

Wildlife Management: Ring-necked Pheasants

Although the Ring-necked Pheasant (*Phasianus colchicus*) is an elusive bird, those who have seen an adult male will not soon forget his brilliant appearance. Pheasants are not native to Maryland, but there are management techniques you can use to encourage the species. This fact sheet explains those techniques along with the habits and appearance of the birds.

Physical Characteristics

Ring-necked Pheasants are known for the spectacular

coloration of the male pheasant, which is unsurpassed by any other bird in Maryland. The cock's (male) beautiful plumage (feathers) is in sharp contrast to the dull plumage of the hen (female). The cock's dark-green head has iridescent shades of green and violet, and vivid scarlet patches around the eyes, with a characteristic white ring around the neck. There are many other differences between the sexes of this popular game bird.

Average wild adult cocks weigh 3 pounds and are 13 inches tall. The length from beak to tip of tail is 36 inches. The wild cocks' tails are up to 22.5 inches long; wingspans are 32 inches. In contrast, wild hens average 2 pounds

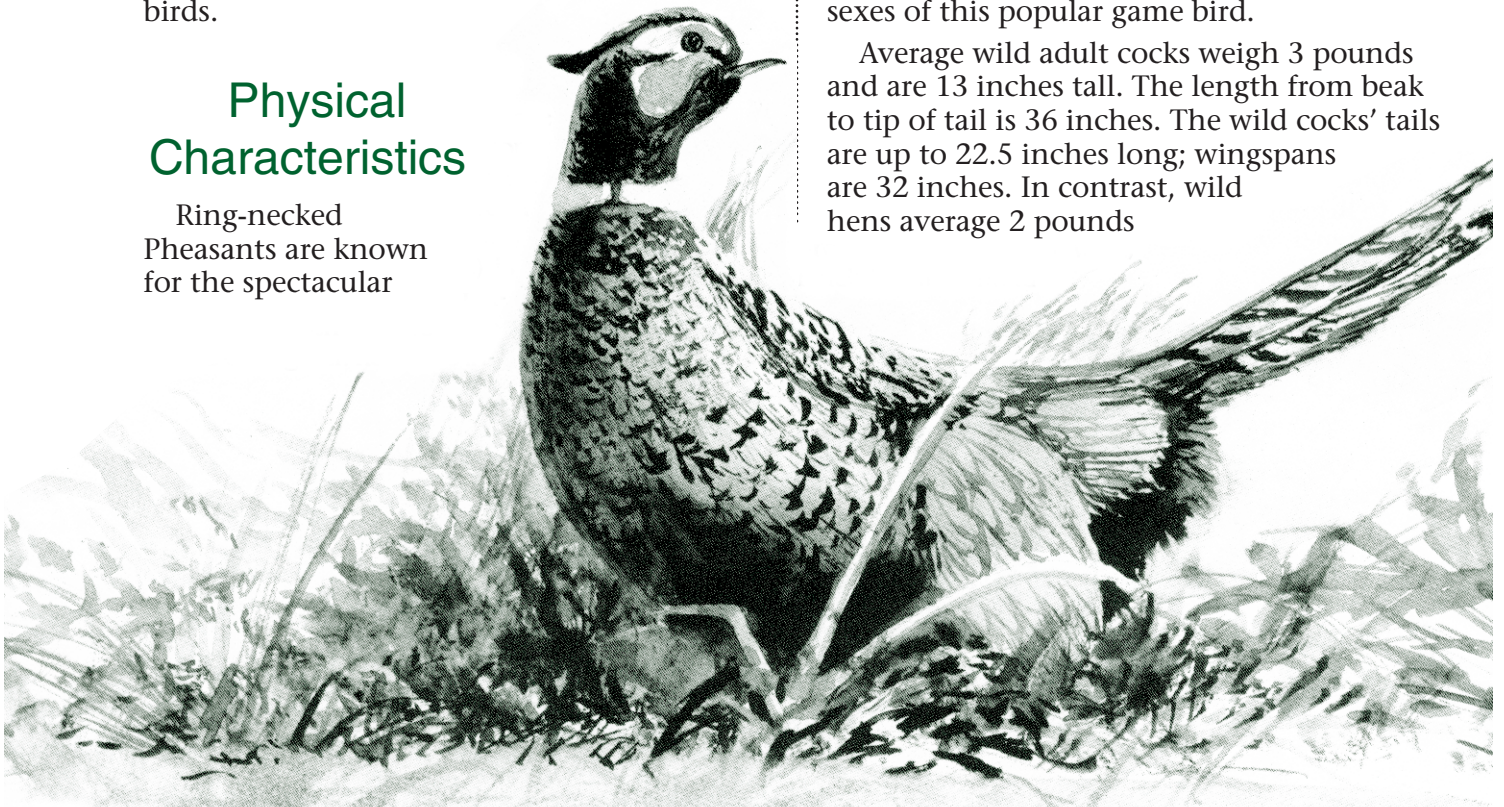


Table 1. Life History of Ring-necked Pheasants.

Mating	March–April
Clutch size	Average 13 eggs (range 7 to 16) laid over a 16-day period
Incubation	23 days
Hatching	Peak–June (range from May to September)
Adult plumage	6 weeks
Standing height	Male 13 inches
Weight	Male (2.4 to 3.5 lb) Female (1.8 to 2.4 lb)
Home range	0.5 mi ²

and measure 23 inches from beak to tip of tail. Their plumage is an almost uniform dusky brown, with black- and brown-flecked feathers often tipped with beige. Hen pheasants might be confused with ruffed grouse, but the former are heavier than grouse by about 1 pound, about 9 inches longer, and have a much longer, narrower, pointed tail without the grouse’s characteristic wide black terminal band.

You cannot distinguish adult from juvenile cocks in the fall by a single criterion, but you can identify pheasant age by a combination of characteristics with a fair degree of certainty. The spurs (located on the lower leg just above the foot) of adult cocks commonly are longer, darker, harder, and more pointed than those of males less than 1 year old. When pressed with one finger, the tip of the breastbone in young birds bends easily, whereas, in adults it is rigid. Similarly, jaws of older birds are stronger than those of young birds. Several of these traits should be checked before deciding on the likely age of a pheasant.

Abundance and Distribution

The Ring-necked Pheasant belongs to the order Galliformes, as do quail, grouse, turkey, and domestic chickens. Pheasants of the genus *Phasianus* (the true pheasants) are

native only in portions of the Middle East, Central Asia, China, and Japan. At least three species (black-neck, Chinese, and green) and 29 subspecies are recognized throughout the pheasant’s native range.

The English have long cherished the pheasant as a game bird. Several futile attempts were made during colonial times to introduce the blackhead variety, which was then well established in England, to North America. The first truly successful stocking of the pheasant in the United States was in the Willamette Valley of Oregon in 1881. In Maryland, the primary pheasant range currently consists of Baltimore, Carroll, Frederick, and Washington counties, with a limited number found throughout the rest of the state.

During typical years, fall pheasant populations average about eight or more pheasants per 100 acres in primary range. Pheasant populations were well below potential densities on the better range throughout the late 1970s due primarily to a series of abnormally severe winters, wet springs, and the reduction of fallow “soil bank” acreage. Soil fertility, weather, and farming practices greatly influence pheasant population densities.

Life History of Ring-necked Pheasants

Breeding and Nesting

Pheasants begin breeding in mid-March to early April, and if some hens experience repeated nest failure, nesting may extend into August. Most chicks are hatched before June 28 each year.

Cocks become very aggressive during the breeding season. Within their home ranges, approximately 0.5 square miles, dominant cocks select several places from which they crow and strut their mating display in attempts to lure receptive hens and to discourage rival cocks. The cocks use a distinctive “cawk-awk” call to attract females, frequently in early morning and late afternoon on calm, clear days. A cock may acquire a harem of up to a dozen hens. Home ranges commonly overlap, but dominant cocks will not tolerate

the presence of intruding cocks near their harem or at their crowing sites. When rival cocks fight, it is an all-out struggle, with beaks and spurs being used in deadly earnest.

Hens may wander freely from harem to harem and drop a few eggs randomly (even in other hens' nests) before attempting to establish their own nests. Typically, you will find nests in the residual cover found in old (fallow) fields overgrown with a mixture of grasses and goldenrod, asters, hay, wheat, or in well-managed alfalfa fields. Nests are simple depressions in the ground, lined with residual debris, and a few body feathers. The eggs are buff to pale olive green, and measure about 1 by 2 inches. Clutch sizes range from 7 to 16 eggs, with an average clutch of 13 eggs. The eggs are laid over a 16-day period. If clutches are destroyed or if the hens are overly disturbed, they may attempt to renest up to four times, laying fewer eggs on each successive try. Incubation takes 23 days. Peak of hatch is during June, but clutches may hatch from early May to early September, depending on the time of breeding and success of initial nesting attempts.

The chicks are precocial; that is, they are able to run and eat within a few hours of hatching. Hen pheasants are attentive mothers, and until chicks are about 3 weeks old, they are brooded or covered by the hen for protection against cold, damp weather. During their first 3 weeks of life, the undisturbed brood usually remains within about 300 feet of the successful nesting site. Young chicks are incapable of long flights at this age and hide rather than flee from potential predators; therefore, a secure nesting cover is vital to the survival of pheasants. The secure nesting cover must be an area virtually free of disturbance for 54 to 64 days, ideally from April 28 to June 28.

At 6 weeks of age, pheasants begin to develop adult plumage. By the arrival of the fall hunting season, most juveniles are 3 months old and can only be distinguished from adults by the subtle characteristics mentioned previously. Cocks and hens are sexually mature at the end of their first year.

Cover

As the brood matures, it becomes more mobile. More areas become suitable for the

young birds as more crops are planted and start to mature. Crops such as soybeans, oats, and corn will provide adequate cover throughout the summer into the fall and even after harvest. Thus, many pheasants are found in agricultural fields during the hunting season, not only because they are feeding there, but also because the birds have lived there most of their lives and probably feel secure.

As fall progresses, pheasants tend to leave their summer range and congregate in adjacent protective wetland or upland cover. Under normal winter conditions, pheasants use fall cover only temporarily. They will remain within these areas as long as snow does not substantially reduce the protection this cover provides. Normally, pheasants abandon fall cover by December or January in favor of better, traditional winter lowland cover. The distance an individual pheasant travels from fall to winter cover may be up to 3 miles.

Large numbers of hens may congregate in suitable, dense, lowland habitat through the winter, whereas cocks prefer to winter individually or in flocks of just a few males. Winter home ranges for either sex depend greatly on the proximity of suitable cover to adequate food supplies. Pheasants may travel up to 0.5 mile from winter cover to feeding areas, but their daily movements are generally less than 0.3 mile. If the winter cover becomes blanketed by snow, pheasants will abandon that area for an area with better cover, even if adjacent food resources are poorer. While deep snows may drive birds from winter cover, extreme cold usually makes the birds very sedentary.

Cocks are the first to leave the winter concentration areas. They establish their breeding territories in March and early April and are followed by the older hens, then the young hens follow 1 to 2 weeks later. Adult hens usually return to their previous summer range, whereas young hens tend to wander about before settling down. As young hens disperse from winter cover to new and unfamiliar nesting areas, they are subject to a great deal of predation. Hens are not territorial at any time of the year; several hens may nest within a few yards of each other and share the same 0.3-square-mile home range through spring and summer.

Food

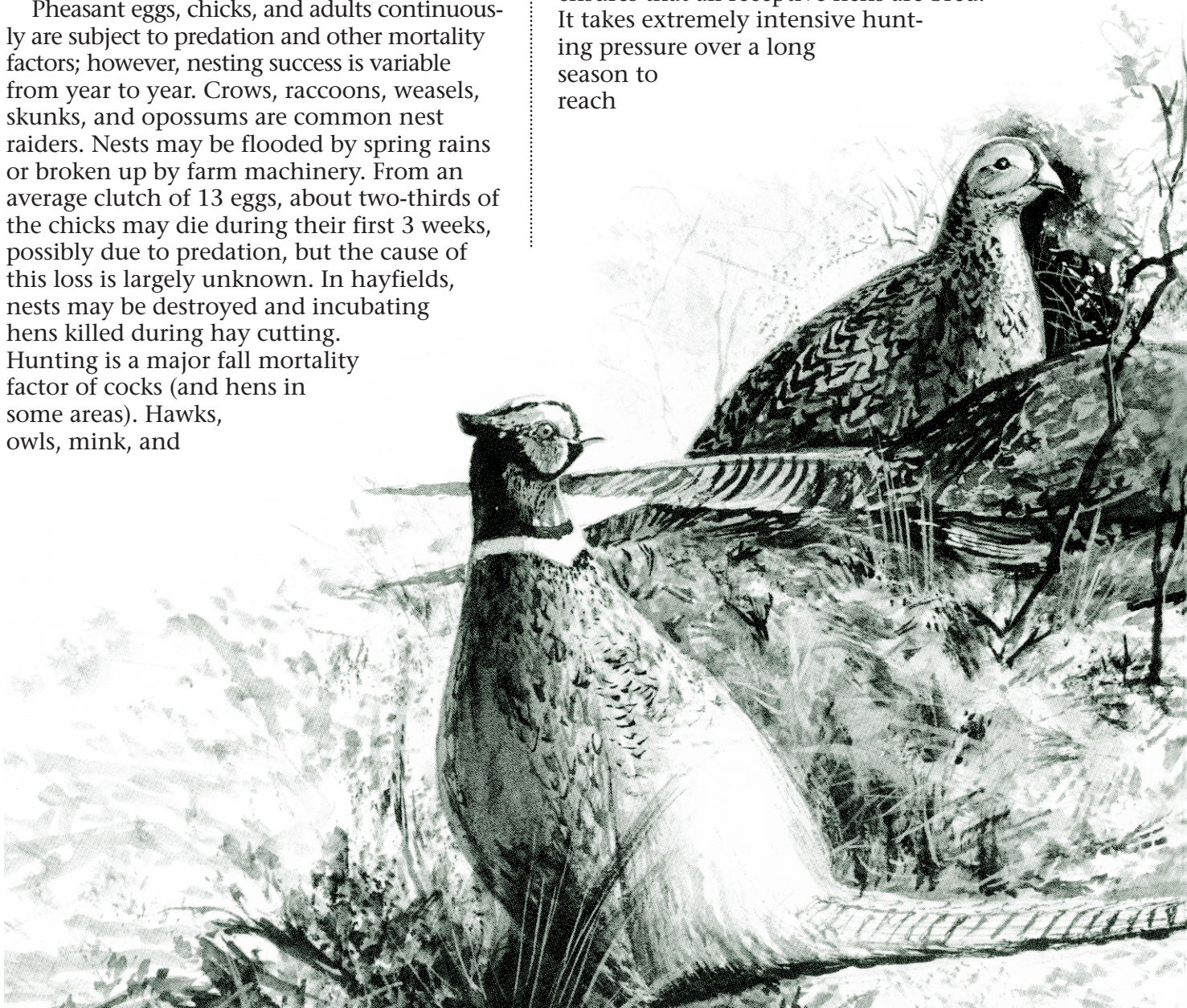
For the first few weeks of their lives, chicks primarily eat insects, which are high in protein and promote rapid growth. Adults also eat large numbers of grasshoppers, beetles, caterpillars, and grubs throughout the summer and fall, but the majority of their diet consists of weed seeds, grains, wild fruits, and berries. The primary winter food is waste grain corn, but pheasants also may eat weed seeds and wild fruit. Young shoots or leaves of plants such as corn, wheat, and skunk cabbage are important spring foods.

Mortality Factors

Pheasant eggs, chicks, and adults continuously are subject to predation and other mortality factors; however, nesting success is variable from year to year. Crows, raccoons, weasels, skunks, and opossums are common nest raiders. Nests may be flooded by spring rains or broken up by farm machinery. From an average clutch of 13 eggs, about two-thirds of the chicks may die during their first 3 weeks, possibly due to predation, but the cause of this loss is largely unknown. In hayfields, nests may be destroyed and incubating hens killed during hay cutting. Hunting is a major fall mortality factor of cocks (and hens in some areas). Hawks, owls, mink, and

red and gray foxes frequently prey upon adult birds, which are particularly vulnerable in winter. Severe winter weather with deep snow and ice storms results in high losses to predation. Hens are particularly vulnerable to predation during early spring, the period between snowmelt and growth of green vegetation. Pheasants have a potential lifespan of about 8 years, but the average lifespan for cocks and hens in the wild is about 10 and 20 months, respectively.

Up to 90 percent of the fall population of cocks can be harvested by hunters without reducing the reproductive potential of the population the following spring. The polygamous breeding habit of the remaining cocks ensures that all receptive hens are bred. It takes extremely intensive hunting pressure over a long season to reach



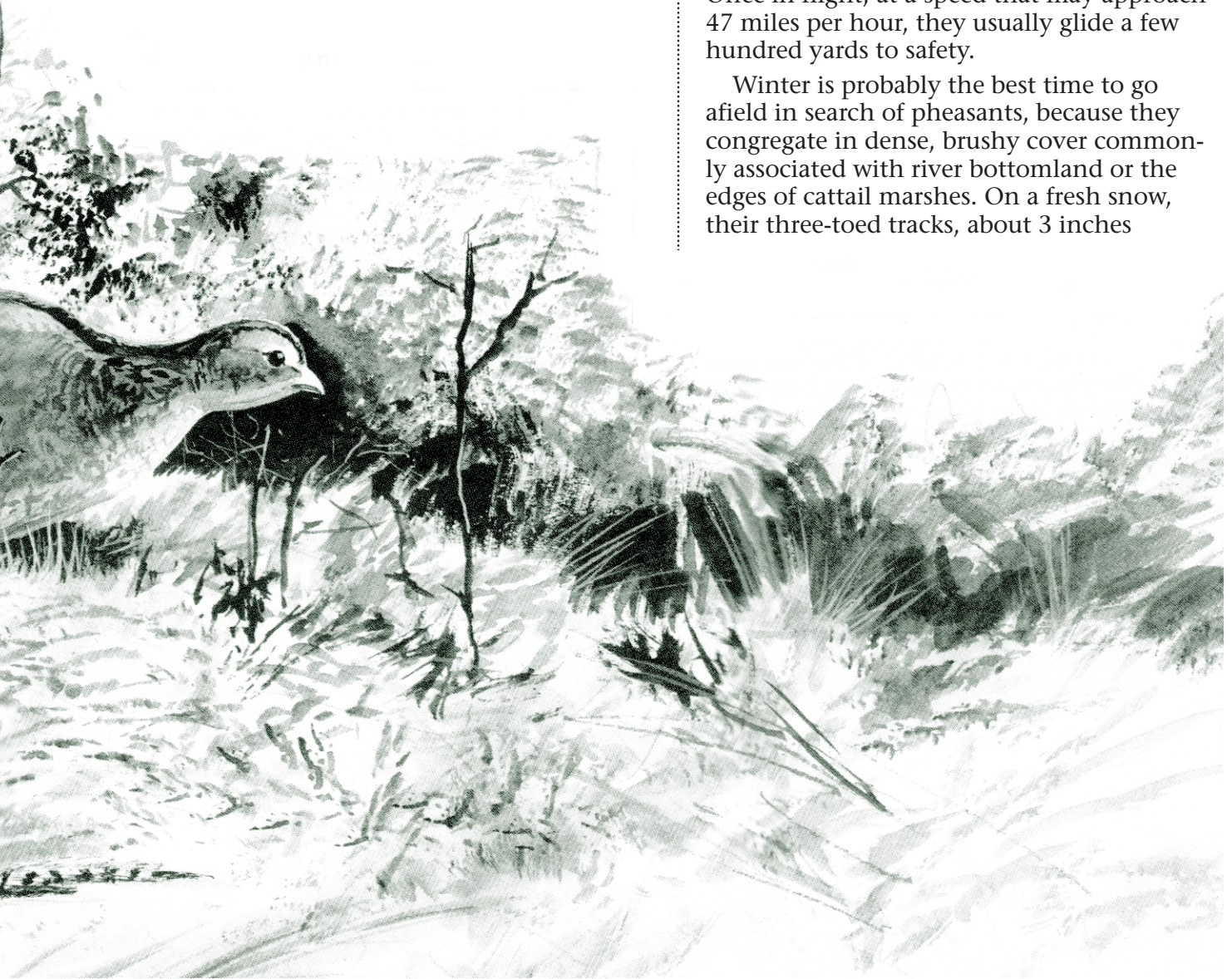
such a high harvest percentage. As hunting success drops, the vast majority of hunters become discouraged and go elsewhere during the remainder of the season. An average of only one cock in five ever reaches their second year, regardless of normal hunting pressure. Therefore, cocks that are not harvested by hunters are lost to other mortality factors.

Predators take a significant number of pheasants when available, but they do not constitute a major threat to a wild pheasant population on good range. Habitat manipulation programs show promise and are more cost-effective than predator control. Because of their large clutch size, pheasants can withstand what might appear to be heavy losses to predation, while still maintaining sufficient breeding stock to keep their population at the range carrying capacity.

Observing Ring-necked Pheasants

You will find that wild pheasants are wily and elusive birds. Their keen eyesight and hearing make approaching them for close observation extremely difficult. An adult pheasant can slip away silently and undetected in as little as 6 inches of ground cover by lowering its head and pressing its body to the ground. Their long, powerful legs make them superb sprinters, easily capable of outrunning a person. If cornered or hard pressed by a person or dog, pheasants will noisily take to the air, with cocks emitting a series of loud cackles. Pheasants have relatively small wings compared to their body size and must beat their wings furiously when taking flight. Once in flight, at a speed that may approach 47 miles per hour, they usually glide a few hundred yards to safety.

Winter is probably the best time to go afield in search of pheasants, because they congregate in dense, brushy cover commonly associated with river bottomland or the edges of cattail marshes. On a fresh snow, their three-toed tracks, about 3 inches



long, are distinctive. During this season, pheasants usually leave protective cover to feed in nearby corn or other grain fields during the day; therefore, it is a little easier to observe them during these feeding forays.

Another good opportunity for you to observe pheasants is in the spring when territorial cocks are strutting and crowing. Cocks do most of their courting early in the morning and may crow once every 5 minutes as they slowly move with their respective harems of hens. A displaying cock fluffs out his plumage and drags his cupped wings along the ground as he struts about before his hens in a grand show of feathered finery. If challenged by another cock, both become almost oblivious to their surroundings during the ensuing struggle for dominance.

Habitat

A variety of habitats are used by pheasants through the seasons of the year. Because pheasants spend about 40 percent of their lives roosting, they require secure protective cover. Depending on their availability, uncultivated fields of grasses and perennials, hay fields, stubble fields, and trees provide most spring, summer, and fall roosting areas. Thick woodlots, pine stands, uncultivated fields, brushy areas, and wetlands are suitable habitats during the winter. Trees are used more often than fields in Maryland. Although uncultivated fields are used for roosting when snow cover is light, the more snow on the ground, the thicker the cover needed to protect the bird from the elements and predators. Old fields of goldenrod and aster provide little value for roosting because of the low density of the cover provided.

Nesting and brood-rearing habitat varies with the growth of vegetation and the age of the birds. The majority of first nest attempts will be found in uncultivated fallow fields of grasses, perennial and grass mixtures, as well as managed alfalfa fields. Hens seek these areas of residual cover from the past year's growth, and no new growth has started when the nest is initiated. Later nesting attempts can be found in agricultural areas as well as uncultivated fields and brush areas. Nests established in oats or wheat usually will be successful, but nests in hay-type cover fail

because of the timing and short interval between mowings. Hedgerows and strip cover, such as ditches and roadsides, are used to a much lesser extent for nesting and brood rearing. Hedgerows and strip cover are important as travel lanes to roosting and feeding areas during all times of the year.

In late summer, more acreage grows into suitable cover for pheasants, and, thus, home ranges increase in size until late fall. As fall draws to a close and winter presses on, most agricultural crops are harvested, and agricultural areas are then used to a much lesser extent. As birds move toward wintering areas, their home ranges shrink in size. Usually, wintering areas are an association of the dense vegetation of uncultivated fields (dogwood, conifers, alder, canarygrass, cattails, and so forth) in close proximity to grain fields, especially corn. In general, early spring and winter are times of minimum cover acreages for pheasant due to agricultural activities and snow, respectively. Mid-summer into fall are easy times for pheasants because cover acreage is at a maximum.

Managing Ring-necked Pheasants

In agricultural areas, you should focus on creating undisturbed nesting cover, roosting areas, and good winter cover near food supplies. Uncultivated, old fields that have grass as a predominant cover provide the most important nesting and brood rearing cover. You should allow such areas to "go wild" and remain undisturbed until at least early July; by then most eggs have hatched.

You may provide adequate winter cover over large expanses of pheasant range with 20 to 30 acres of dense, brushy areas of cover spaced a maximum of 3 to 4 miles apart. Several areas of winter cover 2 to 10 acres in size could be substituted for one large unit. The remainder of the range might ideally consist of 65 to 80 percent cultivated land in grain crops, 15 to 30 percent in hay or rotation pastures, 5 to 10 percent in brush and woods, and 3 percent or more in permanently protected grassy cover. This latter cover should be in blocks at least several acres in size, preferably 2 to 10 acres. The amount of

edge may not be important; hens will nest and brood throughout these fields, not just along the perimeter. Hens have greater success hatching and rearing broods in these larger fields than in strip-type cover. One major problem in Maryland is that hens have a tendency to nest in hay or small grain and alfalfa fields in early spring. This action will lead to nesting problems when these fields are cut. One option you may consider is to plant a mixture of orchardgrass, timothy, and clover around the perimeter of these agriculture fields. These perimeter plantings should be a minimum of 25 feet wide to an ideal width of 50 feet. This type of cover will draw the hens from the surrounding cover in the spring for nesting, thus keeping nests out of danger during hay and small grain cutting time. You should also delay mowing fields until after June 28 when the hens and the chicks are out of the nest. Another effective

farming practice is to leave strips of corn or soybeans, preferably corn, for winter food. These strips could be left on the outside edge of the fields. Such intermixing of cultivated land with cover habitat generally results in higher densities of pheasants throughout the range.

Adapted from:

Goff, G.R., D.J. Decker, J.W. Kelley, and R.A. Howard Jr. 1982. "Ring-necked Pheasant, New York's Wildlife Resources." New York State College of Agriculture and Life Sciences, Extension Service, Cornell University; Ithaca, NY.

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Fact Sheet 602 Bobwhite Quail

Fact Sheet 603 Ring-necked Pheasants

Fact Sheet 604 Ruffed Grouse

Fact Sheet 605 Mourning Doves

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