STRAWBERRY VALLEY LOCAL WORKING GROUP

Date: **April 2, 2020**
Place: Virtual meeting over WebEx
Members Present: Ryan Howell (BYU), Jared Reese (BLM), Joe Moore (USFWS), Terri Pope (UDWR), Curtis Miles (Moon Lake Electric), Cjay Buttars (USD-Wildlife Services), Richard Mingo (Mitigation Commission), Stephen Smith (Wasatch County), Mellissa Wood (BLM), Lorien Belton (USU Extension, facilitator)

Information Presented/Discussion Highlights

Raven planning

Joe Moore explained to the group that the migratory bird office in D.C. has initiated a west-wide common raven management strategy. They are currently in the early phase of trying to understand the scope of the problem. There is a form online (Joe posted the link to the chat section of the WebEx meeting; it has also been sent out over email by Lorien.) Information on conflicts, quantification of impacts, where any conflicts occurred, any monitoring, and any measures of effectiveness of control efforts are among the topics the team is interested in hearing about. The comment deadline has recently been extended to April 30th. The link to the form/survey is https://djcase.com/raven.

The bird damage management conference sessions are online, if anyone is interested in watching them. There was a full day on corvids, mostly having to do with ravens and their predation on desert tortoises and sage-grouse.

Population research updates

Ryan presented some of the research he has been doing as a graduate student at BYU. One of the areas he focused on was cover height of sagebrush, and looking at correlations with sage-grouse nest success. He also looked at VHF and GPS data to see if he could detect biases between the datasets.

He explained some of the technical process for how he quantified sagebrush height, exploring how accurately he could assess vegetation height using aerial imagery from a drone. He noted that remote sensing (LIDAR) can tell you how tall trees are, but it's very expensive. He used another method: programmetry. This gives overlapping images of what different brush shapes are, resulting in a 3-D model that tell you about the sagebrush on the landscape. Ryan looked at different flight heights and speeds to compare resolution, compared to what he learned from on-the-ground measurements.

His preliminary results indicate that the drone does a fairly accurate job of estimating the

structure, although is tends to underestimate the height, likely because a person on the ground can find the highest tiny twig, whereas the drone finds what is easier to pick up. No matter the combination of height, speed, etc., the drones were accurate to within 25-30 centimeters. If you can run stats on it, then it is accurate to 10 cm. The processing time is a limiting factor at lower heights, so higher flights are preferable from a data management standpoint.

The group was very interested in his presentation, and had many questions, including:
- Cost comparison of the two methods: it took 4-5 hours of human time to measure 7 plots, with three people (to get a sample in an area); whereas a full area of his study could be covered in a 10-45 minute flight. The start-up costs for a drone and the processing are higher than training technicians, however.
- Other applications: suggestions included Russian Olive detection. Ryan noted that it would work, and with a specialized camera one could get even better data. Other applications might also be possible as well, as long as the birds or other wildlife were not disturbed.

A second project Ryan has been working on is a comparison of VHF and GPS data. He has looked at costs, data volume, precision, survival (i.e, differences in mortality with different types of collars), and other biases (for example, VHF collars being found closer to roads because that's where we drive, or VHF providing no nighttime points). He is interested to know if there are differences in habitat selection based on which data set you chose to look at.

He is working on developing a resource selection function (i.e. a model that says where the grouse are likely to be going) that includes topographic information (elevation, slope, ruggedness, etc.), biologic (distance to lek, lake, trees, grass, riparian areas, etc.), and anthropogenic (distance to different classes of roads, structures, transmission lines, ag fields, etc.). He showed a map of anthropogenic structures and disturbance in the Strawberry Valley, noting that many of them are highly correlated with one another, complicating the analysis. He compared the VHF and GPS data with all these variables, and looked at five seasons: breeding (Mar 1-June 15), brooding (10-12 weeks post hatch), nesting, fall, and winter (Nov 1- Feb 29). He then models selection using just topographic and just biologic, and then used the top model of each of those to repeat for each anthropogenic feature.

The model gives an idea, throughout the study area, of the probability of each pixel being occupied in each season. He just finished this dataset last week, so he has not had time to look at all the results and analyze them. Generally, the two datasets tell similar stories. There are some differences, though. And we assume GPS is more accurate because the bird is not disturbed in the gathering of the data. Just using GPS, we might miss elevation preferences. Because distance to roads came out as a strong factor, there is likely a bias there with the VHS data.

For powerlines, there have been conflicting results from different research projects. A USU study says birds avoid powerlines, Westover's paper suggests that they prefer them, and Ryan has found it difficult to determine due to how anthropogenic features are often related. Richard

noted that powerlines and roads are often associated, which would make it very difficult to determine how much each feature (road or powerline) was related to grouse behavior.

Finishing up his presentation, Ryan noted that he is planning on producing one map for each season for the Strawberry birds. Everyone thanked Ryan for his very timely and thorough research.

Trapping updates

Ryan also shared the current trapping efforts with the group. Trapping in Fruitland started last week. He has 6 active transmitters, and 4 yet to be recovered. There are 12 VHF necklaces, 6 GPS, and 7 of the new 12-gram (half the normal weight, more of a backpack than a rump-mount) GPS collars to deploy. Recent lek counts totaled 25 males and 1 female on Road Hollow, and none at Co-op. Cameras may be going out soon as discussed in the past.

Weed management

Stephen Smith presented his concerns with weed management associated with habitat projects. Thistle and cheatgrass are of primary concern. He noted that weed control near roads is fairly good, but not so much in more remote areas. He feels that using sheep as a tool for controlling weeds might be a possibility. They would need a special use permit. The best time to have grazing control would be when the thistles are in the rosette stage, so it keeps them from going to seed. His recommendation is to have prescribed sheep grazing to benefit sage-grouse habitat for short duration/high-intensity grazing on weed areas. The sheep would necessarily have to be closely monitored, and handled as a vegetation treatment, not just as grazing animals. Steve has several specific areas in mind, such as the Bryant's Fork areas near the reservoir. Lorien will connect with Steve, NRCS, and USFS folks to explore how to try this out.

Round robin updates

- Lorien provided an update from an email from USU researchers working on statewide mapping and other projects. Michel Kohl is working on a state-wide nesting habitat resource selection function, which will produce maps of areas likely to be suitable for nesting. Simona Picardi, a new post doc, is working on a prioritization analysis for conifer treatments. Right now, it is focused on Box Elder County but can be expanded. She explained in her email, "As of now, we've quantified the effects of conifer treatment on vegetation composition on a 5-year scale. In the next couple of weeks, we will be working on translating what this means in terms of sage grouse nesting habitat. Basically, we'll produce some alternative scenarios that compare how much nesting habitat we would gain by treating stage 1 conifer encroachment areas, versus stage 1+2, versus 1+2+3. Another thing I'm working on is refining an analysis that Ben Crabb had started using random forest algorithms to map sage grouse seasonal habitat across the state of Utah (that's for winter, summer, and breeding).

- Simona is also going to be working on an analysis of sage-grouse responses to disturbance to inform development of the compensatory mitigation section of the state sage-grouse plan, which is currently an unfinished appendix.
- Mellissa Wood noted that the supplemental EIS has an April 6th deadline, though it may be extended. It is of most relevance to this group because of the mineral estate that BLM manages; there is not a lot of BLM surface in the SVARM area.
- Anthony was unable to make the meeting as he had a field obligation. He sent an update by email, which Lorien shared with the group: "The W. Strawberry sagebrush treatment is still waiting to hear if we received the rest of the funding through WRI. It didn't rank high so who knows if it will be. For future projects, it looks like we received a new Categorical Exclusion (CE) for sage grouse and mule deer habitat. We will be looking at how we can use them and go from there. The use of herbicide is talked about in this CE, unlike the wildlife CE that I have been using, which excludes herbicide use."

Follow-up Needed

- Lorien will keep the group updated with news about the research projects at USU.
- Lorien will work with Steve, NRCS, and Forest Service to try to move the weed management grazing project idea forward.

Next Meeting

The next meeting was not set. If a field tour is possible under the COVID-19 restrictions, we will explore it later in the summer. We may have another meeting via WebEx in the later spring or summer if there are mapping or project updates to discuss.