Greater Sage-grouse Responses to Pinyon - Juniper Removal

West Box Elder Sage-Grouse Field Report – June 2017

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Background and Purpose

We are collecting greater sage-grouse habitat-use, seasonal movement, and vital rate data relative pinyon-juniper removal projects within the Park Valley area of the Box Elder Sage-grouse Management Area (SGMA). Currently, we have deployed 18 global positioning system (GPS) rump-mounted transmitters on female sage-grouse and 2 more to be deployed by end of the field season. One of the GPS transmitters requires the female wearing it to come within range of a cell phone tower to download the location data. With the other 17 GPS transmitters, data downloads are being gathered every 4 hours on a 24 hour cycle throughout the study period.

The transmitters have been deployed on females near juniper treatment areas. The location data collected from transmitters will help us refine conifer removal strategies and placement, and also allow us to develop a tool for managers to use to optimize sage-grouse response to management actions within the SGMA. This larger data set will allow us to research and observe more closely sage-grouse utilization of treatment areas in reflection to overall population fitness at the landscape level. Also, a sample size of +/- 15 very high frequency (VHF) necklace-style radio-collars will be maintained for sample size robustness across the study area and to determine if vital rates may differ by type of radio transmitter. Both units weigh about as much as two silver dollars – 22 grams

Study Area

The study area is part of the Raft River subunit in the Box Elder Sage-grouse Management Area defined in the Utah Plan (2013). The Raft River subunit is located in the northwestern portion of Utah. Geographically, the core of the study area is flanked by the Raft River Range Mountains to the north, the Grouse Creek and Pilot Mountains to the west, by the Great Salt Lake to the southeast and areas of salt flats to the south. Approximately 440,750 ha are encompassed within the study area. Land ownership within the Raft River subunit is a mixture of public and private lands consisting of: Bureau of Land Management, U.S. Forest Service, Utah School and Institutional Trust Lands Administration and private.

Nesting and Brooding

To date, 20 females (both GPS and VHF birds) have initiated nests. Of those 20 nest initiations, 9 were predated and 1 was abandoned. Currently there are no females incubating nest. The last nesting female hatched successfully this past week in the Black Hills, and she was a re-nest! This was our only re-nest this year (last year there were two), but still very cool to document with re-nest being extremely rare in West Box Elder. As like was done with nest monitoring, to mitigate the potential for ravens using our activities to key in on brooding females, we are being careful not to spend extended periods observing brooding females. This caution is warranted because we have observed ravens following us on several different occasions this season while relocating females; whether they were actual profiling us or just being curious- we are playing it safe. In addition, when compared to last season, the raven frequency around nest locations, and now brooding areas, is noticeably higher.

Currently, we have 7 brooding females (3 GPS and 4 VHF). Ten successfully hatched, but 2 were predated and 1 VHF female's collar is malfunctioning and impeding us from locating her. I suspect that with summer now in full swing, brooding females continue moving towards wet meadow and riparian areas across the study area. Fortunately, this season there are ample wet areas for females to utilize while rearing chicks and I have notice this season females are moving smaller distances when compared to last season.

Mortality

For this field season, 6 GPS and 3 VHF females have been killed. All 3 VHF mortalities and 4 GPS mortalities were females that we collared in April 2017. Of the mortalities, 1 female showed signs of avian predation and 4 mammalian predation. Predation causes remain unknown for the other 4 females. I suspect a badger could have killed one of the last 2 females; we have notice an increase in badger activity for this field season.

Vegatation Surveys

Nest and brood vegetation surveys are underway. To date, we are keeping current on the vegetation surveys. Across the study area, the flush of vegetation growth is high for the 2017 field season and it will be interesting to see how this affects overall nest and brood success.

Grouse Movements

Birds are continuing to spread-out over the landscape now that the lekking season has concluded and females are moving towards wetter areas with broods. At the end of last week, 1 GPS female was brooding in the Muddy Creek area north of Meadow Springs. One VHF and 2 GPS females are brooding in Warm Springs in and around, both the new and old treatments. One VHF female is brooding on the west side of the Black Hills. East of Park Valley, 2 VHF females

are brooding. Only 2 radio-marked females have not been located for the 2017 field season. I will continue looking through the field season in order to determine actual fate of the birds.

West Box Elder Landowners

We are very appreciative for the amount of cooperation, interest and trust that has been given to us for the 2017 field season; be reassured, it is not taken lightly. We are aware that we are guests and the technicians are reminded frequently of this privilege we have. Furthermore, we have enjoyed getting to know all the landowners within my study area and learning about their knowledge of the landscape, both past and present.

Without hesitation, please contact us if you want to know anything about what we are observing on your property, or if you just have general questions. If we do not have the answer, we will do our best to find it out for you.