

Greater Sage-grouse Responses to Pinyon - Juniper Removal

West Box Elder Sage-Grouse Field Report – May 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 with 2 more to be deployed by early May. 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 that was based on the Box Elder Management Area outlined in the 2002 state plan, and is embedded 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.

Lekking and Breeding Status

Lekking looks to be concluded for the 2017 mating season. Throughout May, some yearling and juvenile males were still hanging around leks, but radio-marked adults have now dispersed from main lekking areas to summer locations.

Trapping

We have concluded trapping for the 2017 field season; however, any GPS transmitters recovered during the field season, will be refurbished and redeployed as quickly as possible to ensure we are maximizing their capabilities relative to their cost.

Nesting and Brooding

To date, 19 females (both GPS and VHF birds) have initiated nests. Of those 19 nest initiations, 9 were predated and 1 was abandoned. Currently there is 2 females still incubating nest and they have picked good nesting locations, so fingers crossed they will make it. We are hoping for a re-nest like last year, but with re-nests being rare in Box Elder, we are not holding our breath. As like was done last season, to mitigate the potential for ravens using our activities to key in on nesting sage-grouse, we are being careful not to spend extended periods observing nesting 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 is noticeably higher. To give an idea of raven numbers, below this section I have included a picture of ravens I took in the juniper area on the west side of the new Pinyon-Juniper treatment in Warm Springs. I counted over 100 ravens on May 31 while going to perform a brood vegetation survey for a brooding female in close proximity.

Currently, we have 7 brooding females (3 GPS and 4 VHF) that successfully hatched and none have been predated so far. I suspect with warming temperatures, brooding females will start moving towards wet meadow and riparian areas across the study area. Fortunately, this season there is ample wet areas for females to utilize while rearing chicks. Something noteworthy: one of the successful females in Warm Spring nested in an older juniper treatment south of Rosette. Very cool to document this! I have include a picture below of her nest site under an old juniper tree.



Mortality

For this field season, 5 GPS and 2 VHF females have been killed. Both VHF mortalities were females that we collared in April 2017. Of the mortalities, 1 female showed to avian predation signs and 2 mammalian. Predation causes remain unknown for the other 4 females.

Grouse Movements

Birds are continuing to spread-out over the landscape now that the lekking season has concluded and females are nesting and brooding. At the end of last week, 1 GPS female is brooding in the Muddy Creek area of north Meadow Springs. Two VHF and 2 GPS females are brooding in Warm Springs in and around both the new and old treatments. East of Park Valley, 2 VHF females are brooding and 2 GPS females are still incubating nests in the Chicken Ridge area.

Only 2 radio-marked females have not been located for the 2017 season. I suspect a collar malfunction for one and possibly the other could still be buried under snow on top of the Raft Rivers, thus preventing radio transmission. I will continue looking through the field season though in order to determine actual fate of the bird.

West Box Elder Landowners

We are very appreciative for the amount of cooperation, interest and trust that has been given to my technicians and I for the 2017 field season; be reassured, it is not taken lightly. We are aware that we are guests and my technicians are reminded frequently of this privilege we have. Furthermore, we have really enjoyed getting to know all the different 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.