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MORGAN-SUMMIT GROUP TOURS CRITICAL SAGE-GROUSE AREAS

By Lorien Belton, Utah State University

On July 6th, members of the Morgan-Summit Adaptive Resource Group toured several important sage-grouse areas and discussed strategies for addressing threats to the birds. One important lek, the Henefer Divide lek, is bisected by State Highway 65, and is a popular birding destination in the spring. However, not all visitors are respectful of the birds, resulting in frequent disturbances. Some birds also strut in the road and are hit by cars speeding through the area. In response to this disturbance, the birds face another threat: it appears that some birds may be moving to a nearby lek that is more secluded, which may be a temporary reprieve, but the nearby lek (called the Pioneer lek) is on land currently slated for development. MSARM members discussed ways to improve the Henefer Divide lek for the birds, including fence deflectors that the Audubon Society can install near the lek to decrease the likelihood of sage-grouse fence collisions. Other options for improving the safety of the lek were discussed as well, such as highway signs, lek vegetation clearing, and an information kiosk that could help improve visitors' behavior at the lek by informing them of the need to stay



DWR Biologists Jason Robinson and Scott McFarlane stand in front of the Henefer Divide lek during the July 6 field tour. The lek area is immediately behind the fence, just feet from the highway. Photo courtesy of Lorien Belton.

in their vehicles and not disturb the birds. The group also drove to an overview area to observe and discuss the future of the Pioneer lek. It is threatened by potential development and possibly by the proposed Kern River pipeline, which is slated to be routed within several hundred yards of the lek. Because the local population appears to be non-migratory, this small area, just a few miles wide, is likely to be very crucial to the long-term survival of the local population of about 500 birds. Radio-collaring projects to better understand the birds' movements in the area are desperately needed and the group discussed possibilities for funding research.

New Sage-grouse Biologists Translocate

David Dahlgren has accepted a position in Kansas and will be leaving mid-August. We wish him the best in his future career.

Three of our student researchers have graduated from Utah State University this Spring. Their thesis or dissertation will soon be available on our website, www.utahcbcp.org.

Chris Perkins, "Greater Sage-grouse Populations Inhabiting the Wildcat Knolls and Horn Mountain, South Central Utah."

Phoebe Prather, "Factors Affecting Gunnison Sage-grouse (*Centrocercus minimus*) Conservation in San Juan County, Utah."

Eric Thacker, "Greater Sage-grouse Seasonal Ecology and Responses to Habitat Manipulations in Northern Utah."

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WHAT IS A TALL STRUCTURE TO SAGE-GROUSE AND DO THEY AVOID THEM? INQUIRING MINDS WANT TO KNOW!!

By Terry Messmer, Utah State University

The Energy Policy Act of 2005 requires all state and federal agencies to grant utilities access permits to promote reliable, renewable energy production and transmission. Contemporary transmission of energy relies largely on above ground electric-utility structures and transmission lines. Contemporary thought suggests that the placement of tall structures (e.g., power lines, communication towers, wind turbines, and other installations) and associated activities in sage-grouse habitat may impact the species. The U.S. Fish and Wildlife Service reported that because renewable energy resources require many of the same features for construction and operation as do non-renewable energy projects, wind power facilities may also impact sage-grouse. To mitigate potential impacts of tall structures on sage-grouse and other sagebrush obligate species, federal and state agencies have suggested implementing various buffer distances when placing tall structures. However, line siting requirements within sage-grouse range continue to vary by state and agency.

The Utah Wildlife in Need Foundation (UWIN) in cooperation with Rocky Mountain Power, the Utah Division of Wildlife Resources and the Utah Community-Based Conservation Program is facilitating a process to synthesize stakeholder knowledge regarding the effects of tall structures on sage-grouse.

This project will assess the adequacy of existing information to predict and mitigate the potential impacts of tall structures on sage-grouse by identifying information needs, and prioritization of the research needed to provide new knowledge for policy development. The project combines a public input process (stakeholder workshops in Wyoming and Utah) with a synthesis of published and unpublished information. This project will result in the publication of a comprehensive document that summarizes contemporary knowledge and policy regarding the effects of tall structures on sage-grouse. This document will also identify and prioritize research needed to fill information gaps and mitigate existing inconsistencies in terms of contemporary policies governing tall structure siting requirements. A technical report containing the results of this process will be released later this summer. This report will be available online at www.utahcbcp.org.



“To a sage-grouse, a fenceline may constitute a tall structure.”



FENCE MARKING REDUCES GREATER SAGE-GROUSE COLLISIONS AND MORTALITY

By Tom Christiansen, Sage-Grouse Program Coordinator, Wyoming Game & Fish Dept., and Todd Black, Utah State University Community-Based Conservation Program

Fence collisions have been reported to cause sage-grouse (*Centrocercus urophasianus*) injury and mortality, but few efforts have been made to quantify this concern and publish results. In this article we report the preliminary results of two studies to evaluate the effectiveness of several techniques to reduce sage-grouse collisions.

Wyoming Study

This study area is located approximately 12 miles northeast of Farson, WY, adjacent to Little Sandy Creek on the Sweetwater-Sublette county line. Greater sage-grouse use the area in large numbers year-round. Two large leks (100+ males) are located within 2 miles of the fence. The fence is a 3-wire BLM range fence approximately 4.7 miles long. The fence generally runs from southwest to northeast, but does so in a zigzag manner. The creek and associated riparian area serve as late brood-rearing habitat and the fence bisects winter habitat for, at least, several hundred grouse. The study is on-going.

Pretreatment data were collected during nine surveys where observers documented evidence of wildlife fence strikes and mortality while driving 2-3 mph immediately adjacent to the fence. These surveys resulted in evidence of 170 bird strikes/mortalities. Confirmed greater sage-grouse accounted for 146 (86%) of the 170 strikes/mortalities documented. The other 22 observations were of waterfowl (4), raptors (5), passerines (2), shorebirds (1), and unknown birds (12).

After collecting preliminary data, 1.6 miles of the fence was marked in approximately quarter mile sections with either FireFly™ bird diverters (donated by FireFly Diverters LLC for this study) or homemade markers patterned after those developed and used by the University of Oklahoma's Sutton Avian Research Center to reduce lesser prairie-chicken fence mortality. The later were modified with reflective tape to increase



Photos courtesy of Michael Hart, Todd Black, Michael Guttery, and Dwayne Elmore.

FENCE MARKING REDUCES GREATER SAGE-GROUSE COLLISIONS AND MORTALITY (CONT.)

visibility in snow cover conditions. The fence was unmarked (control) for 3.2 miles. Marked sections were bounded on either side by unmarked sections. Only the top wire was marked since very few collisions were documented on the lower two wires during pretreatment monitoring.

Six post-treatment surveys were conducted in the same manner as those in the pretreatment phase of the study. Results suggest markers (all types combined) reduced bird fence collisions by 70% over unmarked sections. Seven bird strikes, all sage-grouse, were documented in marked sections (4.55 strikes/mile) while 47 bird strikes (15.31 strikes/mile) were recorded in the unmarked sections. Thirty-six of these were confirmed sage-grouse (11.7 strikes/mile). If only confirmed sage-grouse data are compared, the markers appear to have reduced grouse mortality by 61%.

In 2009 the treatment sections were changed to control sections, the types of markers were changed, and more treatment sections were added. Half of the fence is now marked, alternating between sections of treatment and control. All of the markers are now based on the Sutton design. The FireFly I design has been eliminated from the study. Although it was highly effective (0 strikes), the price, maintenance and visibility of the device was not appropriate for wide scale use. With this information, the company, FireFly Diverters LLC, has applied their unique system of reflective/glow-in-the-dark tape to the Sutton model and now markets a new diverter which is currently being tested. Other versions of the Sutton device to which different reflective tapes have been applied will also be tested. Early indications suggest all of these markers will succeed and further decrease avian fence collisions beyond the 70% level suggested by our initial study reported above.

A Similar Utah Experience

In 2003, while conducting a grazing experiment on Parker Mountain for the Utah prairie dog, USU researchers built several experimental pastures encompassing 40 acres with over a mile of new fence. In the spring of 2004 during the sage-grouse mating season, USU researchers found several dead male sage-grouse along one span of the fence. Although this finding actually led to the discovery of a new lek, this is not a technique we can recommend to locate new leks. Researchers quickly implemented mitigation efforts to mark the fence using vinyl siding cut into small pieces to place on the barb wire to make the fence more visible.

In 2006, USU researchers designed a study to test the effectiveness of these markers in conjunction with a new drift fence placed in key sage-grouse habitat in West Box Elder County Utah. The fence went across a major ridge and during year one researchers recorded 10 different bird strikes throughout the year with the majority occurring during the spring. During the late summer and fall of 2006, researchers placed fence line markers along areas where strikes had occurred and in other key areas. Results were monitored and in 2007, no strikes were recorded.

Recommendations

Not every fence is a problem; those that tend to cause problems typically include one or more of the following characteristics: 1) constructed with steel t-posts, 2) are constructed near leks, 3) bisect winter concentration areas, and/or 4) border riparian areas. Areas of greater topographic relief (roughness) appear to have lower incidence of collisions apparently because the birds have to fly higher to avoid the ground. Avoid building fences within at least $\frac{1}{4}$ mile (preferably 0.6 mile) of leks. New and existing fences in these areas should be surveyed for evidence of grouse fence strikes before installing permanent fence markers. Surveys can be conducted by walking, driving or riding slowly (2-3 mph) along the fence looking for carcasses or concentrations of feathers on the ground and individual feathers caught on top wire barbs. Evidence of fence strikes does not last long due to weather and scavengers. The discovery of fence strikes is therefore cause for mitigation. Where the decision has been made to mark a fence we currently recommend the top wire be marked with at least two markers of the Sutton design modified with high quality reflective tape. While we have yet to substantiate the need for reflective tape, untaped markers become essentially invisible with snow cover.



Photos courtesy of Todd Black and David Dahlgren.

