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MANAGEMENT ALSO MATTERS: GROWING GREEN GROCERIES FOR GREATER SAGE-GROUSE

By Terry Messmer and Dave Dahlgren

Greater sage-grouse are closely tied to sagebrush (*Artemisia* spp.) habitats. They rely heavily on sagebrush for cover, nesting habitat, brood rearing, and forage. Because they lack a muscular gizzard, they are entirely dependent on soft materials for food from October to April.

During the other months of the year, sage-grouse forage on mostly forbs, some insects, and sagebrush. Sage-grouse chicks, however, depend upon insects for the first three months of life. Research with captive sage-grouse chicks showed that birds less than 21 days old required insects for survival and development. Chicks deprived of insects died within 10 days of hatching or had restricted growth. After 21 days, chicks switched to a forb and insect diet and gradually

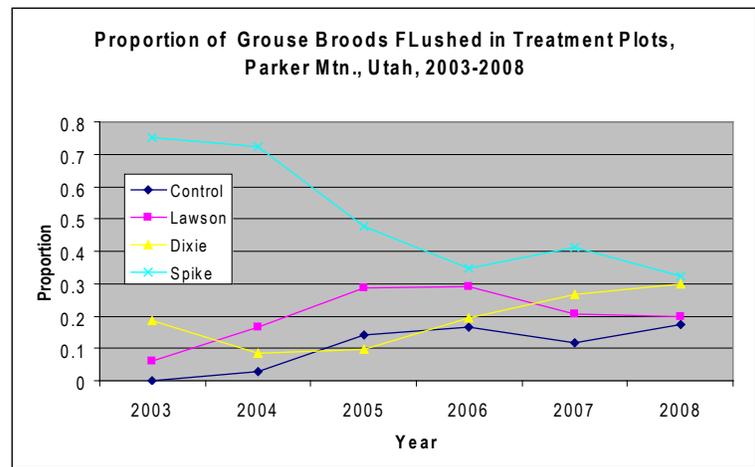


Figure 1. More sage-grouse broods were flushed on treated than untreated plots during the first years following the treatments. However, the chart shows a trend of converging use within the plots. Vegetation has gradually changed within the experimental plots since treatments took place in 2001 and 2002. Shrub cover has continued to increase in treatment plots, while control plots have stayed relatively constant. Grouse use has reflected this change.

became more dependent on forbs throughout the year, until October when sagebrush became important.

Utah studies on sage-grouse show that brood-rearing habitat in many areas is in poor condition. Good brood-rearing habitat is relatively open with less than 20% sagebrush canopy cover and at least 10% grass and forb cover. The greater diversity in plant species in the understory; the more abundant the insects.

To enhance brood-rearing areas in Utah, managers have experimented with several techniques to open dense stands of sagebrush to provide “more green groceries” for sage-grouse, other wildlife, and livestock. On-going work on Parker Mountain clearly has demonstrated a positive grouse response to management efforts (Figure 1).

However, this research has also confirmed that the size and configuration of the treatment used and how the site is managed after can also affect sage-grouse use. If the subsequent management does not include prescriptions designed to sustain post-treatment vegetation diversity, the initial benefits will be lost over time. In essence, management does matter. (Figure 1).

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By Nicole Frey



The Utah Prairie Dog (UPD) was originally listed as an endangered species by the U.S. Fish and Wildlife Service (USFWS) in 1973. In 1978, based on information provided by the Utah Division of Wildlife Resources (UDWR), the species status was upgraded from endangered to threatened. In 1991, to guide efforts to recover the species, the USFWS published the UPD Recovery Plan. The plan identified steps to protect and increase the population of UPD in three recovery areas. The plan also identified measures to encourage landowners to protect prairie dog habitat and reduce threats to the species.

A recent survey conducted by Utah State University of landowners within the three recovery areas revealed that most landowners believed the Endangered Species Act (ESA) is an important mechanism to protect declining species. They, however, also were concerned about the lack of management options that would allow them to protect the UPD while mitigating economic impacts the species may have on their property.

Thanks to a grant received from the Natural Resource Conservation Services (NRCS), Ted Toombs of the Environmental Defense Fund; and Mark Peterson and Jan Anderson, of the Utah Farm Bureau Federation, organized a working group and led them through a process to develop a market-based system designed to provide incentives to landowners to protect and manage for UPDs. The Recovery Credit System (RCS) that was developed provides an avenue for landowners to earn credits for managing their land for UPDs. These credits can be sold to developers and others who are proposing projects that could impact UPD habitat in other areas. Under the RCS, UPD are protected on lands enrolled in the program and landowners can receive economic incentives to sustain suitable UPD habitat.

In addition to wildlife biologists and UPD recovery team members, the RCS working group included county and city officials, finance managers, and members of the Cedar City Homeowner's Association. The working group established four committees (Science, Outreach and Communication, Finance, and Policy and Administration) to tackle the issues. Their work was augmented by insights provided by David Cox, also from the Environmental Defense Fund. David was instrumental in creating a similar recovery credit system in Texas. Each committee worked on their focus area over the course of the year, with periodic meetings of the entire group to present their progress. The science committee created a baseline minimum for a Conservation Unit that includes acreage, UPD numbers, and vegetation species diversity. Once a landowner would enroll land as a credit unit it would be evaluated as to its relative quality, and a value of points would be assigned to that land/landowner for sale. The science committee also created a credit ranking matrix to award points for the quality of a credit unit's vegetation, the location of protected UPD in landscape, and the number of UPD. A similar matrix was created for people who wanted to 'debit' or remove UPD and their habitat.

After these matrices were created the other committees were able to work the matrix to determine if this idea was feasible financially, promote the idea to private landowners and potential 'debtors', and determine the program's eligibility under ESA. Focus groups were held with landowners and land developers to determine the potential interest in the program thus far. Within the focus groups, the finance committee asked questions to determine the feasibility of the cost:debit ratio thus far. Thanks to the input received from focus groups and another federal grant received by NRCS, a pilot RCS program will be implemented this next year. This pilot program will test the effectiveness of the Recovery Credit System concept. The RCS working group is optimistic this effort will lead toward recovery of the UPD.

“The Utah Prairie Dog Recovery Credit System concept provides landowners new options to recover Utah Prairie Dogs.”



A survey of Utah landowners revealed most believe the Endangered Species Act is important to protect species from extinction. At the same time, however, they are interested in management options that protect both the species and provide economic sustainability.

By David Dahlgren

Pointing dogs have been a passion of mine since I was a child. I was born into a home with a high-strung English pointer and a German shorthair. I used to tease these dogs to no end. Little did I realize at that time in my life how important pointers would be in my life's work.

When I started graduate school in 2002, my initial research was focused on trying to measure greater sage-grouse responses on Parker Mountain to management. Based on my past experience with pointers as bird dogs, I felt I might be able to incorporate them into my research. I soon found that pointing dogs were a rapid and relatively low-cost method to monitor sage-grouse use in sagebrush plots that were being manipulated to enhance brood-rearing habitat.

In 2006, we published some of the first research regarding the response of sage-grouse to sagebrush treatment, where the pointing dogs were used. Our research showed that both adult sage-grouse and broods clearly preferred certain treatments (Dahlgren et al. 2006, Wildlife Society Bulletin 34:975-985, see Figure 1).

Because I didn't have enough "dog detectives" to search my study plots all at the same time, I solicited help from The Utah Chukar and Wildlife Foundation (UCWF, www.utahchukars.org). Since 2004, UCWF members have volunteered their time and their dogs' time to count sage-grouse on Parker Mountain.

An interesting aspect of doing the pointing dog flush counts has been the similar trends between sage-grouse production (amount of chicks and broods) and pointing dog flush counts (Figure 2). For instance, 2007 was our lowest production year on record (radio-marked hens) and is also our lowest flush count year (Figure 2).

Our research demonstrated the bird dogs are a reliable way to track population trends, and possibly densities across a landscape. Researchers in Europe recently developed methods to assess red grouse densities using pointing dogs and distance sampling. We hope to develop these methods specifically for sage-grouse in the near future. The new technology produced by Garmin™ in their Astro Units for hunting dogs will aid this research immensely. This work would have not been possible without the support of our partners and of course - "Man's Best Friend."



Photo courtesy of Les Flake

Proportion of Grouse flushed by treatment plot, Parker Mtn., Utah, 2003-2008

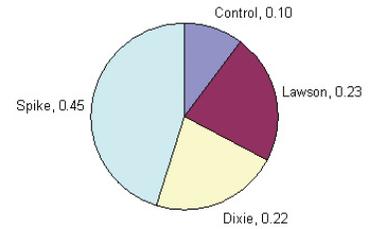


Figure 1. Proportion of greater sage-grouse flushed by point dogs for mechanical and chemical treatments conducted on Parker Mountain, 2003-2008.

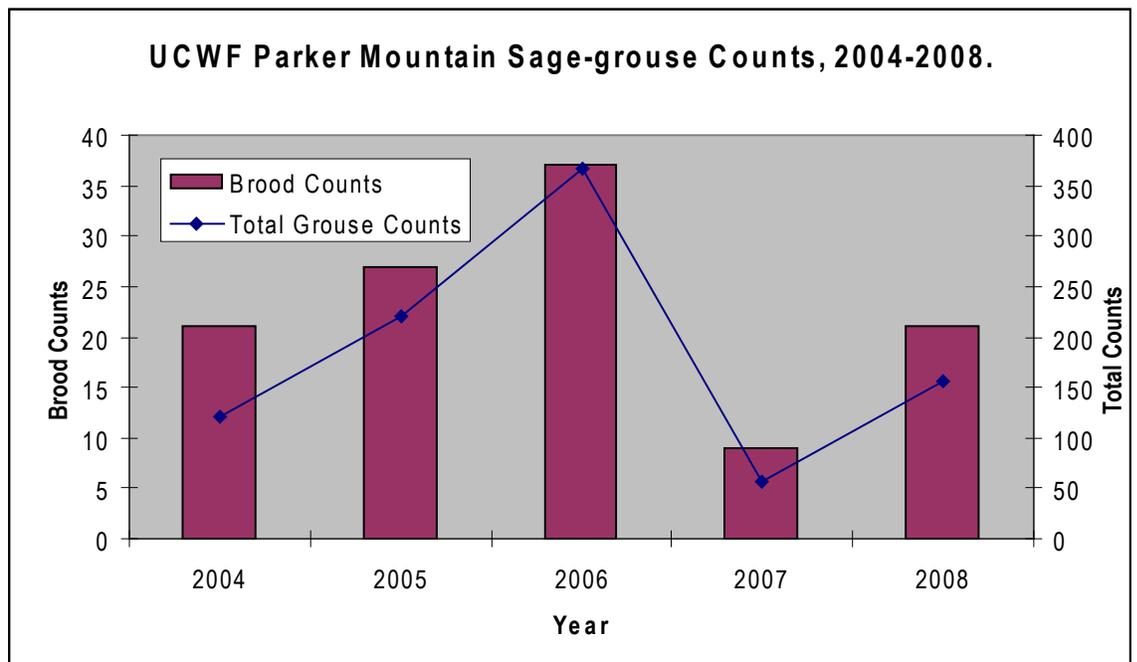


Figure 2. Sage-grouse brood counts closely followed annual lek-count trends on Parker Mountain.

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

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.

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Photo 2. Group traveling through recent Rose Bud fire which burned through a sage-grouse lek and burned off several hundred acres of sage-grouse wintering habitat.

Wildfires Threaten Critical Greater Sage-Grouse Range in West Box Elder County

By Todd Black

In the past year, wildfires fueled by a cheat grass understory have blazed through thousands of acres of sagebrush in Nevada and Idaho. These fires have destroyed critical greater sage-grouse habitat, thus moving the species closer to the brink of a potential listing. According to Eric Thacker Ph.D. student at Utah State University, much of the lekking habitat and critical winter range for sage-grouse in West Box Elder County may also be just a lighting strike away from the same fate. Thacker made these comments during a field tour conducted this past September to members of the West Box Elder Adaptive Management Sage-Grouse Local Working Group (BARM) and an interagency task force drawn together to address the issue (Photo 1).

"Wildfire could destroy key grouse wintering and lekking areas in this area of the state," Thacker told the group. "Over 70% of the radio-collared sage-grouse we are monitoring use high risk areas." BARM also has identified wildfire as a major threat to sage-grouse conservation in the county. Thus, identifying measures to protect key wintering areas available to sage grouse has surfaced and is one of the group's highest priorities.

During the two day tour, the group also visited key wintering areas in Utah's West Desert where the risk of wildfire is also high. At both sites USU researchers showed the group areas of greatest concentration of wintering grouse. The timing of the tour couldn't have been better. The first stop on the tour was the site of fire that occurred just prior to the tour. The fire burned through a lek and critical wintering grounds just south of the Rose Bud area (Photo 2). The group agreed to meet later this fall to put together a plan to first protect the area and then restore the site to mitigate the risk of wildfire on greater sage-grouse in West Box Elder County.



Photo 1. USDA ARS Research Geneticist and Kochia Researcher Dr. Blair Waldron talks to the group about some of the benefits of using Forage Kochia as a fire break and green striping to protect native sagebrush habitats.