Sage-Grouse Habitat Restoration Symposium

Nancy L. Shaw
Mike Pellant
Stephen B. Monsen

Sage-grouse (greater sage-grouse [*Centrocercus urophasianus*] and Gunnison sage-grouse [*C. minimus*]) were once abundant over a range that approximated that of sagebrush (*Artemisia* spp.) in 16 Western States and three Canadian Provinces (Aldrich 1963; Connelly and others 2000; Johnsgard 1973). Although their specific requirements vary seasonally and over their life cycle, sage-grouse are almost completely reliant upon sagebrush habitats (Connelly and others 2000; Crawford and others 2004). Some populations are migratory and require ranges exceeding 1,300 km^2 (Wambolt and others 2002).

Sage-grouse are now among the 338 or more species whose populations are considered at risk for persistence (Wisdom and others 2003) and are dependent on sagebrush ecosystems. Connelly and Braun (1997) and Braun (1998) estimated that since European settlement, the distribution of sage-grouse has been reduced by 50 percent, and breeding populations have declined by 17 to 45 percent since 1985. Four petitions for subspecies or populations and three range-wide petitions have been filed to list the greater sage-grouse under the U.S. Endangered Species Act (Kritz 2004). The Gunnison sage-grouse is currently listed as a candidate species (U.S. Fish and Wildlife Service 2000).

Sagebrush communities earlier occupied about 63 million ha in Western North America (West 1983; West and Young 2000). Degradation, loss, and fragmentation of sagebrush habitat has occurred as a result of excessive livestock grazing, conversion to agricultural lands or seedings of introduced grasses, spread of invasive exotic plants and native conifers, alterations of fire regimes, oil and gas development, and other human-caused disturbances (Crawford and others 2004; Hann and others 1997; Knick 1999; Knick and others 2003; Noss and others 1995). Many areas have been degraded beyond the threshold where recovery is likely to occur naturally (Laycock 1991; West and Young 2000). As a result, some sagebrush ecosystems are among the most imperiled in North America (Noss and Peters 1995; Noss and others 1995). Conserving and protecting extant portions of sagebrush communities, altering management to encourage passive restoration of at-risk areas, and actively restoring degraded lands incapable of recovering without intervention presents a major challenge for Western land managers. This symposium was organized to provide an overview of science and technology addressing this issue.

Invited papers discussed sagebrush systematics, communities, ecology, and distribution (Goodrich, this proceedings; Rosentreter; this proceedings). Habitat requirements and movements of sage-grouse were described to indicate specific seasonal requirements and to demonstrate the need for planning restoration at the landscape level (Braun and Connelly, this proceedings; Wisdom and others, this proceedings). Other papers examined the principles of ecological restoration (Roundy, this proceedings) and native plant materials available for use on degraded sagebrush rangelands (Jones and Larson, this proceedings; Walker and Shaw, this proceedings). Additional papers described techniques for reestablishing sagebrush and understory species and managing woody vegetation (Shaw and others; Fairchild and others; Lambert; Lysne; Pellant; all in this proceedings).

Sixteen posters added depth to the range of topics discussed during the meeting. Two of these, included here, address wildlife-sagebrush relationships (Hampton, this proceedings; Wambolt, this proceedings). A 2-day field tour focused on successes and failures of local revegetation efforts and concluded with a demonstration of restoration equipment. Although the challenge of restoring millions of acres of sage-grouse habitat is formidable, the science and practical approaches presented during the symposium provided attendees with an overview of the status of the sagebrush ecosystem, sage-grouse habitat requirements, and the potential for restoring those habitats.

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Nancy L. Shaw is Research Botanist at the U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Boise, ID 83702. Mike Pellant is Great Basin Restoration Initiative Coordinator, U.S. Department of the Interior, Bureau of Land Management, Nevada State Office, Boise, ID 83709. Stephen B. Monsen is Botanist (retired) at the U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Provo, UT 84606.

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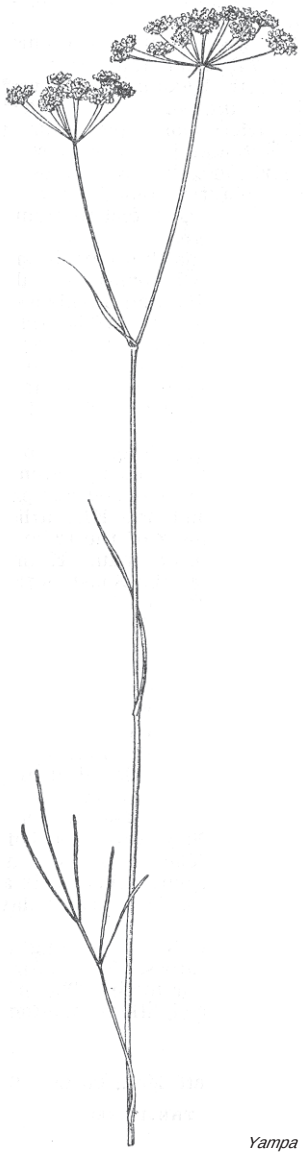

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