Sheeprock Sage-grouse Management Area Translocation Field Update

Seasonal Summary Report- October 8, 2019

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

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Purpose

In recent years, 10 of the 11 Utah SGMAs have shown an upward trend in the numbers of males counted on leks. The Sheeprock SGMA has been the notable the exception. This SGMA is located in central Utah and is comprised of 611,129 acres in Tooele and Juab Counties. Key threats to sage-grouse identified by the West Desert Adaptive Resources Management Local Working Group (WDARM) include wildfire, invasive species (annual grasses and forbs), potential loss of riparian or mesic areas, predation, habitat fragmentation, dispersed recreation, and conifer encroachment. To mitigate these threats, WDARM has implemented an aggressive habitat and predation management effort that has been augmented by greater sage-grouse (*Centrocercus urophasianus*) translocations. We are studying how translocated and resident sage-grouse respond to habitat and predation management. To do this we are evaluating if habitat selection and vital rates differ for translocated and resident sage-grouse. We are also studying off-highway vehicle (OHV) use patterns of recreationists in the Sheeprock to learn if current use is impacting sage-grouse habitat-use and are also surveying OHV users to determine their specific recreation needs.

Technicians and Training

This 2019 field season, four technicians were hired: Steven Hall (Utah), Tony Keith (Texas), Jennifer Nichols (Utah), and Celeste Silling (New Mexico). In addition, Trevon Strange (New York), a Utah State University Extension Intern, assisted in conducting field work as part of the extension internship during June. The technicians received bird handling, telemetry, vegetation monitoring, OHV and 4WD vehicle safety training. All technicians have finished their seasonal work at the end of July and have returned home.

Translocations & Captures

We continued with translocations this year, making this the fourth year of the Sheeprock translocations. Due to access issues caused by the large amount of snow we had this year, the translocations were delayed significantly. We performed the Parker Mountain translocations on April 24th and 5th, attempted to capture birds in Park Valley on April 29th, with no success, then captured one more night in Parker Mountain on May 2nd. We captured 26 grouse, 16 females and 10 males for the 2019 translocations, 14 fewer than our goal of 40 birds (30 females and 10 males). This is the first year of the four translocation years that we have not been able to capture and translocate 40 grouse.

Table 1. Translocation dates, locations, and total males and females caught per night, Sheeprock Sage-Grouse Management Area, UT.

Translocation Location	Date	Number of Males	Number of Females
Parker Mountain	4/24/2019	9	6
Parker Mountain	4/25/2019	0	6
Park Valley	4/29/2019	0	0
Parker Mountain	5/2/2019	1	4
	Total per M/F	**10**	**16**
		Total Translocated	**26**

Resident captures yielded 10 Sheeprock birds: two males and eight females. One male, caught on the Fredrickson lek had a leg band upon capture but no transmitter. In looking up his leg band, he was a 2018 translocated male whose collar had fallen off after our monitoring season last year.

We also captured two birds on Tintic leks for the Bureau of Land Management (BLM), a male on Copperopolis and a female on Furner Valley.

Survival

There have been thirty-one confirmed mortalities in 2019 (Figure 1). One mortality was from a female marked in 2016. Six mortalities were from birds marked in 2017: 5 translocated females and 1 translocated male. Fifteen were confirmed mortalities from our birds marked in 2018: 7 translocated females, 2 resident females, and 6 translocated males. Nine mortalities were confirmed from individuals marked in 2019: five from translocated females, 2 from resident females, and two from translocated males. A table of this information is provided below (Table 2).

Table 2. A breakdown of the confirmed mortalities during 2019 by sex, translocated or resident, and the year marked in the project, Sheeprock Sage-Grouse Management Area, Utah, 2019.

Year Marked	Number of Mortalities	Males vs Females	Translocated vs Resident
2016	1	1 Female	1 Res
2017	6	5 Female, 1 Male	6 Trans
2018	15	9 Female, 6 Male	13 Trans, 2 Res
2019	9	7 Female, 2 Male	7 Trans, 2 Res
Total Mortalities	**31**		

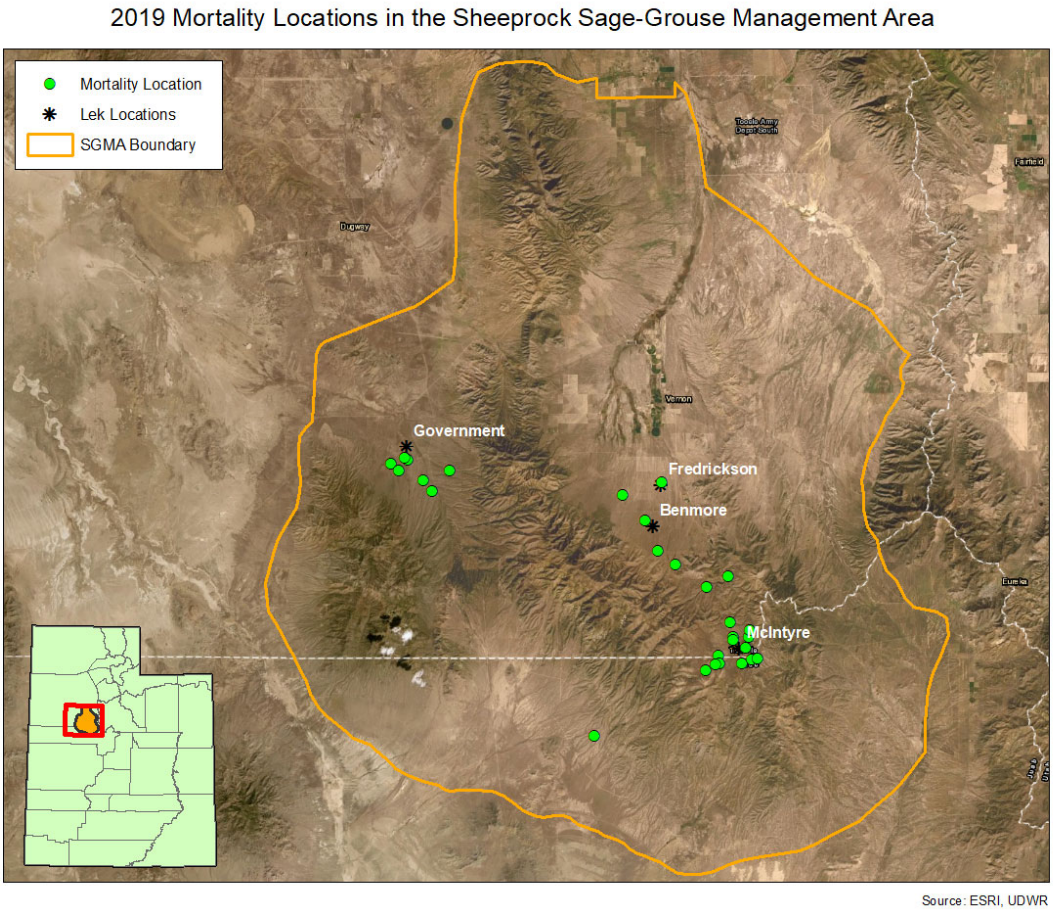

Figure 1. Locations of greater sage-grouse mortalities, Sheeprock Sage-Grouse Management Area, Utah, 2019.

Radio-Marked Grouse Movements

The movements for the 2019 translocated birds have been relatively localized as opposed to previous years. Three of the translocated birds, however, made larger movements; one flew to Little Sahara, one flew into the West Desert, and another flew towards Tooele. Below is a map showing the movements of the individual that travelled in the direction of Tooele (Figure 2).

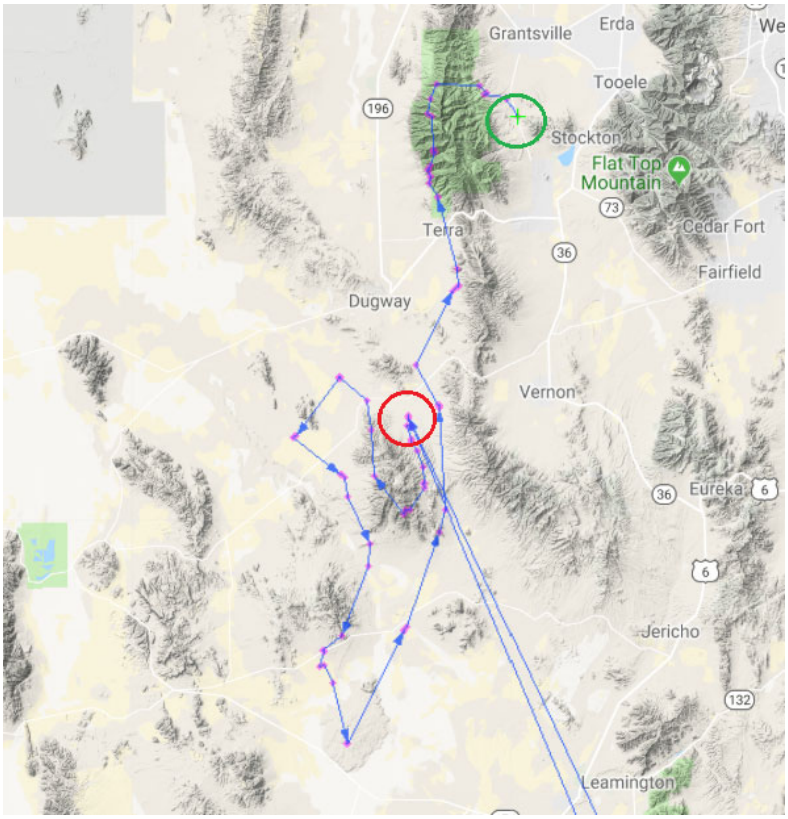

Figure 2. Flight path movements of a female translocated from Parker Mountain to the Sheeprock Sage-Grouse Management Area (SGMA), Utah, 2019. The red circle indicates where the female was released in the SGMA, and the green circle indicates the last location.

Nesting and Brooding

We had twenty-four confirmed nests this season. Seven of the 24 nests failed due to nest depredation; this was for one female marked in 2017, three 2018-marked females and two 2019-marked females, one of which was a translocated individual. The majority of our nesting females this year initiated between April 25 and May 9. Our 2019 nest information is located in Table 2. Nest and brooding locations are included in Figures 3-5 below.

Table 2. Nest initiations for translocated and resident greater sage-grouse, by age in 2019, Sheeprock Sage-Grouse Management Area, Utah, 2019.

Year Marked	Number of Females Nesting	Adults vs Yearlings	Translocated vs Resident
2016	2	2 Adults	2 Res
2017	4	4 Adults	4 Trans
2018	8	8 Adults	7 Trans, 1 Res
2019	10	4 Adults, 6 Yearlings	5 Trans, 5 Res

We had seventeen successful nests that yielded at least 82 chicks at initial nest hatch. We have included maps to show brooding and nesting locations for the seventeen brooding females as well as the seven failed nests. The end of the brooding season yielded 5 broods and 12 chicks.

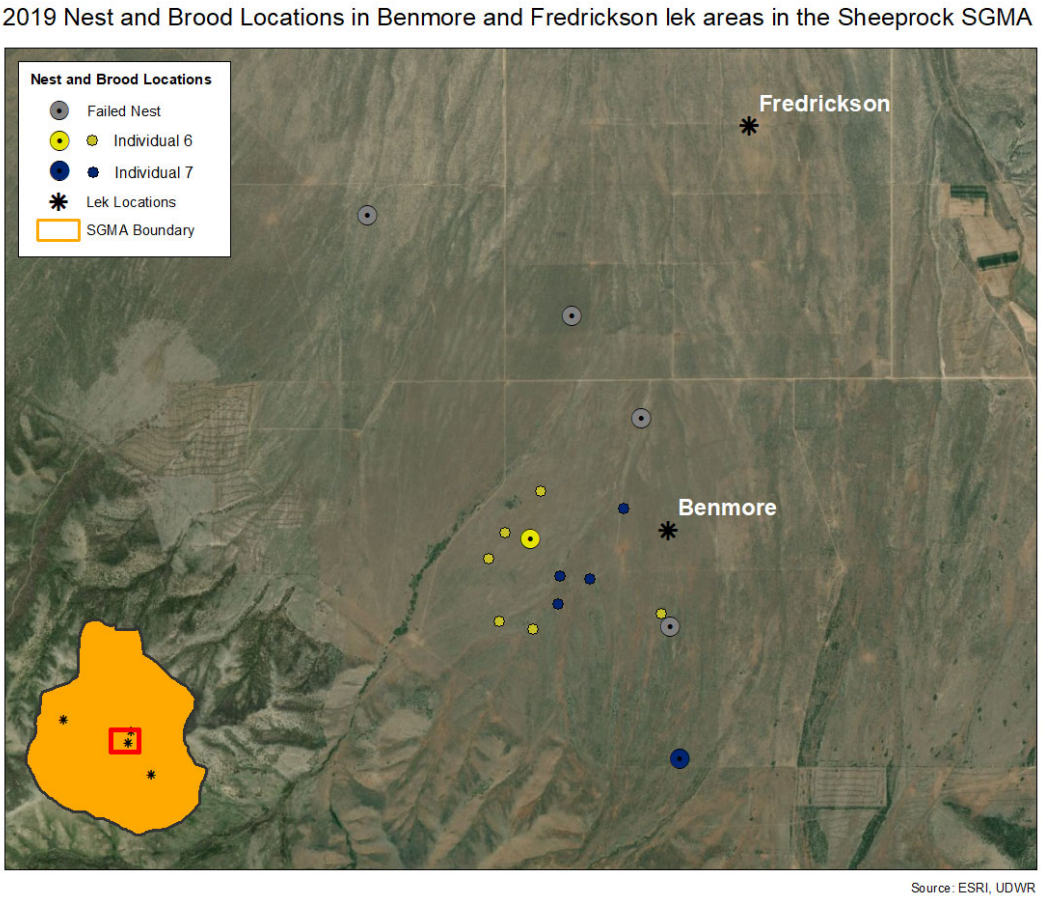

Figure 3. Nesting and brooding locations for marked females located within the Benmore and Fredrickson lek areas, Sheeprock Sage-Grouse Management Area, Utah, 2019. Each nest and brood point of the same color correspond to the same female.

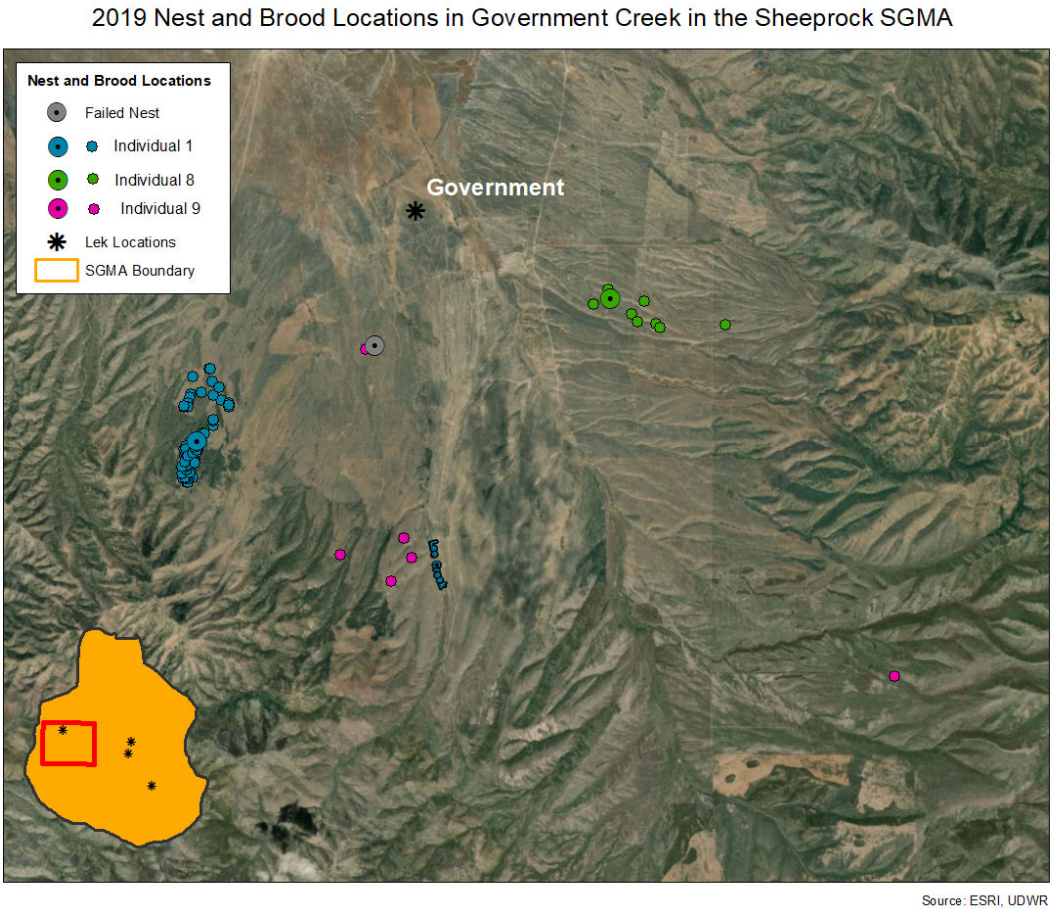

Figure 4. Nesting and brooding locations for marked females located within the Government Creek lek area, Sheeprock Sage-Grouse Management Area, Utah, 2019. Each nest and brood point of the same color correspond to the same female.

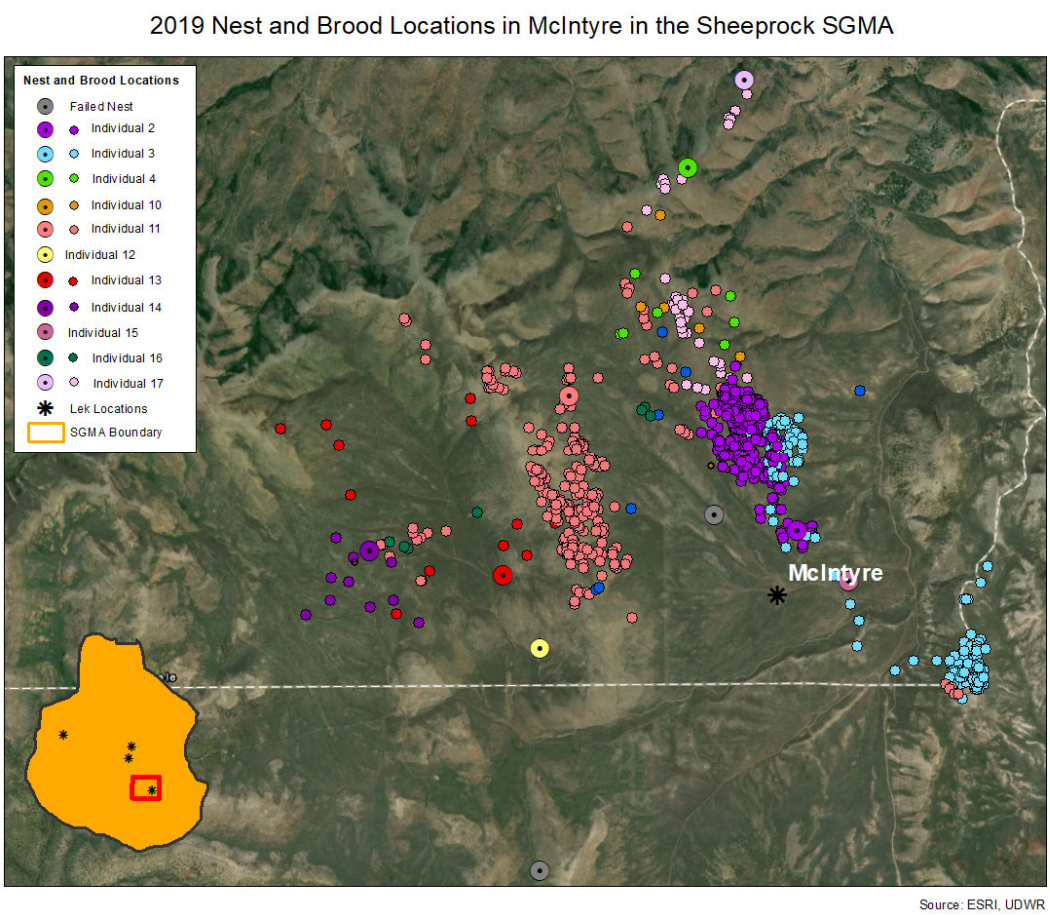

Figure 5. Nesting and brooding locations for marked females located within the McIntyre lek area, Sheeprock Sage-Grouse Management Area, Utah, 2019. Each nest and brood point of the same color correspond to the same female.

Landowners

We thank the landowners who allow us access to their properties to capture and monitor birds. We also are extremely indebted to the dozens of volunteers who have helped with the translocation effort. We particularly thank Jason Robinson and Avery Cook, UDWR, for coordinating the effort through the public review process and the logistics required to complete the translocations. We also thank the Utah Public Lands Policy Coordination Office, the BLM, the Yamaha Corporation, the West Box Elder CRM, the Parker Mountain and West Desert Adaptive Resources Management Local Working Groups, the Jack H. Berryman Institute, the Quinney Professorship for Wildlife Conflict Management, the UDWR, the Forest Service and the US Geological Service for funding, encouragement and project support.