



By Michael R. Frisina, Carl L. Wambolt, Bok Sowell, Stephen J. Knapp, Mark Sullivan, and Carolyn Johnson

Maintaining habitat for sage grouse, prairie dogs and livestock requires managing resources for a balance.

The management of our native sagebrush/grassland communities, always a focal point of the ongoing debate over management of western rangelands, has a new and interesting twist in the natural resource management balancing act. Many of our important indigenous wildlife species are associated with sagebrush/grassland plant communities.

Man has devoted substantial effort to altering this extensive and important vegetative type and wildlife habitat. Sagebrush communities have been intensively grazed by livestock, intensively browsed by deer, antelope, elk and other native herbivores; and treated in a myriad of ways to kill the sagebrush, including herbicides, fire, and mechanical means. Areas that were once sagebrush/grasslands are cultivated and are currently managed as croplands or seeded pastures.

Some experts estimate we have lost half of our sagebrush grasslands to these man-generated actions. Also, many of our existing sagebrush plant communities are altered and often reduced in productivity because of the aforementioned land uses. One result has been a decline of

many of the indigenous wildlife species associated with sagebrush habitats.

Sage Grouse, Prairie Dogs Affected

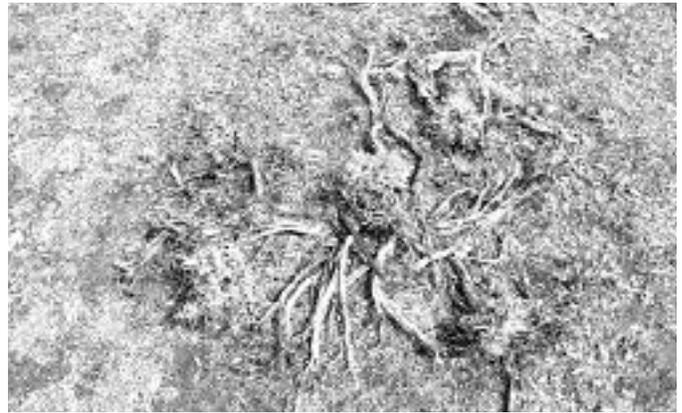
Two animals that have received particular attention the past few years are the sage grouse and the prairie dog. For simplicity, we use the generic term "prairie dog," a name applied to two distinct species—the black-tailed and white-tailed prairie dogs. Recently, due to reduced population levels throughout the West, both sage grouse and prairie dogs have been petitioned for listing under the federal Endangered Species Act.

Initially proposed for listing as threatened in 1998, the prairie dog was not listed. However, the United States Fish and Wildlife Service, the agency in charge of the listing determinations, ruled that while listing may be warranted, it was rejected to accommodate more immediate priorities. The prairie dog may eventually be listed as its status is subject to annual review by the Fish and Wildlife Service. The fate of the sage grouse listing is still pending. As a result, land managers in all arenas are paying more attention to the habitat needs of sage grouse and prairie dogs.

On both public and private lands, management efforts are being undertaken to better meet the habitat needs of these two important native wildlife species. While improved conservation of prairie dogs and sage grouse is warranted and definitely needed on western rangelands, it can also leave the land manager in a Catch-22 situation. Due to the nature of their habitat requirements, sage grouse and prairie dogs often occur within the same landscape.

Public comment on management plans often encourages maximizing habitat quality for both, with little thought or regard to the fact that sage grouse and prairie dogs require markedly different habitats. In fact, managing for one may negatively impact the other. For example, prairie dogs actively destroy sagebrush plants as part of their colony expansion process. Sage grouse require sagebrush for food and cover.

At a site on the Cowell Ranch in northeastern Montana's south Phillips County, Bureau of Land Management (BLM) wildlife biologist John Grensten documented a 362% increase in size of prairie dog towns between 1988 and 1998 (from 43 acres to 156 acres). On



Sparse vegetative cover is characteristic of prairie dog habitat as illustrated in the above photos taken at three different prairie dog colonies in Montana. The top two photos show sagebrush recently destroyed by prairie dogs on the Cowell Ranch in south Phillips County. The center two photos were taken at a prairie dog colony on BLM land in south Phillips County. Center Left: Shows zonation of prairie dog town and the effects on big sagebrush. Taken from old part of town looking into zone of present colonization by prairie dogs and the associated destruction of sage. In far distance are normal sagebrush stands. Center Right: A big sagebrush plant that was once quite large, reduced to its "last legs". Note big stems on the ground. Bottom two photos were taken on the Fort Belknap Indian Reservation (north central Montana). Bottom Left: Looking from area recently invaded by prairie dogs to older areas in distance (without any sage). Zonation of use (time wise) is again illustrated. The reverse of that shown in the Center Left photo. Bottom Right: Note the two silver sage plants. The large stem of plant on right indicates the plant was large at one time.

the Cowell Ranch prairie dog colony size is continuing to increase. The effect on sagebrush plants within the area of prairie colony expansion is illustrated above, along with similar effects at other locations in northeastern Montana.

It is not unusual for prairie dog colonies to affect large land areas. We have observed individual towns that oc-

cupied over a thousand acres and lie adjacent to other towns that impact tens of thousands of acres. On the Pine Ridge Indian Reservation in South Dakota, between 1980 and 1984 there were over 450,000 acres of prairie dog colonies known to exist. One colony in South Dakota was over 250,000 acres in size.

The current **Guidelines for Manage-**

ment of Sage Grouse Populations and Habitats emphasize the need for maintaining good herbaceous cover. In contrast, the **Working Draft Conservation Plan for Black-Tailed and White-Tailed Prairie Dogs in Montana** lists increasing grazing intensity in localized areas and/or increased stocking rates of livestock for the benefit of prairie dogs



Cattle and sage grouse sharing the same range on the Cowell Ranch in northeastern Montana. Sage grouse are seen to the right of the cow (photo by Dennis Lingohr).

as management actions to enhance prairie dog populations. This same prairie dog management plan also lists controlled burning—which is detrimental to sagebrush and sage grouse in sagebrush communities—as a management action for the benefit of prairie dogs.

Another important management consideration is meeting the needs of the livestock producer. Obviously, the habitat characteristics and vegetation cover associated with prairie dog towns leave the land in a state that is less than ideal for producing livestock (see page 18).

Management of the western range has always been a matter of balancing a wide variety of values and needs in a society that insists on changing the ground rules periodically. Whether a private landowner, public lands permittee, or natural resource professional the task has been a constant process of evaluation and re-evaluation, trying to meet diverse expectations while maintaining the integrity of rangeland soils and vegetation. This generally applies to both public and private rangelands.

Manage For Balance

Sage grouse, prairie dogs, and livestock production are valuable components of western rangelands. All three can coexist on the same landscape if people work together and recognize that success can only be achieved by managing for a balance. It may not always be possible to manage for maximum numbers of both sage grouse and prairie dogs on the same land base, but by man-

aging for a balance over large areas we can maintain important wildlife resources while meeting the needs of the western stockman.

Rotational grazing systems that allow specified pastures to be deferred and rested to meet the needs of the vegetation can at the same time provide quality habitat for sage grouse. This can be accomplished if the desired habitat mix for sage grouse is considered in the pasture design.

Prairie dogs can be sustained and tolerated by private landowners by keeping the size of their colonies within a pre-defined size. Once the prairie dog town exceeds the management objective then control may be necessary.

Montana Fish, Wildlife & Parks employs these strategies on many of its conservation easements with private landowners. These are by no means the only solutions. Currently, Montana State University is conducting research to enhance our knowledge of how black-tailed prairie dogs affect habitat and other species like the sage grouse, which are also associated with the mixed grass prairie.

By applying innovative management practices we can maintain sage grouse and prairie dogs populations across the western range on both public and private lands. The alternative is sage grouse and prairie dogs being gradually, through habitat loss, restricted to a few isolated locations set-aside for them. It is time all of us who share a passion for the western range put our personal biases aside and work together to achieve a vision where all the resources we cherish can coexist across the West.

References

- Connelly, J. W., K. P. Reese, R. A. Fischer, and W. L. Wakkinen. 2000.** Response of a sage grouse breeding population to fire in southeastern Idaho. *Wildl. Soc. Bull.* 28:90–96.
- Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun.** In Press. Guidelines for management of sage grouse populations and habitats. *Wildl. Soc. Bull.* 28.
- Grensten, J. 2000.** Personal Communications. Wildlife Biologist, BLM Malta, Mont.
- Hanson, R. 1988.** A chronology of prairie dog control operations and related developments in South Dakota. p. 121–122. *In: Proceedings of the eighth Great Plains wildlife damage control workshop.* Rapid City, South Dakota. United States Forest Service, Washington, D. C.
- Montana Prairie Dog Working Group. 2000.** Working draft conservation plan for black-tailed and white-tailed prairie dogs in Montana. Montana Fish, Wildl. & Parks, Helena. 9/12/00. 49 pages.
- Nelle, P. J., K. P. Reese, and J. W. Connelly. 2000.** Long-term effects of fire on sage grouse habitat. *J. Range. Manage.* 53:586–591.
- Sharps, J. 1988.** Politics, prairie dogs, and the sportsman. P. 117–118. *In: Eighth Great Plains damage control workshop proceedings,* April 28–30, 1987. Rapid City, South Dakota. United States Forest Service, Washington, D. C.
- Tschetter, B. J. 1988.** Estimates of South Dakota prairie dog acreages, 1987. Report No. 88.01 (unpublished). Department of Game, Fish, and Parks, Pierre, South Dakota.
- Watts, M. J. and C. L. Wambolt. 1996.** Long-term recovery of Wyoming big sagebrush after four treatments. *J. Environ. Manage.* 46:95–102.
- Welch, B. L. 1999.** Add three more to the list of big sagebrush eaters, p. 171–174. *In: E. D. McArthur, W. K. Ostler, C. L. Wambolt, (compilers), Proceedings-Symposium on shrubland ecotones.* USDA/Forest Serv. Proceed. RM RS-P-11. Fort Collins, Colo.

Photo on Page 17: Sagebrush and healthy herbaceous cover are key components to high quality sage grouse habitat (photo by Dennis Lingohr).

Michael R. Frisina, Range Coordinator, Montana Fish, Wildlife & Parks, 1330 West Gold St., Butte, Mont. 59701; Carl L. Wambolt, Professor, Dept. of Animal and Range Sciences, Montana State University, Bozeman, Mont. 59715; Bok Sowell, Associate Professor, Dept of Animal and Range Sciences, Montana State University, Bozeman, Mont 59715; Stephen J. Knapp, Habitat Bureau Chief, Montana Fish, Wildlife & Parks, Helena, Mont 59620; Mark Sullivan, Wildlife Biologist, Montana Fish, Wildlife & Parks, Malta, Mont 59538; Carolyn Johnson, Research Assistant, Dept. of Animal and Range Sciences, Montana State University, Bozeman, Mont 59715