Project Title: Population Dynamics and Seasonal Movements of Translocated and Resident Greater Sage-Grouse of the Sheeprock Sage-grouse Management Area (SGMA)

Purpose and Background:

For the past 9 years, the greater sage-grouse (*Centrocercous urophasianus*; sage-grouse) population in the Sheeprock SGMA has been declining, with a low of 23 males being counted on leks in 2015. This research will evaluate the use of translocations as a tool for the conservation of declining sage-grouse populations and provide managers with information to guide implementation of management actions to sustain the population over the long-term.

Survival:

To date, we have recorded 12 mortalities; 1 resident male and 11 translocated birds (2 males, 9 females; Table 1). This July and August we recorded 7 of the mortalities, 5 alone in August. The mortalities included one translocated female that had been fitted with the GPS GSM backpack, one GPS PTT translocated female, 4 necklace-style VHF translocated females, and one GPS resident male. Three were recovered in the Government lek area, 3 in the McIntyre area, and 1 in Benmore.

Nesting:

We recorded 5 nest initiations this season in the McIntyre area from 4 of our translocated females and 1 resident female, 3 (60%) of which hatched successfully. Three of the translocated females that initiated were from Parker Mountain, and 1 female was from Park Valley. The resident female hatched on May 24th with 5 chicks, one of the translocated hens hatched on May 30th with 5 chicks as well in an area behind the McIntyre lek. The last successful nest hatched June 10th with 6 chicks.

The nest initiation rate for translocated females we monitored ($n = 23$) in through the nesting season was 17%. The nest initiation rate for resident females we monitored ($n = 3$) in through nesting season was 33%. The low nest initiation rates for translocated females was likely attributed to the effects of the translocation and the birds unfamiliarity with the area evidenced by the wide spread movements throughout the season.

Brooding:

These 3 broods—1 resident and 2 translocated females—all reached the 50-day brood survey, and the resident female's brood has successfully reached the 50-day survey with one chick. The other two broods were translocated; one ended successfully with 3 chicks, and the other lost the last chick within the last two weeks of the 50-day period. These nests and broods were all located in the McIntyre lek area. Several resident broods were being regularly sighted as well around all three lekking areas—as well as Little Valley— throughout the month of July.

Movement Notes:

After the initial translocations, the grouse made large movements around the Sheeprocks area in search of suitable habitat. In mid to late April, the translocated birds began to localize around the three principal lek areas: McIntyre, Benmore, and Government. One translocated female stayed in the Little Valley area. Some translocated females stay close to a certain lek for several weeks and then move farther away for a period of time before they could be relocated. On McIntyre, most of the sage-grouse—male and female—moved to one ridgetop in particular adjacent to the lek. The sage-grouse in the Government Creek area used a burned and treated juniper areas south of the lek. In Benmore, the sage-grouse used sagebrush areas west of the Benmore pastures, and one of the resident males travelled to agricultural areas north of the lek. One resident female detected near Delta during an early May telemetry flight has moved and we have not been able to relocate her as of this report date. During the last week of July, we recorded 26 sage-grouse in a flock in the burned areas near the Government Creek lek. We also recorded 17 incidental resident sage-grouse females with broods this year.

Accountability of Translocated Radio-Marked Birds

Of the 40 translocated birds, we have accounted for 29. Four birds—2 males and 2 females—were released unmarked, 1 VHF male had a radio collar fall off, and 2 GPS birds with GSM backpacks have not transmitted data for the male and female sage-grouse on which they were mounted. One male grouse and three female grouse have not been located since the translocations in March.

Landowners:

We thank the landowners who allowed us access to their properties to capture birds. We also are indebted to the dozens of volunteers who have helped with the translocation effort.

Other Notes: The field season was suspended on July 30th, but we will be monitoring the GPS birds by satellite, and the VHF birds will be monitored bi-weekly throughout the year. We are already preparing VHF radios and will be ordering 10 new GPS transmitters for the next year's translocation. In all we will plan to deploy these new transmitters and redeploy the recovered transmitters to increase our sample size to 20 GPS radio-marked birds. This will include a sub-sample of at least 5 resident birds.

Table 1

Sex	Radio Type	# of Individuals	Mortalities	Nests Initiated	First Initiation	Last Initiation	Re-nest Attempts	Nests Hatched	First Hatch	Last Hatch	Successful Broods	Failed Broods
Resident Male	VHF	0	0									
Resident Male	GPS	2	1									
Translocated Male	VHF	6	1									
Translocated Male	GPS	2	1									
Translocated male	unmarked	2										
Resident Female	VHF	3	0	0	4/21/2016	5/27/2016	0	0	5/24/2016	6/10/2016	0	0
Resident Female	GPS	2	0	1			0	1			1	0
Translocated Female	VHF	20	5	3			0	2			1	0
Translocated Female	GPS	8	4	1			0	0			0	1
Translocated Female	unmarked	2										
Total		47	12	5			0	3			2	1