

# THE COMMUNICATOR

A QUARTERLY PUBLICATION OF UTAH'S COMMUNITY-BASED CONSERVATION PROGRAM



July 2017

Volume 13, Issue 3

## SIXTEEN TONS, WHAT DO YOU GET, ANOTHER DAY OLDER AND SAGE-GROUSE - SAY WHAT?

by Nicki Frey, USU Wildlife Specialist

“You load sixteen tons and what do you get? Another day older and deeper in debt,” are the opening lyrics to a popular song sung by Tennessee Ernie Ford in the 1950’s. What does this have to do with the greater sage-grouse? Really nothing other than that new research shows that coal mining can be good for the community and sage-grouse.

This July, Alton Coal Development was included in a field tour held for the National Association of County Agricultural Agents. It might seem an odd stop for an organization of professionals that specialize in educating the public about agricultural improvements and strategies. However, Alton Coal Mine, as it is commonly called, in southern Utah has a unique story – one of foresight, collaboration, balancing economic and environmental needs, and ultimately, successful conservation. Throughout the range of greater sage-grouse, there are concerns regarding the response of this species to oil, gas, and mining developments. Past research has indicated that the activities associated with mineral extraction have negative effects on sage-grouse lek attendance, and use of otherwise suitable habitat for nesting and brood-rearing. Utah’s and other state sage-grouse management plans protect leks from such disturbances by minimizing the amount of activity around a lek. So how was it that a surface coal mine began operation in 2010 within 0.5 miles of an active lek, in Sink Valley, Utah? In part because it was on private land, and – importantly – because Alton Coal Development LLC committed to create effective mitigation actions PRIOR to and during their extraction operations.

Working with the Utah Division of Oil, Gas, and Mining, Alton Coal Development met regularly with the Color Country Adaptive Resources Management local working group to develop a mitigation strategy to allow for coal mining to proceed while also benefitting sage-grouse. The willingness of the groups to work together and consider new ideas resulted in a mitigation plan that included: timing restrictions on extraction activities during the breeding season, removal of pinyon and juniper trees to create more brood-rearing habitat prior to the onset of mining activity, predator control, and the quick restoration of coal pits to natural habitats when extraction was complete. Additionally, greater sage-grouse monitoring was initiated to study the species’ response to operations and mitigation.

Spotlight monitoring is conducted regularly by Dr. Steve Petersen (BYU) to survey the number and location of grouse seen in Sink Valley throughout the year. Additionally, monitoring sage-grouse movements using global positioning system (GPS) transmitters is conducted by USU to obtain four locations a day, year-round, to determine sage-grouse use of treated and reclaimed areas. While these data will continue to be collected through 2020, the first 2 years of data collection have indicated a positive response of sage-grouse to the coal mine mitigation efforts.

Of primary concern for the local working group was the effect of the surface mine on the lek attendance of sage-grouse. We found that the grouse moved their lek location over a mile. We also recorded females and broods in the early and late brood rearing periods across all survey years. Females

IN THIS ISSUE

SIXTEEN TONS, WHAT DO YOU GET, ANOTHER DAY OLDER AND SAGE-GROUSE - SAY WHAT?.....1

SAILING THE BEAUTIFUL SEA, THAT IS THE SAGEBRUSH SEA.....2

CARBON AND UINTAH BASIN SAGE-GROUSE GROUP TOURS FOCUS ON IMPROVEMENTS IN WET AREAS.....3

SIXTEEN TONS, WHAT DO YOU GET, CONT. ....4

CBCP MISSION STATEMENT.....4

# SAILING THE BEAUTIFUL SEA, THAT IS THE SAGEBRUSH SEA

by Calee Lott, SEA Coordinator

The sagebrush landscape encompasses over 160 million acres of private and public land in western North America. It is home to over 350 species of wildlife and 100 million people. It is often called a working landscape because it provides some many important benefits and these benefits are tied to diverse land uses. Because of its vastness and connectivity, some refer to it as the sagebrush sea.

Since European settlement, we now have less sagebrush sea. Some estimates suggest that we have lost over 50% of this sea to the human footprint. We all know what the loss of the sagebrush sea has meant for the sage-grouse. The Gunnison sage-grouse has been listed for protection under the Endangered Species Act. The greater sage-grouse averted this fate, because of coordinated range-wide efforts that reduced sagebrush seas habitat loss and fragmentation. This unprecedented effort engaged private landowners with federal and state agencies, sportsmen and women's conservation organizations, businesses, industry, and local communities to build, if you will, a fire wall consisting of habitat management and protection actions which mitigated the conservation threats to the species and averted a listing.

Not satisfied to rest on their laurels, and recognizing that the true path to conservation of the sage-grouse and the working landscape will require a focus on conserving the sagebrush sea itself. Rising like a Pheonix from the ashes of conflict, is the newly organized Sagebrush Ecosystem Alliance (SEA). The SEA engages all the above partners in a pilot project that seeks the conservation of communities and wildlife by identifying and implementing bold and innovative conservation actions on over 1.1 million acres of the sagebrush sea in northwestern Utah, northeastern Nevada and southern Idaho. The SEA is comprised of many stakeholders including local land owners, grazing permittees, local governments, interested publics, Utah State University experts, the Utah Community-Based Conservation Program, Utah State University Extension, National Fish and Wildlife Foundation, Stewardship Alliance of Northeast Elko County, Box Elder Coordinated Resource Management, Utah Division of Wildlife Resources, Utah Grazing Improvement Program, Sage Grouse Initiative, Natural Resources Conservation Service, Bureau of Land Management, and Intermountain West Joint Venture.

I have the honor and privilege of being named the SEA Coordinator. I am no stranger to the issues affecting the sagebrush sea and the wildlife and communities that depend on it. I grew up on a small cattle ranch in Summit County, Utah, where I spent most of my time with my grandpa on the back of a horse moving cows, on the back-hoe doing construction, or on the 4-wheeler changing water. I graduated from Utah State with a major in Interdisciplinary studies, emphasizing on rangeland management, plant science, and animal science, and I am currently working on a master's degree in Agricultural Extension and Education. I am excited to be placed in a position where I can blend my passion and vocation for sagebrush rangelands, conservation, and work with diverse stakeholders involved in West Box Elder Coordinated Resources Management (CRM) decision making process.

One the most important skills I learned growing up was that of being a steward of the land. I believe one of the best ways to be an effective steward of the land is to work towards finding a balance. To find the balance, objectivity is essential. One resource is not more valuable than another. As SEA Coordinator, working under the guidance and direction of Dr. Eric Thacker, USU Rangeland Specialist, I hope to plan and facilitate sagebrush seas rangeland and habitat improvement projects, create lasting connections with stakeholders, improve collaborative efforts between stakeholders, and ultimately play a role in the preservation of the sagebrush ecosystem.

I look forward to the working with all. My contact information is Calee Lott, [calee.lott@usu.edu](mailto:calee.lott@usu.edu) (435) 659-4638



*Photo courtesy of Calee Lott.*

# CARBON AND UINTAH BASIN SAGE-GROUSE GROUP TOURS FOCUS ON IMPROVEMENTS IN WET AREAS

By Lorien Belton, Utah Community-based Conservation Program

Two summer field tours this past June gave participants the chance to view projects recently completed in riparian and wet meadow areas of Carbon and Daggett counties. Although most of the areas visited by the tours were not currently being used by sage-grouse, the projects gave attendees a chance to see the potential for similar riparian and wet meadow restoration in sage-grouse habitat.

The sage-grouse group based in Price, known as Carbon County Adaptive Resource Management (CaCoARM), toured a series of Beaver Dam Analogue (BDA) projects on the private land of rancher Leo Hardy. The BDAs consist of poles and branches set into an eroding streambed to catch sediment. The sediment build-up behind the BDAs helps rebuild the streambanks, provides places for healthy riparian vegetation to re-establish, and stores water in the soil around the stream. This is how beaver dams work to maintain ecosystem health as well, but not all areas are appropriate for beavers for a variety of reasons. The BDAs provide a similar function to real beaver dams, without the additional complexity of live beavers in an area.

In one of the locations, a large flow event had partially destroyed some of the BDAs that were installed, although their presence may have helped reduce the overall amount of damage and erosion in the area. In the other location the tour visited, the BDAs were working very well: the stream was no longer severely down-cut, and riparian vegetation was growing back quickly.

The sage-grouse group in the Uintah Basin (UBARM) teamed up with the Utah Partners for Conservation and Development group for a tour to the Cart Creek watershed on U.S. Forest Service (USFS) land. One of the project areas had off-road vehicle (OHV) trails going through several wet meadows. In another area, a road needed to be rerouted to avoid a series of mud-pits caused by vehicles crossing a stream. Kevin Faucher, a USFS hydrologist, explained several different techniques for managing travel through sensitive areas. Tour participants saw projects to install culverts under a new forest road detour, place durable matting down in wet meadows to reduce damage from passing vehicles, close duplicate trails through meadows, and install bridges and fences that help manage where recreationists can travel. All the projects had a dual purpose of improving habitat while staying compatible with existing recreation uses.

The ideas discussed on both the UBARM and CaCoARM tours provide a basis for looking at mesic areas that sage-grouse use, and considering projects that can help restore degraded wet meadows and riparian areas that are important for sage-grouse early brood-rearing.



*A successful beaver-dam analogue (BDA) with sediment backed up behind it.*



*A BDA that was unable to withstand the force of a large flood event but still caught some debris.*



*Tour participants converse across a section of stream still in need of repair.*



*Nicole Neilson from UDWR shows "before" pictures of how down-cut the banks were before the BDA.*



*Reinforcement mats on a trail through a wet meadow on the Ashley National Forest, alongside branches used to discourage use of parallel paths. Photos courtesy of Lorien Belton.*

## If it's not good for communities, it's not good for wildlife.

### SIXTEEN TONS, WHAT DO YOU GET... CONT.

with chicks were observed during early brood-rearing periods in sagebrush habitats and during late brood-rearing periods in wet meadow habitats approximately within 1 mile from the active mine site, respectively. Between 2013–2015, an average of five chicks were observed adjacent to the mine site, primarily within the wet meadow area east of the mining activity.

Analysis of the GPS data supports the spotlight survey data. The collaborative efforts of members with their diverse backgrounds, allowed for them to implement creative strategies and actions in advance of the surface disturbance of the mine. By implementing habitat treatments, in conjunction with the Bureau of Land Management (BLM), they created potential habitat before existing habitat was removed. Thus, sage-grouse had an alternative habitat source to use adjacent to their current habitat. And they chose to use it. Year-round, the majority (> 95%) of sage-grouse locations are found within 1.2 miles of the mine footprint in the area treated by the BLM and Alton Coal Development. Both males and females predominantly use the area to the southwest of the mine footprint.

Most of these locations occur in the open habitat that once was trees, but has been treated to remove pinyon and juniper trees. Looking at the mapped locations, one can also see that grouse used the areas that were disturbed by mining activity; these locations occurred AFTER Alton Coal Development reclaimed the area, reseeding it as a pasture. Finally, one can't help but notice the large cluster of locations due east of the mine. These locations represent three female grouse nesting and brood-rearing locations 2015–2017. This area was used as brood-rearing habitat prior to the mining activity, and continues to be a draw for female sage-grouse. One female has successfully raised three broods in this region. We hypothesize that the noise generated by the crushing operations and vehicle traffic may cause her stress, but that it is compensated by increased protection from predators. Conversely, two females that nested in the treated habitat to the southwest of the mine have not successfully hatched chicks. Based on these findings, Alton Coal Development will continue to protect this important brood rearing area. Additionally, future mitigation will focus on increasing the availability of mesic habitats in the lands adjacent to those used by the female grouse.

We are still in the beginning stages of monitoring the response of greater sage-grouse to mining activity and habitat reclamation, and thus hesitate to make any bold statements. However, our initial data suggest that sage-grouse are responding positively to the habitat treatments and are not “pushed out” of areas, such as important brood-rearing habitat, that they prefer. Ongoing data collection of female recruitment and survival will determine if the increased human activities have negatively impacted breeding activity levels and reproduction success.

It has been 6 years since Alton Coal Development began their extraction activity in Sink Valley. That sage-grouse lek counts have held steady (consistent with trends) and that there continues to be recruitment in the area is a good indicator that the teamwork of Alton Coal Development, Division of Oil, Gas and Mining, and the Color Country working group were successful at creating and implementing a successful mitigation strategy. Future work includes habitat treatments to improve connectivity to potential winter habitats south of Sink Valley and to improve the availability of mesic environments. We will continue to provide you with updates as our study progresses.

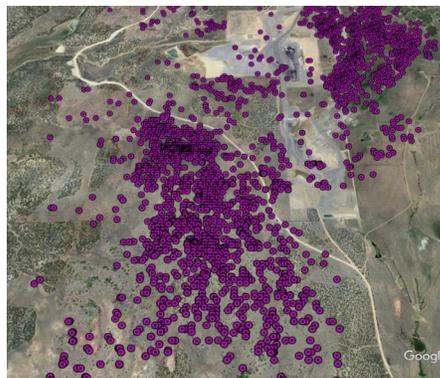
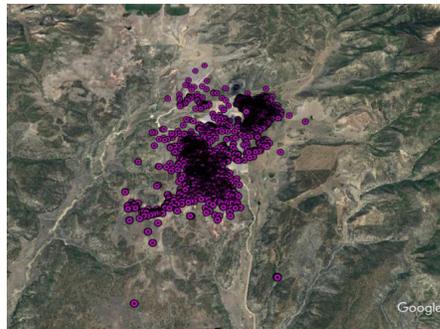


Figure 1 (top): The locations of greater sage-grouse in Sink Valley, UT October 2015 – July 2017.

Figure 2 (bottom): Close up depiction of the locations of greater sage-grouse in Sink Valley, in proximity to the Alton Coal Mine, October 2015 – July 2017. The base imagery was created in 2014, but is included to provide reference to the mine footprint. At the time of the depicted locations, these southern portions of the surface mine had been filled and reseeded to a grass habitat. The mining office and crushing station, seen as the darker portion of the mine, is still active.

### Utah's Community-Based Conservation Program Mission

Utah's Community-Based Conservation Program is dedicated to promoting natural resource management education and facilitating cooperation between local communities and natural resource management organizations and agencies.

Utah State University is committed to providing an environment free from harassment and other forms of illegal discrimination based on race, color, religion, sex, national origin, age (40 and older), disability, and veteran's status. USU's policy also prohibits discrimination on the basis of sexual orientation in employment and academic related practices and decisions.

Utah State University employees and students cannot, because of race, color, religion, sex, national origin, age, disability, or veteran's status, refuse to hire; discharge; promote; demote; terminate; discriminate in compensation; or discriminate regarding terms, privileges, or conditions of employment, against any person otherwise qualified. Employees and students also cannot discriminate in the classroom, residence halls, or in on/off campus, USU-sponsored events and activities.

This publication is issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Kenneth L. White, Vice President for Extension and Agriculture, Utah State University.