

# *Managing Your Forest for Ruffed Grouse*

Written by Tristan Nelson

## ➤ Life History

Ruffed grouse have many nicknames such as woods hen, partridge, and woods chicken, many of which attempt to describe the appearance of the quirky little birds. Ruffed grouse are the most widely distributed game bird in North America, a medium sized (typically 16-20 inches tall and weigh 1-1.5 pounds) forest bird that loosely resembles a chicken in shape. It is related to other wild birds such as the turkey, quail, pheasant, and ptarmigan.

Some of the most recognizable features of the ruffed grouse are its tail fan and “ruffs” which are feathers on their necks that puff out when the male grouse displays for females during the mating season. Tail fans and ruffs occur in two primary color phases, black and reddish-brown. Ruffed grouse are also known for their early spring ritual, known as “drumming,” which consists of the male grouse climbing atop a fallen log and using his wings to force air against his body, creating a distinctive hollow thumping or drumming sound. Used primarily as a method of marking territory and attracting females, most drumming takes place during the spring but can be heard year-round.

Ruffed grouse are native to Minnesota and occur across a substantial portion of the state (see range map on next page). They are often found in young forest stands but will utilize a wide range of forest habitats. Their main predators are birds of prey such as hawks and owls, along with mammals such as coyotes, foxes, bobcats, and humans. Grouse populations tend to run along approximately 10-year cycles, with populations experiencing highs and lows during that time due to many environmental factors both living and non-living.



Photo: Roland Jordahl

**"The throbbing heart of awakening spring."**

- Ornithologist Arthur Cleveland Bent on ruffed grouse drumming.



## ➤ **Reproduction and Social Habits**

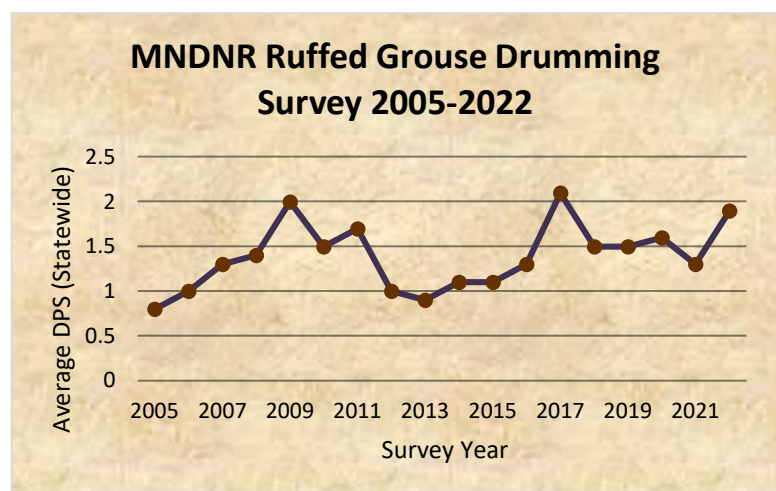
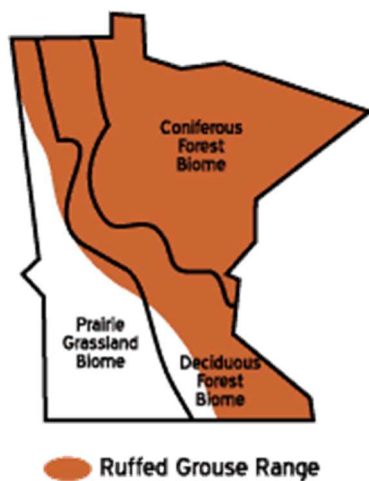
Ruffed grouse are known to be mostly solitary creatures, spending most of their adult life alone except during the mating season. They are rarely found in groups unless concentrated at a major food source. During the spring mating season, a male will claim a drumming platform, usually a downed log, boulder, or other similar raised area, as his drumming spot and will drum until he attracts a female (see picture of a male grouse drumming below). Males and females interact for a matter of minutes as they perform courtship and mating, then go their separate ways. Females will then find a suitable nest site on the forest floor and lay 10-14 eggs. Once the chicks hatch, they will stay with their mother until the fall when they disperse to claim their own territory. Grouse have an average lifespan of about two years and often spend their adult life in an area of forty acres or less, with males and females having normal home ranges of 5-6 and 5-25 acres, respectively.



## ➤ **History and Population**

Hunting for ruffed grouse is an extremely popular pastime in Minnesota, with a typical annual hunter harvest of between 200,000 and 500,000 birds. Grouse hunting in Minnesota is among the best of the best, as it consistently posts the highest annual hunter harvest and boasts one of the largest ruffed grouse populations in the United States. The state's population is concentrated in northeastern and north-central Minnesota (see range map) but extends across a sizable portion of the state. Grouse in these areas are commonly found in areas of younger forest, with young aspen being a particular favorite. They can also be commonly found in older forest cover types and along the sides of rural gravel roads as they search for food and small stones (also known as grit) to keep in a part of their stomach called the gizzard to help them grind up and digest food since grouse do not have teeth. The graph

below shows the cyclic nature of ruffed grouse populations in Minnesota, and you can see that it follows a roughly 10-year pattern. The graph was created using data from the annual Minnesota DNR spring grouse drumming surveys which are used to assess the relative abundance of ruffed grouse. For more specific information on the sampling methods used or to read the full reports please visit the Minnesota DNR website at <https://www.dnr.state.mn.us/hunting/grouse/reports.html>.



## ➤ Diseases and Stressors

Although ruffed grouse are very resilient and resourceful birds, they still face their fair share of challenges in nature. Ruffed grouse are favorite prey of a wide variety of other wildlife. Nest predators include skunks, snakes, and raccoons, while predators of juvenile and adult grouse include foxes, fishers, bobcats, goshawks, great horned owls, and humans. Ruffed grouse rely heavily on thick cover such as young aspen thickets to hide from and evade these predators. Ruffed grouse are also highly susceptible to West Nile Virus, a mosquito borne disease first discovered in the United States in 1999, and a connection has been made between rising mosquito populations and declining



Photo: Roland Jordahl

ruffed grouse populations. Across their range, ruffed grouse have also suffered from habitat loss as a result of wildfire suppression and the reduction of timber harvests, which has allowed many forests to become too mature to provide suitable grouse habitat. If you wish to keep ruffed grouse on your property, active management is a very important tool. Please see the next page for habitat management information.

## ➤ Diet

Available food for ruffed grouse can vary significantly throughout the year depending on environmental conditions. Adult ruffed grouse primarily feed on plant material but are known as omnivores because they will also occasionally eat insects, snakes, frogs, and salamanders. The summer diet of adults typically consists of tender plant materials such as new buds along with fruits, such as berries and acorns, and insects. The diet of a chick primarily consists of insects. During the winter, ruffed grouse diets shift to one of primarily buds, twigs, and catkins of trees such as aspen, birch, ironwood, hazel, and cherry. Also known to be frequent winter visitors of birdfeeders and crabapple trees holding their fruit late into the year, ruffed grouse are skilled foragers. Young aspen stands create excellent food and cover sources for ruffed grouse and provide their most important year-around source of food. A few of their favorite foods are shown below.



Photo: MNDNR

Quaking aspen  
(*Populus tremuloides*)  
catkins



Photo: Glen Arboretum (TU)

Ironwood (*Ostrya virginiana*)  
overwintering catkins



Photo: Best Herbal Health

Wild strawberry  
(*Fragaria virginiana*)

## ➤ Habitat Management

Ruffed grouse are best suited to thrive in a dynamic forest subject to periodic disturbance such as timber harvest, wildfire, and storms. Ideal ruffed grouse habitat includes food and cover within a short distance. Patches of thick young trees provide great cover from predators. Older trees provide food such as catkins, buds, and fruits, along with insects. Conifers, brush, and deciduous trees that hold their leaves into the winter provide thermal cover when there is not enough snow for ruffed grouse to burrow in to keep warm (also known as snow roosting). Three common management strategies exist for managing forests for ruffed grouse in Minnesota: aspen management, oak management, and mixed conifer forest management. Recommendations for each management strategy are outlined below. Getting a forest stewardship plan will provide best management practices for your land and could qualify you for cost share or incentive programs. Contact your local SWCD, NRCS, or DNR office for more information.



**Aspen Management:** Aspen forests have the highest ruffed grouse production potential and is a quite common forest type in northern St. Louis County. Management normally focuses on creating 3-4 age classes of aspen (ideally 10 years apart). New age classes of aspen are typically created by small (10 acres or less) clear-cuts. The densest aspen regeneration will come from suckering, where new stems emerge from the roots of cut aspen when exposed to sunlight. Winter harvesting is best to prevent damage to existing roots. Openings also promote the growth of understory plants and shrubs, which provide food for grouse and other wildlife. Consider creating or keeping pockets of dense shrubs and/or conifers for cover along with small groups of more mature aspen within younger areas as a food source. Try to leave 1-2 logs of at least 8 inches in diameter and 70 inches long on the ground for every acre of managed forest, preferably with a guard tree (standing tree or snag within ten feet of the log) nearby, for drumming males. If you own forty acres of forest or more, you may be able to create the proper mix of habitat needs for ruffed grouse through management. If your land is less than forty acres of forest, try to work out a plan with your neighbors to improve grouse habitat. Keeping areas of young forest is key. If unmanaged, aspen may be replaced by another forest type less suitable for ruffed grouse.

**Oak Management:** Oaks are slow growers and can be difficult to manage for grouse. When oak seedlings are not present, a series of partial cuttings called a shelterwood harvest can be used to make gaps the canopy and allow acorns from the remaining trees to germinate. The remaining canopy is later removed to give the seedlings more sunlight. If oak seedlings are present, a series of clear cuts in small, scattered cutting blocks can be used while keeping oak or aspen saplings more than three feet tall and reserving 3-6 oak trees per acre for acorn production. Prescribed burning is also an effective tool to promote oaks when used correctly but must be done with care.

**Mixed Conifer Forest Management:** Upland coniferous forests, such as spruce, balsam fir, and jack pine can also produce ruffed grouse. Try to maintain any areas of existing aspen or other hardwoods. If you perform a thinning harvest in red pine, try to thin more aggressively in some areas to promote hardwoods like aspen to naturally regenerate.

**Several agencies have developed guides that provide strategies and best management practices for managing and harvesting Minnesota forests. Try looking up the documents below for more detailed information:**

Managing Your Woodland for Wildlife (MNDNR)

Managing Your Woodland for Ruffed Grouse (MNDNR)

Minnesota's Forest Management Guidelines: Quick Reference Field Guide (MFRC)

**The North St. Louis Soil & Water Conservation District is here for you!** We offer a variety of services promoting sustainable use of our natural resources. . Contact our District Forester, Tristan Nelson, [tristan@nslswcd.org](mailto:tristan@nslswcd.org) or (218) 288-6146 if you have any questions on how to manage your land for wildlife, general forest management, forest stewardship plans, or financial assistance to complete forest management projects. Please visit our website for more information, resources, and available services. [www.nslswcd.org](http://www.nslswcd.org)