

Greater Sage-grouse Responses to Pinyon - Juniper Removal

West Box Elder Sage-Grouse Field Report – June 2018 Update

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Background and Purpose

We are documenting greater sage-grouse habitat-use, seasonal movement, and vital rate data relative to pinyon-juniper (conifer) removal projects within the Park Valley area of the Box Elder Sage-grouse Management Area (SGMA). The purpose of the research is to develop a tool that can be used to better predict sage-grouse use and survival relative to the placement of removal projects. We hope that this tool will be used as part of the Utah Department of Natural Resources Compensatory Mitigation Program to enhance mitigation credits accrual for participating landowners. This is the third of four field seasons.

Currently, we have deployed 10 global positioning system (GPS) rump-mounted transmitters on female sage-grouse. We also have 5 GPS marked females in the West Grouse Creek area that we will monitor remotely. With the GPS transmitters, data downloads are being gathered every 4 hours on a 24 hour cycle throughout the study period. Most of the GPS transmitters are additionally equipped with a small VHF antenna to aid in recovery of transmitters in the advent they default or left upside down after a mortality occurs.

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. Additionally, we have deployed 15 very high frequency (VHF) necklace-style radio-collars across the study area and to determine if vital rates may differ by type of radio transmitter.

New for the 2018 field season, we are attempting to mark up to 55 sage-grouse chicks with small VHF backpacks. These VHF backpacks will be sutured onto the chick's backs and will remain until around the 70 day mark. This will allow us to track the complete life cycle of sage-grouse within the West Box Elder SGMA and obtain the finest scale data possible to observe how individual sage-grouse chicks are responding to pinyon-juniper treatments across the SGMA. We will also mark chicks in the 2019 field season.

June 2018 Activity

In June, we redeployed 2 GPS transmitters and 2 VHF collars. We currently are refurbishing 2 more GPS transmitters that were recovered the last week of June and they be redeployed over the next couple of weeks. All functional 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.

To date, 14 females (both GPS and VHF birds) have initiated nests. Of those 14 nest initiations, 7 were predated and 1 was abandoned. The last 2 nesting females hatched in late June. One was a re-nest and she had 6 chicks and her first predated nest had 9 eggs. This was our only re-nest this season, but still very cool to document with re-nests being extremely rare in the West Box Elder SGMA. We have documented at least one re-nest each over the past three field season.

Currently, we have 5 brooding females (3 VHF and 2 GPS). One GPS female lost her brood in the Rudy Pipeline reclamation area within a week of hatching. Three of the brooding females are on top of the Grouse Creeks by Muddy Creek pass and 2 are up Dunn Canyon north of Park Valley.

For this field season, there have been 6 GPS and 7 VHF female mortalities. This is a 44% increase from last year's mortalities at this point. Five of the GPS females showed signs of mammalian predation and one is undetermined. Four of the VHF mortalities showed signs of avian predation, 2 mammalian predation and 1 was undetermined.

With having decreased wet areas and runoff for the 2018 field season, birds have really spread-out over the landscape in search of quality habitat and sufficient green groceries to meet their nutritional requirements for nesting and brooding. Currently, all marked birds are either occupying higher elevation habitat or lower irrigated agriculture fields; no birds are utilizing any dryer transitional areas within the SGMA. Of the females we radio-marked, we have located all of them.

We currently have radio-marked 5 broods with small VHF backpacks, for a total 25 individual chicks. Out of the 25 marked chicks, 20 are still alive. All broods have been marked for the 2018 field season.

We are very appreciative for the cooperation, interest and trust that has been given us in the 2018 field season; be reassured, it is not taken lightly. We are aware that we are guests and our technicians are reminded frequently of the privilege we have. Furthermore, we have really enjoyed getting to know all the different landowners within our 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.