

West Box Elder Sage-Grouse 2016 Field Season Summary Report

Greater Sage-grouse Responses to Pinyon - Juniper Removal in the Box Elder Sage-grouse Management Area (SGMA)

Background and Purpose

I am researching and gathering habitat use and movement data in regards to the past and present pinyon-juniper removal projects within the Park Valley area of the Box Elder Sage-grouse SGMA. Currently, I have 13 global positioning system (GPS) transmitters deployed and 3 more mortality recovered transmitters will hopefully be redeployed by fall, making a total of 16. One of the GPS transmitters requires the bird wearing it to come within range of a cell phone tower to download the location data. The transmitters have been deployed in close proximity to 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 metric to measure and mitigate greater sage-grouse response to landscape features and changes within the SGMA.

With the other 13 GPS transmitters, data downloads are being gathered every 4 hours on a 24 hour cycle throughout the study period. 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 +/- 20 very high frequency (VHF) collars will be maintained for sample size robustness across the study area.

Trapping

All new GPS transmitters were deployed during the 2016 field season. And though the 2016 field season has concluded, we are planning on trapping into the fall to redeploy the 3 mortality recovered transmitters; however, we will wait until the weather cools and females start to congregate again at lower elevations to maximize trapping efforts.

All GPS transmitters recovered during the field season were refurbished and either redeployed or will be redeployed as quickly as possible to ensure we are maximizing their capabilities relative to their cost. If possible, the 3 remaining mortality recovered GPS transmitters will be redeployed in close proximity to new and existing juniper removal areas in hopes of documenting bird movements within those areas. Recently, permission was given to trap the Morris's property north of Kelton. Though the field season has concluded, I will continue trapping to deploy or re-deploy any GPS transmitters and augment the existing VHF radio-marked birds' sample size.

Nesting and Brooding

For the 2016 field season, 19 of the 29 females monitored (6 GPS and 13 VHF birds) initiated nests (66%). Ten females out of 19 females hatched successfully (52%). Six nests were predated across the study area. The predator could not be determined, but my suspicion is ravens played a part in 3 and a mammalian predator in 1. In all 6 cases, none of the females were killed.

Of the 10 females with broods (5 GPS and 5 VHF females), 5 were successful at the 50 day flush (2 GPS and 3 VHF), for an overall brood success of 50%. Of the 2 VHF females that re-initiated nests, the Dry Basin female was successful at the 50 day flush! This was really cool to document due to nest re-initiations being uncommon throughout the Box Elder SGMA.

Mortality

For the 2016 field season, 4 GPS and 4 VHF females were killed (21% of the radio-marked birds), with GPS transmitters recovered in all cases and VHF radio-collars recovered in 3 out of 4 cases. Of the observed mortalities, 3 females showed avian predation signs and 1 showed mammalian predation signs. Predation causes remain unknown for the other 4.

Grouse Movements

Throughout July and early August, birds were really spread-out over the landscape, with brooding females moving into wet meadow areas and higher/cooler summer pastures. By the end of July, all brooding females were in close proximity to watering sources. During July, the VHF female that was brooding on top of the Black Hills ended up moving over to Lynn Valley just south of the Reservoir; this area was significantly wetter towards the end of the summer than her initial brooding sites. The GPS female that hatched south of the Pipeline moved her brood around 23 km in a 4 to 5 day period to the wet meadows and pastures south of Park Valley! The week she moved her chicks north was hot and it was exciting to capture her movement data and see the path she choose to get her brood their summer site. Unfortunately she was not successful, but that kind of movement data could not have been captured without a GPS transmitter.

All radio-marked females were located. One of the VHF females that was missing all season was detected on June 2nd in a remote basin on top of the Grouse Creeks. I determined that she was indeed brooding, but she was killed in late July.

Vegetation Surveys

All mandatory nest vegetation and brood vegetation surveys were concluded for the 2016 field season by August 1. I am currently adding this information to the habitat database for subsequent analysis.

Plans for Next Year

We plan on deploying additional GPS and VHF transmitter next year. We want a sample size of 20 GPS units and 20-30 VHF.

West Box Elder Landowners

I must say that I am very appreciative for the amount cooperation, interest and trust that has been given to my technicians and I during the 2016 field season; be reassured, it was not taken lightly. I am aware that we were guests and my technicians were reminded frequently of this privilege we have. Furthermore, I 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 me if you want to know anything about what we observed for the 2016 field season on your property, or if you just have general questions. If I do not have the answer, I will do my best to find it out for you.

Best,

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