

Sharp-tailed Grouse, *columbianus* Subspecies

Tympanuchus phasianellus columbianus

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Disclaimer: The following document was compiled based on a review of information currently available for this species as of November 25, 2005. This document can be used to assist with the identification of this species and to support the development of management recommendations as they relate to forestry activities. For more information on this species, please refer to the reference section or consult with a Species at Risk specialist.

Description

The Sharp-tailed Grouse, also known as the “Columbian” Sharp-tailed Grouse is extensively patterned with white, buffy, tawny brown, and blackish barring and spotting. White spotting is conspicuous on the wings, and the relative amount of white increases towards the breast and abdomen. The breast and sides are white and buff, with several V-shaped, brown markings that fade towards the abdomen, while the back is dark brown. The tail is wedge shaped, with a central pair of feathers extending far beyond the others. This central pair of feathers is patterned white brown and black, and the other feathers are mostly white. Sharp-tailed grouse have dusty-brown legs with white feathers to the toes¹. These feathers and toe pectinations serve as a snowshoe, helping the bird walk on snow in winter. During displays, males can be identified by pink air sacs on either side of the neck. Adults are between 42 and 47 cm in length and weigh between 596 and 1031 grams². In flight the white underparts are obvious, as is their whitish and elongated tail. [Click here](#) for more information on this species including a recording of its vocalization.



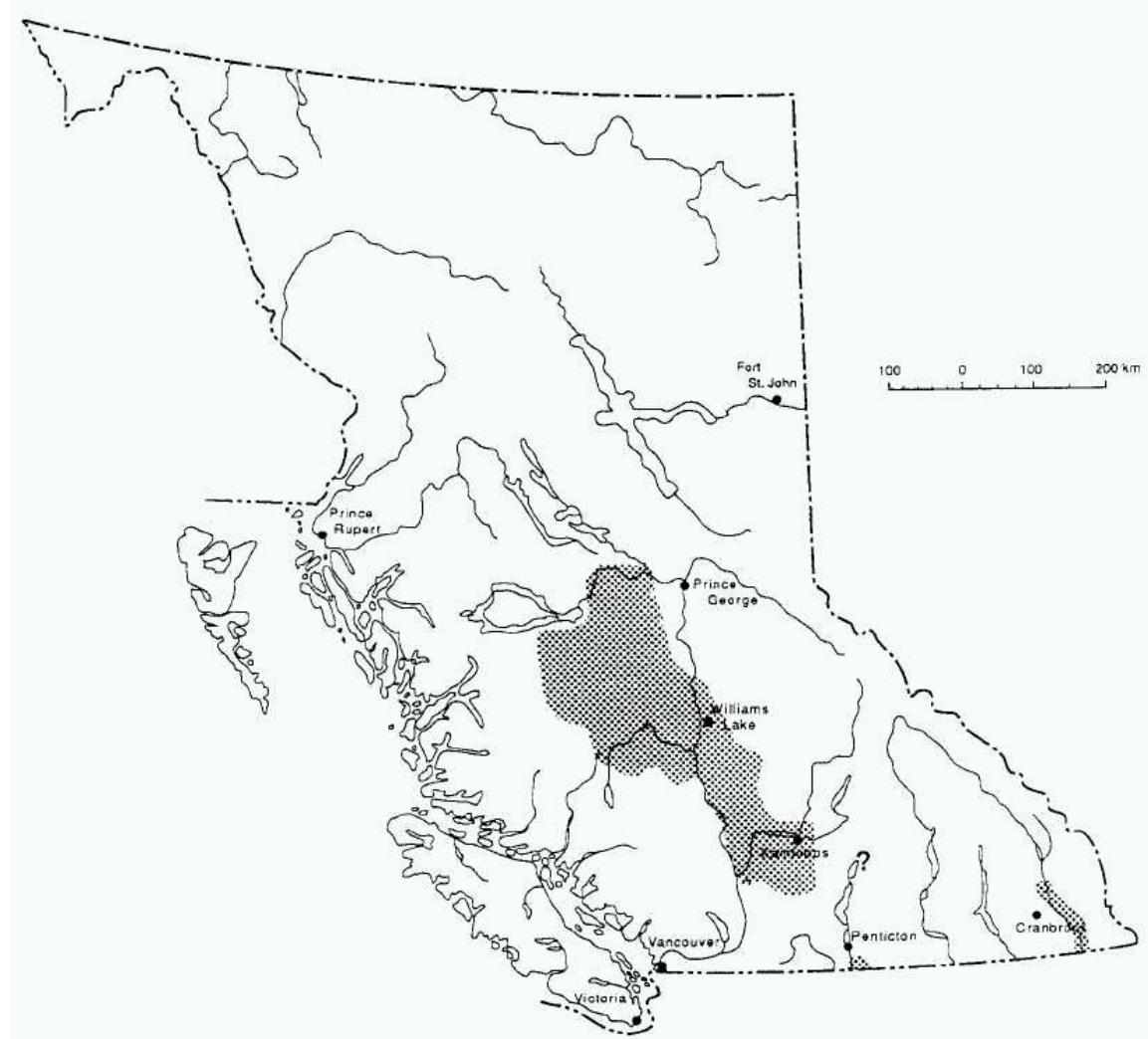
Male Sharp-tailed Grouse. Photo credit: Scott Nielsen



Photo courtesy of John Cassady³

Distribution

In British Columbia, viable populations of “Columbian” Sharp-tailed Grouse now exist from the Fraser Basin Ecoregion north of Prince George to the Southern Thompson Upland Ecorection south of Merritt. There is a small population of uncertain future in the East Kootenay Trench Ecorection, and the grouse probably no longer exist as breeding populations in the Okanagan Basin ecorections, Okanagan Range Ecoregion, or Okanagan Highland Ecoregion. However, wintering sharptails have been reported recently at the north end of Okanagan Lake near Vernon and in the Southern Okanagan Highland Ecorection, north of the U.S. border above Molson⁴.



Distribution of “Columbian” Sharp-tailed Grouse in BC⁴

Forest Districts^{5,6}

- Arrow Boundary Forest District (DAB)
- Central Cariboo Forest District (DCC)
- Chilcotin Forest District (DCH)
- **Cascades Forest District (DCS)**

- **Kamloops Forest District (DKA)**
- **100 Mile House Forest District (DMH)**
- Nadina Forest District (DND)
- Okanagan Shuswap Forest District (DOS)
- Quesnel Forest District (DQU)
- Rocky Mountain Forest District (DRM)
- Vanderhoof Forest District (DVA)

***Ecoprovinces and ecoregions*⁶**

- CEI: BUB, CAB, CCR, CHP, FRB, NAU, QUL
- SBI: BAU, NEL
- SIM: EKT, UCV
- SOI: GUU, NIB, NOB, NOH, NTU, OKR, PAR, SHB, SOB, SOH, STU, THB, TRU

***Biogeoclimatic Units*^{5,6}**

- BG - Bunchgrass - xh1, xh2, xh3, xw, xw1, xw2
- IIDF - Interior Douglas-fir - dk1, dk2, dk3, dk4, dm1, dm2, mw1, mw2, mw2a, un, xh1, xh1a, xh2, xh2a, xh2b, xm, xw, xw2
- MS - Montane Spruce
- PP - Ponderosa Pine - dh1, dh2, xh1, xh1a, xh2, xh2a
- SBS - Sub-Boreal Spruce - dk, dw2, dw3, mh
- SBPS - Sub-Boreal Pine -- Spruce - xc

Elevation

Sharp-tailed Grouse are found from 275 to 1,350 m^{6,7}.

Map of Known Locations

Sharp-tailed Grouse occurrence data is considered sensitive by the Conservation Data Centre (CDC). Therefore, known location data for this species is not available to the public. Please contact the CDC to request this data at:

Phone: (250) 356-0928
Fax: (250) 387-2733

Biology

Sharptails are not considered migratory, although earlier in this century, large scale movements between breeding and winter habitats were recorded in the northern parts of the Sharptail range⁴.

Reproduction

Males employ elaborate courtship displays in the spring to attract females to central communal display grounds called leks. Leks are traditional and may be used for many years if habitat remains unchanged and disturbance by humans is minimized (males may tolerate most disturbances but females avoid disturbed leks). Males remain near leks between April and May, and again during October to establish territories⁴. Males can be heard vocalizing from leks for a distance of up to 1.5 km⁶.

After mating ends in June, females move to nesting areas with a relatively dense cover of shrubs and grasses. Females lay a first clutch at 11 months of age and produce annually afterwards⁴. Clutches as high as 13 have been recorded in British Columbia, but 9–12 eggs is the most common⁸. Renesting is common if the nest is destroyed⁶. The incubation period lasts 23–24 days. After hatching chicks eat mostly insects and remain with their mothers in broods for 6–8 weeks¹. Nests have been located within 100 m of lek and >3 km from lek sites but most are within 1.6 km of a lek⁶.

Foraging

Columbian Sharp-tailed Grouse eat mostly grasses, forbs, and seeds in the spring and summer, and supplement their diet with insects in fall. There is no evidence they seek free water, instead likely meeting their water requirements from the food that they ingest¹. Winter foods consist of the buds and catkins of deciduous trees or shrubs, and berries. Riparian stands of scrub birch (*Betula glandulosa*) and water birch (*Betula occidentalis*) are particularly important in British Columbia, although birds are also known to feed on the buds of aspen (*Populus tremuloides*), paper birch (*Betula papyrifera*) and willow (*Salix* spp.)^{4,8}.

Habitat

Sharptails are birds of brushy grasslands and the Columbian Sharp-tailed Grouse occupies this typical habitat in British Columbia. Deciduous trees and shrubs are essential habitat components of Columbian Sharp-tailed Grouse habitat in British Columbia, and are no less important than grass or herbaceous cover in supporting a population⁴.

Sharp-tailed Grouse prefer gentle topography; steep slopes are avoided except as local feeding areas. Sharptails are seldom found in canyons, even though preferred species of trees and shrubs may not be found there⁴.

Despite the ability for long flight, they may have relatively limited home ranges where year-round requirements are met within a small area. In British Columbia, year round home ranges average 4.9 km².

Important Habitats and Habitat Features

“Columbian” Sharp-tailed Grouse in British Columbia occupy two types of grassland habitats⁴:

- **Climax grasslands** of the Ponderosa Pine and Bunchgrass biogeoclimatic zones, and grassland phases of the Interior Douglas-fir biogeoclimatic zone. Virtually all of these grasslands are grazed by cattle and, over wide areas, grazing has been heavy enough to reduce nesting cover to below optimum⁴;
- **Seral grasslands** resulting from fire or harvesting of lodge pole pine stands of the Interior Douglas fir, Sub-boreal Pine-Spruce and Sub-boreal Spruce biogeoclimatic zones. These grasslands are short-lived as such, being rapidly succeeded by stands of lodge pole pine. The most abundant grass species is pine grass (*Calamagrostis rubescens*), a species only palatable to cattle for a short period each growing season. Consequently, grass cover is seldom reduced by grazing to the extent that it would affect nesting success. Common shrubs are prickly rose (*Rosa acicularis*), soopolallie (*Shepherdia canadensis*), common juniper (*Juniper communis*) and kinnikinnick (*Arctostaphylos uva-ursi*), all of which are seasonal food sources^{4,6}.

Nesting

Sharp-tailed Grouse are ground-nesters, with nests usually being found in dense cover, although vegetation making up that cover may vary considerably⁴. In British Columbia, one study found that half of identified nests were in open grasslands while the rest were under sparse canopies of lodge pole pine, ponderosa pine, Douglas-fir, and trembling aspen⁹. Nests have been detected 50-1,600 meters from leks, with 75 percent within 1 kilometer of a lek site. High-quality nesting habitat is provided by structural diversity, including stand of grasses, shrubs, and forbs. Relatively dense residual herbaceous vegetation that provides good visual obstruction to a height of 15-30 centimeters is important nesting habitat⁶.

Summer (brood)

Areas with an abundance of ground dwelling insects are vital for chicks. Shrub habitats are preferred for raising broods in some areas while grass/forb habitats were used elsewhere. Data on preferred brood habitats for Sharp-tailed Grouse in British Columbia is limited⁶.

Fall

Berries are important both for grassland and clearcut populations. Disturbed areas such as roadsides and landings with abundant greens such as clovers, dandelion, and yarrow are heavily used. Lodgepole pine stands with developed or developing canopies have heavier crops of kinnikinnick than new clearcuts, especially in dry situations. Also in the first snowfalls of winter, locating berries and moving about in the understorey of those stands is facilitated by snow interception of the canopy⁶.

Winter

Riparian areas with abundant deciduous shrub and tree species provide berries, palatable catkins, and twigs are important winter feeding habitat. Shrub fens and shrub carrs with low growing scrub birch provide wintering habitats for clearcut populations. Snow roosting areas are usually found near deciduous/ riparian and shrub cover⁶.

Conservation and Management

Status⁵

Provincial Status: S2S3 (Provincially Imperiled/Vulnerable)
BC List: Blue (Special Concern)

Threats

Many grassland and riparian woodland habitats used by Sharp-tailed Grouse have been lost to urban and agricultural development. Livestock over-grazing has been implicated for a loss of nesting cover, and small remnant populations are susceptible to over-hunting and accidental killing⁴. Cattle in riparian zones can impact shrubs, a winter food source for Sharp-tailed Grouse⁸. While males are tolerant of human disturbance, females avoid disturbed leks, thus affecting overall reproductive success. Females on their nests are also susceptible to disturbance⁸.

Several common silvicultural practices have the potential to reduce populations over the long term⁶:

- Planting xeric, treeless sites can reduce openness and contributes little to fibre production from the forest.

- Deep trenching to improve seedling survival may impede movement of chicks, making it difficult for them to forage and increasing their vulnerability to predation in the first few days after leaving the nest.
- Plantations are often thinned and weeded after establishment removing deciduous species such as willow, aspen, and birch that are winter food sources.
- Use of insecticides reduces the amount of insects available to chicks during critical early stages of development.

Management Recommendations

Consult with a Registered Professional Biologist prior to implementing the following management recommendations because certain situations may require custom solutions based on specific site characteristics.

- Budget permitting, develop a habitat model to help identify high value habitat found within your areas of interest. The complexity of the model, and therefore its accuracy, will be dependent on budgetary constraints.
- Identify locations where this species is known to occur: if available, obtain occurrence data from the Conservation Data Centre (<http://srmwww.gov.bc.ca/cdc/>) and if necessary conduct surveys to confirm presence or absence of this species.

In areas where this species is identified:

- For leks located in grasslands, establish a 400 m buffer zone roughly centred on the lek¹⁰. Where possible, include nearby riparian areas, deciduous copses, shrub patches and tall grass areas within the buffer.
- Do not disturb active nest sites, leks or surrounding habitat from April 1 to May 31 (a 1.5-2 km buffer is recommended^{6,11}). Nest sites are located on the ground often under sparse canopies of lodge pole pine, ponderosa pine, Douglas-fir, and trembling aspen⁸. Leks tend to be located on open, dry, elevated sites.
- Permanently deactivate or rehabilitate roads after use that occur near nest sites or leks. If this is not feasible, temporarily close roads that pass within 100m of an active lek from April 1 to May 31⁶.
- Maintain natural openings and a continued supply of early seral habitat near leks and nesting sites⁶.
- Avoid deep trenching (>20 cm) and other mechanical site preparation that result in deep depressions and loss of deciduous species. Where necessary, patch scarification methods are preferred over disc trenching⁶.
- Retain aspen, birch, and willow when thinning and weeding⁶.
- Maintain deciduous species in riparian areas adjacent to leks and nesting sites⁶.

- Do not use pesticides or insecticides⁶.
- The location of active nests or lek sites should be provided to the Ministry of Environment.

References

- ¹ Banerjee, R. 2004. Columbian Sharp-tailed Grouse (*Tympanuchus phasianellus columbianus*). Petition to the U.S. Fish and Wildlife Service to List the Columbian Sharp-tailed Grouse as an Endangered or Threatened Species Under the Endangered Species Act, 16 U.S.C. 1531 et Seq. (1973 as amended), and to Designate Critical Habitat. Forest Guardians.
- ² Evans, K. E. 1968. Characteristics and habitat requirements of the greater prairie-chicken and sharp-tailed grouse: a review of the literature. USDA Forest Service Conserv. Res. Rep. 12. 31pp.
- ³ Cassady, J. Website: <http://www.jkcassady.com/gallery/stgr.htm>.
- ⁴ Ritcey, R. 1995. Status of the Sharp-tailed Grouse in British Columbia. B.C. Minist. Environ., Lands and Parks, Wildl. Branch. Working Rep. WR-70. 52pp.
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- ⁶ Ritcey, R.W. and D. Jury. 2004. Columbian Sharp-tailed Grouse. Accounts and Measures for Managing Identified Wildlife – Accounts V. 2004. Website: <http://wlapwww.gov.bc.ca/wld/documents/identified/iwABNLC13033.pdf>
- ⁷ Tirhi, M.J. and D.W. Hays. 1997. Washington State Status for the Sharp-tailed Grouse. Washington Department of Fish and Wildlife.
- ⁸ Fraser, D.F., W.L. Harper, S.G. Cannings, and J.M. Cooper. 1999. Rare birds of British Columbia. Wildl. Branch and Resour. Inv. Branch, B.C. Minist. Environ., Lands and Parks, Victoria, BC. 244pp.
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- ¹⁰ Ministry of Water, Land and Air Protection, Biodiversity Branch. 2004. Wildlife Habitat Features. Summary of Management Guidelines. 117 pp.
- ¹¹ Montana Partners in Flight. Columbian Sharp-tailed Grouse.