

C/025/005 Incoming
cc: Joe
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Date: October 8, 2010

Daron R. Haddock
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Oil, Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801

Subject: Greater Sage-grouse and Habitat Improvement Progress Report, Alton Coal Development LLC, Coal Hollow Mine, C/025/0005

Dear Mr. Haddock,

Alton Coal Development, LLC (ACD) is providing the enclosed Greater Sage-grouse and Habitat Improvement Progress Report for Alton Coal Development, LLC. This report is submitted to keep UDOGM informed with the progress that ACD has made to date.

Please let me know if you have any questions or concerns.

Sincerely

B. Kirk Nicholes
Environmental Specialist

OCT 11 2010

Greater Sage-grouse and Habitat Improvement Progress Report

For

Alton Coal Development, LLC

September 4, 2010

Steven L. Petersen, Ph.D., Consultant

Alton Coal Sage-grouse and Habitat Improvement Progress Report

Steven L. Petersen, Ph.D., Consultant

2009 -2010 SAGE-GROUSE MONITORING AND HABITAT IMPROVEMENT ACCOMPLISHMENTS

Sage-grouse trapping

From late March to early May, birds were trapped on or near the Hoyts Ranch lek (Figure 1). Crews gathered on 4 nights to spotlight and trap birds from the primary lek at Hoyts, which is located approximately 10 miles south of the town of Hatch, Utah. A total of 5 birds were trapped including a single hen. To date, most of the collared birds being monitored are male (6), however, there are two females currently being monitored. Trapping crews consisted of Nicki Frey, Kevin Heaton, Wally Dodds, Dustin Schaible and 2-3 student technicians. Radio collars and the funds used to monitor birds were provided by the Division of Wildlife Resources (\$6,000) and Alton Coal (\$18,000). Both sources of funding were made available in Spring 2010.



Figure 1. Collaring a male greater sage-grouse prior to long-term monitoring. Trappers are Nicki Frey (right), Wally Dodds (center) and Sage Petersen (left).

Hoyts Ranch Monitoring Project

Nicky Frey, Ph.D. and several of her student technicians from Southern Utah University monitored all radio-collared birds that were trapped at Hoyts Ranch during 2009 and 2010. According to Frey, in summer 2010, each of these birds were located two times each week. Monitoring began in the spring following the trapping period near the Hoyt's Ranch lek. Monitoring continued throughout the spring and summer months and are still being monitored currently.

Nesting and Hatching. Both collared females successfully bred and nested in 2010. Each nest was found while the hen was sitting on her eggs. One nest had 6 eggs hatch out of 7 that had been laid. The other nest had 4 eggs hatch out of the 6 laid. Hens did not move from their nests until the eggs had hatched. After hatching, the hens and chicks moved in a southward direction.

Seasonal Distribution. Frey found that 8 collared birds remained near the lek for approximately two months and then began to move in a southward direction toward the town of Alton, Utah. As grouse moved further south, approaching Alton, they became more difficult to locate and monitor. Four of the birds eventually dies or went missing. The other four birds were found regularly and monitored consistently. Two of these four birds remained together and were often observed flocking with a larger group of 7-9 birds. This large flock was tracked frequently, remaining in an area that had been treated to create optimal sage-grouse habitat. These two birds were tracked throughout the summer to locate the larger flock, however, toward the end of the summer one of these grouse had lost the collar, which was found with another collar from a previous study. Fortunately, the single collared bird could still be used to locate the larger flock. Multiple hens occurring in this and other flocks were sighted with chicks showing that successful breeding, indicating recruitment and possible sustainability of sage-grouse in the general area.

Corridor Development and Improvements

A corridor connecting the Hoyts Ranch area with Alton has been established to enhance wildlife habitat use and to provide conditions that promote greater sage-grouse migration between Hoyts Ranch and Alton areas (Figure 2). This corridor is located on private land owned by the Heaton family, and the work has been conducted by Karl Heaton, a resident of Alton, Utah. Land treatments have emphasized large woody plant reductions, in particular juniper (*Juniperus osteosperma*) and oak (*Quercus gambelii*) tree removal. Karl Heaton has been using large equipment to push trees down or pull them out, followed by trees piling for future removal.

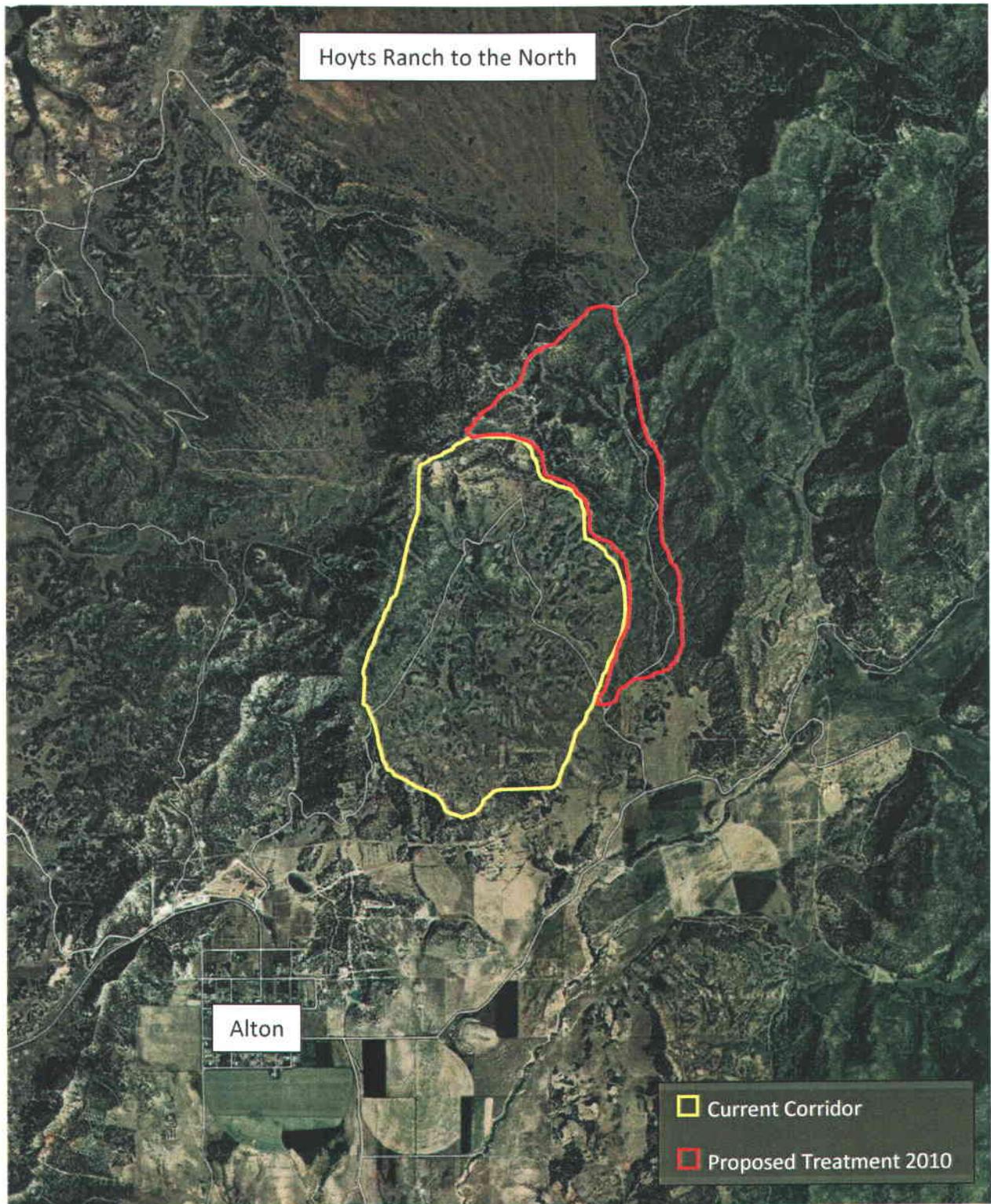


Figure 2. Current and proposed site for the Hoyts Ranch and Alton area treatment and habitat improvement project . This area functions as a corridor for greater sage-grouse migration between these two populations.

After tree removal, sites have been seeded with a grass/forb mix. This mix included species seeded by the Utah Division of Wildlife Resources for sage-grouse habitat improvement projects throughout the state. Areas seeded in 2008 have experienced high plant community establishment success, functioning in providing forage for wildlife (mule deer, sage-grouse, migratory birds), reducing erosion potential, and providing habitat and hiding cover for sage-grouse and other wildlife species found in the area.

Karl Heaton has met on different occasions with S. Petersen to discuss corridor development and improvement. Discussions have included the need for desired plant community structure, species lists for seed mixes, and future work and development plans. These conversations will continue with Karl, Petersen, and Kirk Nicholes to ensure that habitat improvements are effective and useful. The Division of Wildlife Resources will also provide with updates and invited to provide recommendations on the corridor project.

Finally, Alton Coal has purchased a drill seeder for Karl that will be used to revegetate treated areas in the corridor region and other disturbed areas.

Predator Control Project

Predators of Greater sage-grouse have been observed in the Alton area for many years. Concern has been expressed by habitat consultants, federal wildlife biologists, DWR employees, and mine officials for the potential effect that these predator populations can have on sage-grouse in this area. In particular are threats from common ravens, American crows, coyotes, and raccoons, as well as fox, skunks and large birds of prey (golden eagle) (Figure 3).



Figure 3. Common predators of the Alton area include Coyote, raccoon, and common raven. Control efforts are needed to reduce the impact of these predators to greater sage-grouse populations in both Alton and Hoyts Ranch.

In winter 2010, Wildlife Services, a federal predator control organization that works with state wildlife offices, was contacted regarding the need for heightened predator control in the Alton and Hoyts Ranch areas. On May 21, 2010, two employees with Wildlife Services visited the Alton area (accompanied by S.L. Petersen) and evaluated predatory control needs and developed plans to remove those predators with the highest potential impacts to the sage-grouse population. These specialists had previously initiated predator control in the Alton area, but follow-up efforts were made at that time and subsequently.

The primary effort made from Spring to fall has been crow and raven reductions. Between 300 – 400 poisoned eggs were distributed across the area on 2-3 different occasions including that same date. These eggs have been shown to be very effective at Corvid removal and subsequent to that time, fewer birds have been observed in the area. Roger, a specialist in small and medium sized mammalian predators, suggested that the control of these species would be more effective and economically more efficient with fall and winter trapping. Roger is currently trapping small and medium sized mammals using snare traps in the Alton area and will continue with coyote control this coming winter.

To date, Alton Coal has contributed \$6,000 toward predator control activities (poison eggs and mammal trapping).

CCARM Participation

Representatives of Alton Coal Development have periodically attended the CCARM meetings held in Panguitch, Utah. Occasionally, consultants (S.L. Petersen) have been invited to attend these meetings by committee leaders to update participants on the development of the project and progress made to improve conditions for sage-grouse in the area. On April 21st, McCourt and Petersen attended this meeting and provided an update on the status of the mine, the corridor, habitat improvement plans, and other relevant information. Discussions were also held to see how work being done in this area can be used to support goals created by the DWR to improve overall habitat for greater sage-grouse specifically (also known as “Dustin’s Dream”).

2010 – 2011 SAGE-GROUSE MANAGEMENT PLAN

Conservation Area Habitat Improvement

Habitat Diversification

East of the Alton lek is an intact sagebrush stand that could potentially serve as cover, nesting, and foraging habitat for sage-grouse. This area will not be included in the mining operations, but will be set aside as a sage-grouse conservation area. The sagebrush in this stand has large

big sagebrush (*Artemisia tridentata*) plants that exhibit canopy cover levels higher than recommended in the habitat guidelines. Therefore, habitat improvements will be conducted to increase structural diversity and increase desired plants that provide cover and forage for sage-grouse.

In fall 2010, sagebrush will be removed or thinned to increase establishment sites for several forb species important in sage-grouse diets. These plants can also provide resources to insects which in turn are consumed by sage-grouse chicks during the critical brood-rearing phases of their lifecycle. The pattern of sagebrush treatments will be designed to create mosaics of plant community patches that increase total plant diversity and enhance site stability and resilience (Figure 4). Treatments will avoid excessively large patches which potentially function as landscape fragmentation rather than enhancement and can result in subsequent declines in bird use and population size where these occur. The total size of the conservation area is 2.5 acres. The area of the treatment patches combined is 0.25 acres, or 10% of the total area.

A seed mix consisting of forbs and some grasses will be seeded in this area. Species that will be included are as follows:

Grasses

- Bromus carinatus* – mountain brome (native)
- Elymus elymoides* – bottlebrush squirreltail (native)
- Elymus trachycaulus* – slender wheatgrass (native)
- Stipa hymenoides* – Indian ricegrass (native)

Forbs

- Achillea millefolium* – western yarrow (native)
- Astragalus cicer* - Cicer milkvetch (introduced)
- Balsamorhiza sagittata* - arrowleaf balsam root (native)
- Cleome serrulata* - Rocky Mountain beeplant (native)
- Lactuca serriola* - prickly lettuce (introduced)
- Linus lewisii* - blue flax (native)
- Lupinus argenteus* - silvery lupine (native)
- Medicago sativa* – alfalfa (introduced)
- Melilotus officinalis* - yellow sweet clover (introduced)
- Onobrychis viciifolia* – Sainfoin (introduced)
- Penstemon palmerii* - Palmer penstemon
- Sanguisorba minor* - small burnett (introduced)
- Sphaeralcea coccinea* – scarlet globemallow
- Trifolium repens* – white dutch clover (introduced)

The seed mix will consist of all or most of these species. Each of these species can be obtained from commercial seed dealers in Utah (i.e. Granite Seed, Lehi, Utah). Sites will be monitored to ensure that invasive plants are detected and when possible controlled.



Figure 4. Proposed treatment patches for the conservation area, designed to enhance sage-grouse habitat conditions. Patches function as sites for forb establishment and habitat diversification. Within patches, plants will be harrowed or disked to reduce or eliminate big sagebrush. Total disturbance area should approximate 20% of the total area.

Prior to treatment applications, the Division of Wildlife Resources was provided with this information and map for additional input and suggestions related to optimal patch size and shape, seed mix composition, and monitoring strategies.

Juniper Removal

In 2008, 10,000 trees were removed from the conservation area, located east of the current lek in the sink valley area. This removal was funded and carried out by Alton Coal. Along the eastern perimeter of the conservation area, juniper trees are still present along the fringes that may provide viewpoint for raptors. Where possible, these trees will continue to be removed to decrease perching sites and to increase the ability of big sagebrush to reestablish.

Sage-grouse Population Monitoring

Sage-grouse will continue to be monitored using resources available at Southern Utah University and Dr. Nicki Frey. Additional birds will be trapped and collared in fall 2010 or spring 2011. Hens will be targeted for capture and collaring, but males will also be selected due to the ease in locating these birds.

Additional Corridor Expansion and Development

In fall 2010, Karl Heaton will continue to remove juniper and oak to expand the corridor area between Alton and Hoyts Ranch. This work will allow birds a greater area to select from when migrating or even provide longer-term habitat conditions that could be used for raising brood or for fall and winter residence.

Winter Predator Control Project

Predators will continue to be controlled throughout the winter period. Ravens and crows will be poisoned using treated eggs and small mammals will be trapped or shot. Aggressive predator control methods are needed to provide sage-grouse relief from heavy losses to primarily chicks and juveniles, but also as adults. Even though golden eagles have been observed taking adult sage-grouse, these protected birds will not receive any control.