

Habitat Needs and Development for Sharp-tailed Grouse

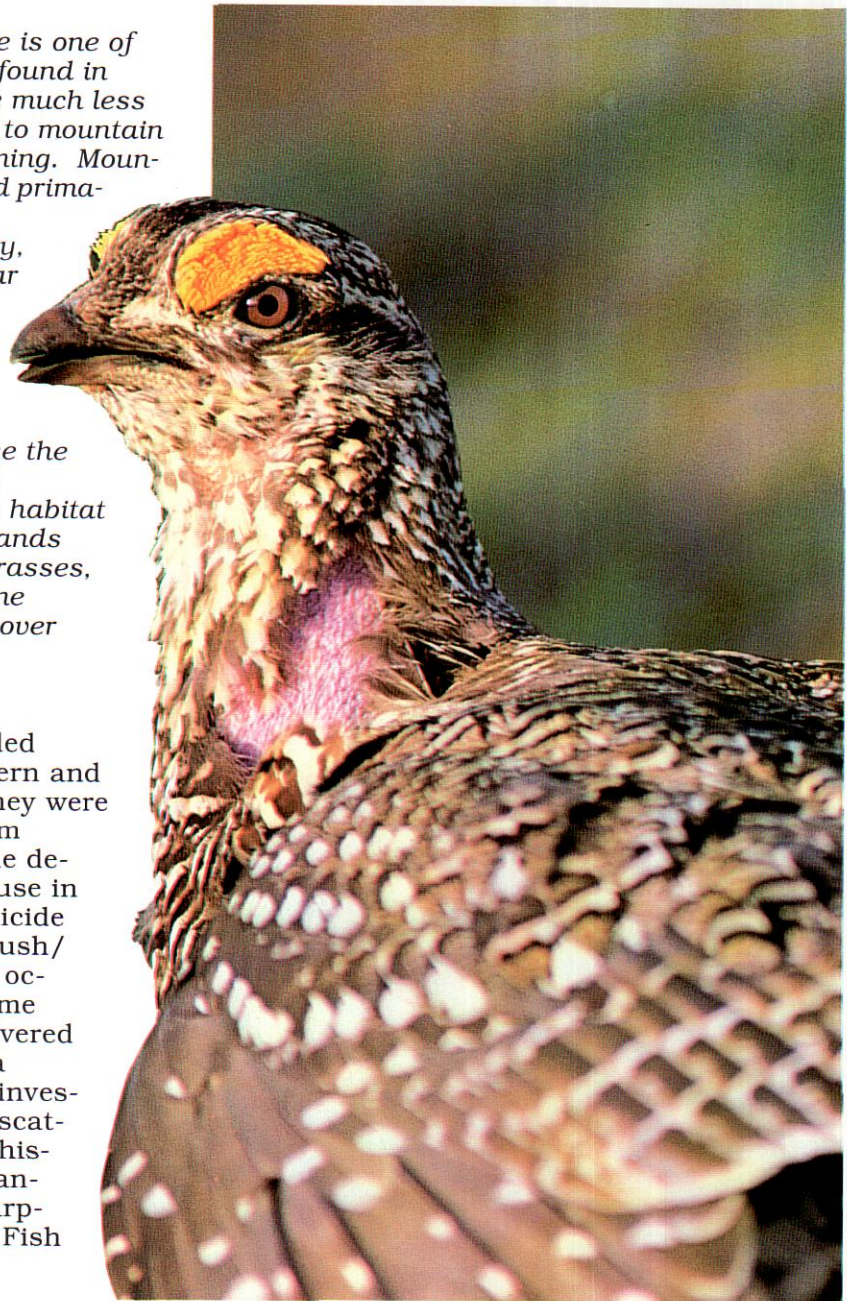
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The Columbian sharp-tailed grouse is one of two sharp-tailed grouse subspecies found in Wyoming. Columbian sharptails are much less common and appear to be restricted to mountain shrub habitats in southcentral Wyoming. Mountain shrub communities are composed primarily of sagebrush but also contain serviceberry, chokecherry, snowberry, bitterbrush, and rabbitbrush. The far more abundant plains subspecies occurs in the eastern and northern parts of the state. Plains sharptails seem to be better adapted to agricultural areas than Columbian sharp-tailed grouse, perhaps because the plains subspecies is more grassland adapted. Plains sharp-tailed grouse habitat is typically considered native grasslands composed of wheatgrasses, needlegrasses, grama grass, and bluestem with some shrubby areas to serve as roosting cover and winter habitat.

Distribution

Historically, Columbian sharp-tailed grouse were found throughout western and southwestern Wyoming. By 1979, they were believed to have been extirpated from Wyoming. The principal cause of the decline of Columbian sharp-tailed grouse in the area is unknown; however, herbicide treatments of large blocks of sagebrush/grass and mountain shrub habitats occurred in the area. But in 1980, some sharp-tailed grouse wings were recovered from wing barrels in the Savery area southwest of Rawlins. Subsequent investigations revealed 11 sharptail leks scattered near Savery by 1987, but five historic leks appeared to have been abandoned. In 1989, the Columbian sharp-tailed grouse was added to the U.S. Fish & Wildlife Service's candidate



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species list as a C2 species. This designation means that more information is needed to determine whether the Columbian sharptail will be dropped from the list or listed as a threatened or endangered species.

Lek Characteristics And Mating Behavior

The focal point of sharp-tailed grouse breeding is the dancing ground or lek. Many dancing grounds are used year after year by sharp-tailed grouse, with others, known as satellite leks, used on a temporary basis. Dancing grounds are typically located on benches, ridges, or slightly elevated valley areas. Compared to sage grouse leks, sharp-tailed grouse dancing grounds are small, typically less than one-quarter acre in size. Shrub cover on dancing grounds used by Columbian sharptails may vary from two percent to as much as 23 percent. Plains sharptail dancing grounds usually lack shrub cover but normally contain some residual vegetation. Shrub cover or residual vegetation probably functions as security cover on the dancing ground. Dancing grounds generally have more kinds of forbs and grasses on them than sage grouse strutting grounds.

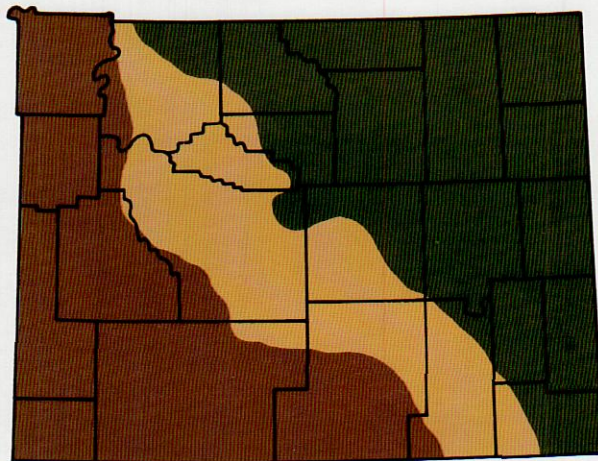
Male sharp-tailed grouse first appear at dancing grounds from mid- to late March through early June to stake out territories, display, and mate. Males dance in both the morning and evening. Yearling males frequently try to establish territories at the edge of the lek, but they normally visit several leks before successfully establishing a territory. Adult males typically return to the same lek where they first established a territory. Dancing sounds include "cooing," "gobbling," and tail rattling. Cooing and gobbling sounds

are produced with the aid of lavender-colored air sacs on the neck. Tail rattling is produced by rapid vibration of the tail feathers. Sounds produced by dancing sharp-tailed grouse are audible for a mile. Similar to sage grouse, the dominant male sharptail does most of the breeding.

Males also attend leks in the fall beginning in late August and sporadically throughout the winter, while females attend dancing grounds only in the spring to breed. Some researchers have suggested that fall attendance allows juvenile males to locate the lek. Some may even establish lek territories for breeding the following spring.

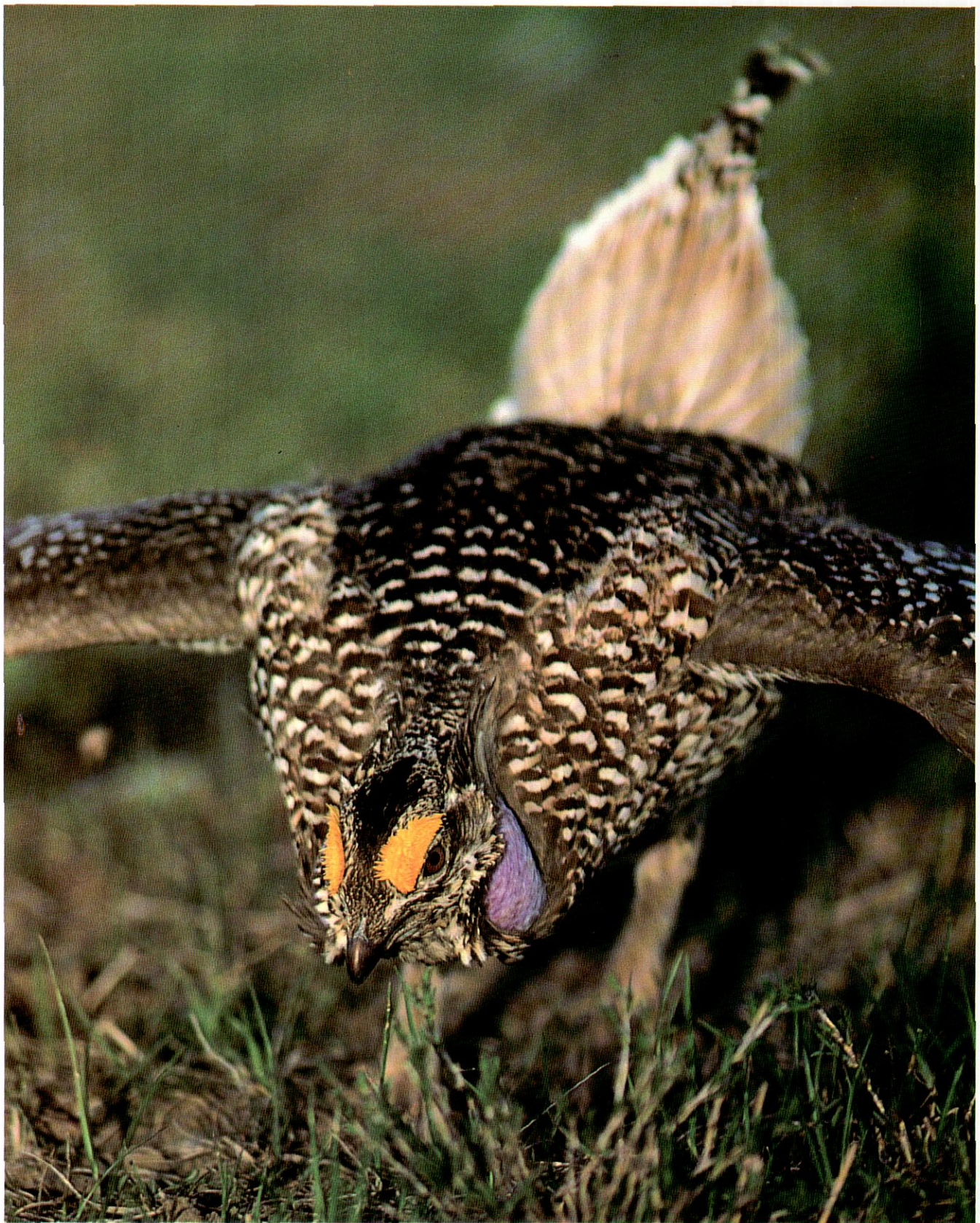
Females arrive on the lek from two to five weeks after males begin dancing. Breeding typically occurs from mid- to late April. Generally, most of the mating is completed by the first week of May. However, if the first clutch is destroyed, the female may breed again and attempt to reneest as late as early June. The female takes about two weeks to complete a clutch of nine to 13 eggs, which are laid in "scrape" nests. A scrape nest is a slight depression that the female makes in the soil. Frequently, a nest cup formed with vegetation is lacking. Columbian sharptails nest under shrubs such as snowberry or sagebrush, whereas plains sharptails generally nest between or in clumps of tall grass. In both instances, the material hides the nest from predators. Incubation begins upon completion of the clutch and lasts 23 to 24 days.

Juveniles of both subspecies are able to leave the nest with the hen shortly after hatching. They develop the ability to fly short distances in two weeks. Broods remain together for most of the summer but separate by mid-August. In the fall, some juvenile



Historic distribution (left) and present distribution (right) of sharp-tailed grouse in Wyoming.

■ Plains sharp-tailed grouse ■ Columbian sharp-tailed grouse ■ Possible area of overlap between subspecies



Male Columbian sharptail displaying on lek.

males begin attending leks with adult males, whereas others may join small groups of mature and immature females.

Brood Habitat

Unaltered mountain shrub communities contain a variety of forbs and insects. Insects (beetles, ants, larvae, and grasshoppers) are critical to juvenile grouse survival during the first few weeks of life. Insects provide a protein-rich diet necessary for rapid growth and proper development. After the first few weeks, juvenile diets include more forbs and grasses. Shrubs provide cover necessary for both loafing and escape from mammalian and avian predators. Shade provided by shrubs also allows forbs and grasses to remain more succulent in summer and early fall than areas without shrubs. Broods frequently use the edges of small and large openings but avoid the centers of openings greater than 150 feet wide. Ideal shrub cover in Columbian sharptail brood habitat varies from 15 percent to 40 percent and is composed of sagebrush (10 percent), snowberry (8+ percent), bitterbrush (3+ percent), and serviceberry/chokecherry (2+ percent). The more open areas are used for foraging, whereas the areas with heavy shrub cover are used for resting/roosting.

Plains sharptails appear to rear broods in areas of low shrub cover (zero to 15 percent) and high grass cover for foraging. Plains sharptails do use hay and grain fields until they are harvested. Similar to Columbian sharptails, they usually seek brushy areas for resting and roosting.

Winter Habitat

In the late fall and throughout the winter, sharp-tailed grouse diets shift from insects and forbs to shrub fruits (serviceberries, chokecherries, and rose hips) and the buds of shrubs and trees (aspen, cottonwood, willow,



snowberry, serviceberry, and hawthorn). Columbian sharptails have been observed on wind-swept ridges, probably foraging for seeds and obtaining grit. Typically, the lee sides of these ridges contain pockets of shrubs and trees used for roosting and food. Plains sharptails use brushy draws and wooded areas for winter habitat. Shrub cover in sharptail winter habitat typically exceeds

60 percent. Both types of sharp-tailed grouse can burrow under the snow during bitter cold snaps to avoid freezing if a thick crust has not formed on the snow surface.

Habitat Management

In general, research is lacking on habitat improvements to benefit sharp-tailed grouse. However, rangeland improvements which reduce shrub cover below 20 percent and reduce plant diversity generally impair Columbian sharptail habitat. In areas where total shrub cover exceeds 40 percent, moderate shrub cover reduction in nesting and brood-rearing habitat would benefit Columbian sharptails. However, dense patches of fruit- and bud-producing shrubs (60+ percent or more) in winter habitat are essential and should not be reduced. Ideally, habitat treatments should be conducted in small patches surrounded by larger untreated areas. Columbian sharptail broods appear to avoid grassy openings greater than 150 feet across; however, this constraint does not apply to plains sharptails. Treatments that remove snowberry, serviceberry, chokecherry, rose, and forbs will adversely impact sharp-tailed grouse and should be avoided.

The timing and size of treatments (mechanical, chemical, or prescribed burn) to decrease shrub cover should be carefully considered. When possible, herbicides like 2,4-D should be sprayed before forbs emerge in the spring or after forb dormancy in the fall. Mechanical

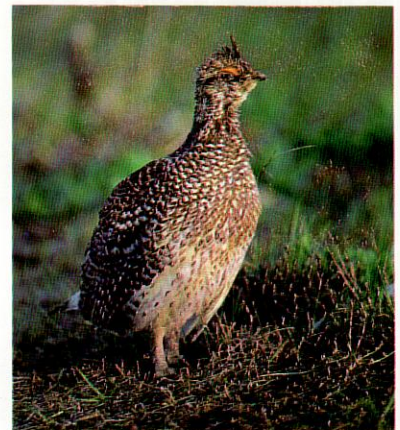
treatments such as chaining should be timed to avoid spring courtship and nesting periods. Prescribed burns should be small and designed to avoid burning the entire lek area. Mechanical treatment is recommended over both herbicide spraying or prescribed fire because size and configuration of the treated area can be better controlled. Regardless of the treatment method, the area treated should be less than one-sixth of the nesting and one-eighth the wintering habitat near a lek. Treatments around any lek should be scheduled at least five years apart to maintain habitat diversity. Treatments should consist of small patches or narrow strips (less

Sharptails use a variety of cover types through the year. Their spring leks (below) are generally established on low rises with relatively short grass so that their displays are visible to other birds on the lek. In the winter (opposite page), the birds use shrubs and small trees extensively, both for roosting sites and food.



than 150 feet wide) to minimize detrimental impacts. Large block treatments should be avoided. Nesting and brood-rearing habitat should not be treated until shrub cover exceeds 40 percent, whereas winter habitat should not be treated until shrub cover exceeds 70 percent, or 70 percent of the shrubs are decadent.

Following shrub treatment, the area should be seeded to native grasses (bluebunch wheatgrass, western wheatgrass, bluegrass, grama grass, needle grass, and bluestem). Forbs (sulphur buckwheat, balsamroot, sticky geranium, wild flax, prickly or Chinese lettuce, clover, salsify, knotweed, and dandelion)



The sharptail is generally considered a bird of the prairie edge, occupying a habitat niche between the prairie chickens and the forest-loving ruffed grouse. The Columbian subspecies (right) has adapted to the edge between sagebrush grasslands and the mountain shrub communities of the western foothills.

are commonly eaten by sharptails and should be included in seed mixes. Seed mixes could also contain crested wheatgrass, alfalfa, yellow sweetclover, sainfoin, and small burnet; however, crested wheatgrass and alfalfa should be kept to less than 10 percent of the seed mix. A high proportion of crested wheatgrass in the seed mix could lead to a reduction of the desired forbs, whereas a high concentration of alfalfa could cause livestock bloating. In Columbian sharptail habitat, forbs should compose 30 percent to 35 percent of the ground cover, whereas grasses could compose up to 45 percent to 50 percent ground cover. Because plains sharptails are more of a grassland-adapted grouse species, they prefer fewer forbs (15 percent to 25 percent) and more grasses (60 percent to 65 percent).

To rehabilitate large areas burned by wildfires, grasses and forbs indigenous to the area should be used. Non-sprouting shrubs that were removed should be replaced. Recommended woody species include snowberry, serviceberry, chokecherry, rose, willow, hawthorn, aspen, alder, bitterbrush, and currant. Shrubs should not be planted in straight rows but in clumps or patches dominated by one or two species and containing at least three species. Russian olive and skunkbrush sumac have been used to en-



hance sharptail habitat in Idaho and Nebraska, and may be suitable for Wyoming. In the Curlew National Grasslands, windrows of Russian olive at least 100 feet wide have been planted to provide winter habitat for sharp-tailed grouse.

The presence of water does not appear to be a factor limiting the sharp-tailed grouse population in the Savery area.

Therefore, the installation of guzzlers may not benefit sharptails to the same extent as sage grouse. Although sharp-tailed grouse have been observed in riparian areas, they do not seem to have a strong attraction to riparian habitats as do sage grouse in the late summer and early fall. However, research in Washington, Idaho, and Wyoming has indicated riparian areas do provide important winter habitat.

More detailed information on sharp-tailed grouse, their behavior and habitat is contained in *The Grouse of the World*, by Paul A. Johnsgard, published in 1983 by the University of Nebraska Press.

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This publication is one in a series of habitat extension bulletins produced by the Wyoming Game and Fish Department. Call 1-800-842-1934 for additional information or assistance.

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