



RUFFED GROUSE

by Chuck Fergus

Bureau of Information and Education
Pennsylvania Game Commission



The ruffed grouse has been Pennsylvania's official state bird since 1931, and its beauty is admired by hunter and non-hunter alike. Grouse are still fairly plentiful in some parts of Penn's Woods, although they're not as abundant today as they were in the early part of this century. Changing habitat has resulted in this gradual decrease in grouse numbers.

Grouse are gallinaceous birds and are related to quail, turkeys, pheasants and ptarmigan. The ruffed grouse is found throughout much of the northern part of our continent in areas of suitable habitat.

Biology

A grouse weighs about 1½ pounds, body length is 15½ to 19 inches, and wingspread is 22 to 25 inches. The bird's plumage is rich brown sprinkled with white and black above, and white with horizontal dark brown bars on the breast and undersides. The tail is brown and has a wide, black band between two narrower grayish bands. The name "ruffed" comes from a ruff of iridescent black feathers that almost completely encircles the neck. Two interesting color phases occur infrequently. "Silver-tailed" birds have gray instead of brown in the tail; "red-ruffs," even rarer than the silver-tails, have rust-colored feathers with chocolate-brown ruffs and a dark brown--rather than black--tail band.

Males (cocks) differ from females (hens) in several ways. They weigh a little more than females, and the males have much more prominent ruffs which can be fluffed up for a courtship display. The hen has a shorter tail, and her black tail band is generally broken in the center, while the cock's band is usually continuous. Grouse moult once each year. Adults moult from July into September and may have difficulty flying when many flight feathers have dropped and replacements have not fully developed. Immature birds moult in August and September, when adult plumage replaces juvenile feathering.

Grouse are found throughout Pennsylvania in suitable habitat and are year-round residents. Individuals rarely range more than a few hundred yards a day unless pressed by predators or hunters; in fact, the same bird may be flushed from the same area in the woods several days in a row.

Grouse eat many types of food. In the summer, they consume insects (which are rich in protein), blackberries, blueberries and other wild fruits, sedges and green leaves of

various plants. In fall, when insects are scarce, their diet is almost exclusively plant foods including small acorns, beechnuts, cherries, barberries, wild grapes, apples, hawthorn and dogwood fruits, and various buds and leaves. Buds form the basis of the grouse's winter diet: aspen, birch, beech, maple, cherry and apple buds are favored. Ferns, green leaves and other evergreen foods are eaten until food becomes more plentiful in the spring.

Like most birds, grouse have keen eyesight and hearing. At one time, they were not nearly as wary as they are today; reputedly, early settlers killed them with sticks and stones. Today you may surprise a grouse bathing in the dust on a back road, in a sandy bare spot on the forest floor, or in the debris around a rotting stump. Dust bathing may stimulate feather growth in young grouse, maintain adult plumage or rid birds of external parasites.

Grouse shelter beneath conifers during stormy weather, and they roost in conifers and hardwoods. They may spend winter nights beneath the snow, sometimes flying directly into a soft snowbank at dusk. Grouse are not especially gregarious, although groups of birds are sometimes found together in the fall. These are usually a hen and her offspring of that year. During winter, a grouse's feet develop snowshoe-like properties through the growth of a horny fringe around the toes.

Although its take-off is thunderous and powerful, a grouse cannot fly long distances. Its top flight speed is about 20 m.p.h. After take-off, it flies rapidly and then locks its wings and glides to safer territory, usually traveling less than 100 yards. During mating season--March and April--male grouse attract females by drumming. With tail fanned, the male stands on a large, prominent log or rock and beats the air sharply with his wings. The rush of air created by his wingbeats sounds much like drumming. The drumming starts slowly and increases in speed, until the individual thudding beats merge into a fast, steady whirl. Males also fight and display for females; displaying males fan their tails, puff out their ruffs, hiss and drag their wingtips along the ground.

A mated hen picks a secluded nesting site, usually at the base of a tree or under a bush, and lays 6-16 white or buff eggs in a leaf-lined depression in the ground. The hen may re-nest if nest destruction occurs. The incubation period is approximately 24 days, and the male does not help the female incubate eggs or brood young.

Baby grouse are precocial--they can leave the nest when

dry. Chicks develop rapidly; at three weeks of age they can fly, and by autumn they look and act like adults. In early fall, birds of the year may exhibit a strange period of restlessness known as the "fall shuffle" or "crazy flight." During this time, some young grouse take off in apparently undirected flight, and a few are killed when they crash into trees, fences, windows and the sides of buildings. The fall shuffle may serve to scatter broods and expand or disperse the population. Grouse rarely--if ever--die of old age in the wild. Juvenile mortality is great; most grouse die before they are a year old, and few live to be two years of age.

Population

Many factors affect the size of the ruffed grouse population. A cold, wet spring following a harsh, long-lasting winter results in lower numbers of successful hatches. Many females succumb to bad weather conditions while trying to incubate eggs or brood young, and chicks find it especially hard to survive cold, drenching rains. Grouse can contract diseases which may kill or weaken them, making them more susceptible to predation; parasites affect grouse similarly.

Birds may die of a variety of physical accidents, including being hit by cars on back roads. Predation, severe weather and natural disasters like floods and forest fires also contribute to mortality. Hunters harvest only what biologists term "surplus" grouse, birds that would die of other causes before the next breeding season. Some wildlife biologists estimate that hunters can safely harvest two out of every five birds present at the beginning of hunting season without endangering the next year's breeding stock. In years of good production, hunters usually take two or three juveniles for every older bird they harvest.

The grouse population seems cyclic, undergoing fluctuations--from low to high numbers of birds--that span periods of five to ten years. Populations fluctuate differently in different regions, due to local cover, food, and weather conditions. Grouse will not tolerate crowding; the minimum area needed to support a single brood is about nine acres.

Pennsylvania's rapidly maturing forests and large deer herd have combined to reduce undergrowth and cover. Today, good grouse cover returns wherever forest tracts are cut or burnt off and then grow up in brush, duplicating favorable

conditions that were present after the extensive logging of Pennsylvania's forests around the turn of the century.

Habitat

Cover is the most important factor affecting the size of our state's grouse population. Cover is comprised of physical things that provide natural shelter and protection for wild creatures; grouse need cover for breeding, feeding, wintering and especially for brooding (raising) young. Earlier in this century, much of Pennsylvania provided excellent grouse habitat in brushy, logged-off forest areas. Today, these areas have grown up, or matured, and offer less suitable low cover.

Grouse are shy birds and their range has shrunk where cities and towns have expanded; they don't readily adapt to civilization. Grouse can do well in areas without visible water sources, obtaining moisture from vegetation they eat. They seldom starve during the winter, as they are capable of "budding" (eating tree buds that are available regardless of snow depth).

The following plant species and situations contribute to good grouse habitat and should be encouraged: mountain laurel and greenbrier thickets, especially those including some hemlocks or white pines; prolific sprout growth in areas which have been burned or logged within the last ten years and are growing up again; dense pine clusters in immature hardwood forests; stands of wild crab and hawthorn trees; edge provided by logging roads and trails through wooded areas; and abandoned apple orchards near thick cover. Taller trees can be felled to allow more sunlight to reach grapevines, greenbriers, small conifers, thorn-apple trees and the like.

Aspen stands can be managed to favor grouse. Aspen has about a 40-year life expectancy and produces a maximum amount of buds at this age. A percentage of mature trees can be cut every ten years, producing four different growth stages in each stand; further segments of each 10-year stand can be cut every two years to give five ages within each stand. These practices result in a variety of age groups--from one to 40 years old.

Landowners interested in building a good grouse population should also try to increase the following on their property: juneberries, grapes, greenbriers and witch hazel. At the same time, they should cull out towering, shade-producing trees which may kill the more-favorable low fruiting vegetation.

**This Wildlife Note is available from the
Pennsylvania Game Commission, Bureau of
Information and Education, Dept. MS, 2001
Elmerton Avenue, Harrisburg, PA 17110-9797
An Equal Opportunity Employer**