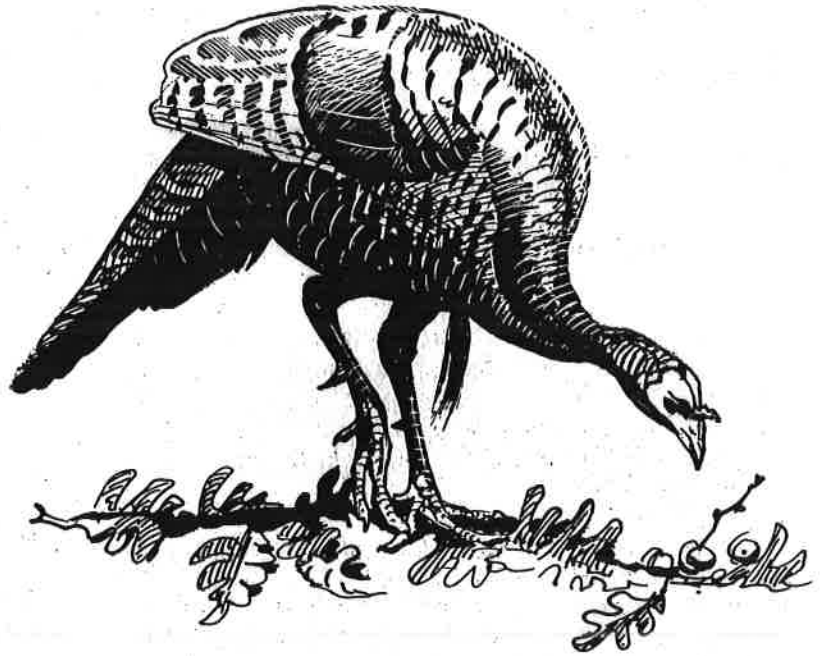


WILD TURKEY



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The wild turkey is a shy, permanent resident of Pennsylvania's woods and mountains. Infiltrating a flock of these big birds is no mean feat, and when the hunter or naturalist is finally discovered, he's treated to a spectacle—turkeys flapping up on loud wings, turkeys running full tilt, heads extended on serpentine necks, turkeys sneaking through the understory. Then the whole woods seems to hold its breath until the first tentative calls of regrouping birds break the silence

Turkeys have long been important to man in North America. Indians hunted them for food, and some natives even domesticated the big birds. Later, the wild turkey became a steady food source for white settlers. It earned a symbolic role as the main course of the Thanksgiving meal, which epitomized the successful harvest. Benjamin Franklin so admired the big bronze bird that he wanted it for our national emblem. Comparing it to the bald eagle, he said: "The Turkey is a much more respectable Bird, and withal a true original Native of America."

Several theories explain how the bird got its name. Early naturalists may have confused it with a species of Old World guinea fowl found in Turkey. Or the word may describe one of the bird's calls, which sounds a bit like "turk, turk, turk." Still a third explanation is that the word sprang from an American Indian name for the bird, "firkee."

By whatever name, the fact remains that this big bird was nearly exterminated by the ax, the plow, and the gun.

As our nation grew, settlers cleared wooded habitat for farms. And they shot turkeys for food: by 1800, market hunters were selling the birds for as little as six cents each. By the early 1900s—when eastern forests had been lumbered and periodic fires hampered their regeneration—the turkey was in trouble.

Fortunately, newly formed conservation agencies stepped in. Game departments took money from hunting license sales and, beginning in the mid-'30s, from federal taxes on sporting arms and ammunition, and spent it on research, habitat improvement, and extension of the turkey's range.

Today, the wild turkey is a self-sustaining game bird in most eastern and southern states. In Pennsylvania, it joins the white-tailed deer and black bear to form the "big three" of Keystone State hunting. The pursuit of this wily bird creates devotees, almost cultists, and consistently successful turkey hunters are patient, knowledgeable woodsmen—who still are frequently fooled by the big birds.

Biology

North American turkeys—including the domesticated bird—belong to the single and highly variable species, *Meleagris gallopavo*. Taxonomists recognize at least six subspecies; the variety found in Pennsylvania is known as the Eastern wild turkey. Turkeys are gallinaceous—"chicken-like"—birds (order Galliformes), related to grouse, quail, pheasants, and chickens.

Adult males, also called "gobblers" or "toms," stand 2½-3 feet tall and 3-4 feet long. Females (hens) are shorter by

about a third and weigh about half as much. Gobblers weigh up to 25 pounds, averaging 16. Adult hens weigh 9-10 pounds, and six-month-old birds, 6-13 pounds.

The wild turkey looks much like the domesticated subspecies, except the wild bird is slimmer, has a smaller head, a longer neck, longer, rangier legs, and smaller fleshy head and neck adornments. Tailfeathers and tail coverts are tipped chestnut brown on wild birds, white on domesticated ones.

Plumage is an overall rich brown. In shadow, turkeys appear black; in bright sunlight, their feathers gleam with copper, blue, green, and mahogany highlights. A hen's plumage is duller and not quite so iridescent, and her breast feathers end in a brown or buff band, while those of a gobbler are tipped with black.

Gobblers have spurs—sharp, bony spikes on the backs of their legs which they use in fighting—and rough, black “beards,” growths of rudimentary, hair-like feathers called mesofiloplumes, which protrude from their breasts. These beards grow quickly for the first four or five years, then more slowly, until they're about 12 inches long. The ends may break off, though, so beard length isn't a reliable indicator of age. Usually, hens have neither spurs nor beards.

A gobbler's head is practically bare, while that of a hen is covered with hair and fine feathers. A fleshy, pencil-like appendage called a caruncle or snood dangles from between the gobbler's eyes. Heads of both sexes are bluish-gray, and their necks may have a pinkish flush. During mating season, a gobbler's head and neck are more red; during courtship display, his snood may become long and turgid, and the color of his head and neck changes quickly from red to blue, purple and white.

Food—In spring, turkeys eat tender greens, shoots, tubers, left-over nuts and early insects. As the weather warms up, they eat more insects, including grasshoppers, walking-sticks, beetles, weevils, dragonflies, and larvae. They also consume spiders, harvestmen, ticks, millipedes, centipedes, snails, and slugs. But even in summer, a majority of the diet (perhaps 90 percent) is vegetable. A wide variety of plant species are eaten, as well as a number of plant parts, including fruits, seeds, seedheads, tubers, roots, bulbs, stems, leaves, flowers, and buds.

In fall, turkeys eat mast (beechnuts, acorns); fruits (dogwood, grape, cherry, gum, thornapple); and seeds (grasses and sedges, ash, corn, oats, weeds). During winter, they rely on seeds, nuts, and fruits left over from autumn, and on green plants, crustaceans, and insect larvae found in and around spring seeps where ground water emerges along a hillside or in a flat. Temperature of this water is above freezing, so the seeps remain open all winter, providing food for turkeys and other wildlife.

A turkey often scratches for its food, kicking forest duff and leaves behind. If the bird finds an acorn, it picks up the nut in its beak, straightens its neck, and swallows. The nut is

stored in the bird's crop, a flexible bag in which juices and body heat work to soften it. Then the nut passes into the gizzard, an enlarged, thick-walled section of the food canal which contains small stones and gravel called grit. Strong muscles use the grit to grind down the acorn.

Turkeys may range up to several miles a day in search of food and water, sometimes establishing regular feeding routes if left undisturbed. In autumn, hunters “read” the food scratchings to determine when a flock passed by, what size the flock was, and which way the birds were headed.

Physical properties, behavior—Like most birds, turkeys have keen eyesight and hearing. They hide cleverly, fly an estimated 40-55 m.p.h., cover over a mile while airborne, swim with ease . . . but they usually rely on their feet to escape danger. The strides of chased gobblers have been measured at four feet and their top speed estimated at 18 m.p.h. Tracks vary somewhat by the age of the bird (a young tom, for example, might have a shorter print than an adult hen) but any track larger than 4¼ inches, from back of heel pad to tip of middle toe, was probably made by a male.

Each evening, turkeys fly into trees to spend the night; a flock of 6-40 birds may roost in the same tree or in adjacent trees. They prefer the shelter of conifers during inclement weather. In early morning, the birds glide to the ground, call, and regroup for feeding.

Turkeys make a wide range of sounds. Best known is the male's gobble (described *ill-obble-obble-obble*), used in spring to attract females and proclaim territory. Other calls include yelps (*keouk, keouk, keouk*), made by both sexes; the cluck (*kut*), an assembly note; the whistle, or “kee-kee run,” of a young bird (*kee, kee, kee*); and the alarm note (*putt*). Gregarious birds, turkeys call when separated from the flock; by imitating such calls, hunters attract birds.

Reproduction—Toward the end of March, a male turkey changes physically. His fleshy crown swells and turns pale, his wattles redden and hang from his head, and he develops a thick, spongy breast layer containing oils and fats to help sustain him over breeding season. Toms gobble loudly in early morning and sometimes in late evening. Blowing a car horn, beating a tin pan, or making almost any loud noises may provoke lusty gobblers.

If hens are present, a gobbler will display by fanning his tail, erecting his feathers, and tucking his head back against his body. He will strut back and forth, hissing and dragging his wing tips on the ground. Rival males fight: each grasps the other's head or neck in his bill and tries to shove or pull his foe off balance. The first bird to let go or lose balance gets thrashed with wing and spur.

Year-old birds are sexually mature; hens often mate during their first spring, but young males usually can't compete with mature gobblers. A dominant male may collect a



harem of 8-12 or even more hens. Males are polygamous: a gobbler mates with several hens and plays no part in nest site choice, brooding eggs, or rearing young.

In late April, mated females slip away from the flock. They choose nesting spots in wooded or brushy areas, near water sources and usually close to forest clearings or old fields. Nest: a leaf-lined depression in the ground. It may be located under the curve of a fallen log, concealed by vegetation or fallen branches, or at the base of a tree.

The gobbler's sperm is stored in the hen's oviduct, so that fertilized eggs may be laid up to four weeks after mating. One mating is usually sufficient to fertilize an entire clutch. A hen lays an egg nearly every day until her nest contains 8-15 (average, 12; smaller clutches by younger birds), but won't begin incubating constantly until after all eggs are laid.

Eggs are oval, sometimes pointed markedly at one end. The smooth, dull shells are colored pale buff and are evenly marked with reddish-brown spots or fine dots. Foxes, bobcats, and horned owls prey on nesting hens; eggs are eaten by the above plus mink, raccoons, opossums, blacksnakes, skunks, crows, and red squirrels.

Incubation takes approximately 28 days. After young hatch, the hen broods them until they're dry and then if the weather is good, leads them away from the nest.

Poults—Young turkeys are called poults. They're covered with a fine, brownish fuzz and even at hatching have a wild turkey's distinctive long neck and legs. Easy game for predators, their main defense is to hide. They scatter and freeze at the hen's warning call, remaining motionless until

she sounds the all-clear. A hen may feign injury to lure intruders away from her young.

Poults need high protein food, and the hen soon leads them to open areas where insect life abounds. Poults eat leafhoppers, crickets, other insects and larvae, tender greens, and fruits. The hen broods them nightly for at least two weeks, until their wings develop and they can roost in trees. When poults are about three weeks old, several family groups may merge to form a flock of hens and poults.

Six-week-old poults are fairly strong fliers, and by autumn they're practically self-sufficient. Birds of the year can be identified by their middle tailfeathers, which are longer than the others. In adults, the edge of the fanned tail forms an unbroken curved line.

In autumn, flocks often contain several old hens and their young, and occasionally hens that have not raised broods, for a total of 40 or more birds. Old toms usually remain apart, in pairs or trios. During early winter, family groups disperse and form new flocks by sex and age: hens, young toms, and old toms.

Although basically hardy, wild turkeys are susceptible to diseases. Enterohepatitis (blackhead) or coccidiosis may cause heavy mortality in small areas. Periodically, a harsh winter may lead to starvation, especially if there is deep, powdery snow which makes it difficult for birds to become airborne. Turkeys generally live up to five years in the wild, with a few reaching age 10.

Population

In 1900, few turkeys were left in the eastern U.S., largely because widespread logging had destroyed their woodland habitat. An estimated 5000 birds remained in Pennsylvania, a far cry from the large, healthy population that had existed here (mainly in southcentral Pennsylvania's oak and hickory forests) a century earlier.

Restoration of the species involved several steps. First, refuges were established and The Game Law strictly enforced to protect remaining local populations. Half-wild turkeys were bred on the Game Commission's wild turkey farm, beginning in 1930. These birds were nearly useless, but a method was devised to get wild toms to mate with the semi-wild hens. Most of the offspring were released; some were kept as stock to be bred again to wild toms. (Some game farm birds are still stocked where few or no wild birds currently can exist.) As cutover forests began to regrow, existing wild flocks began to move into new areas on their own. In addition, wild birds were, and still are, trapped in areas where abundant and transferred to good habitat where turkeys are scarce. This program has been quite successful. The Game Commission also works to improve turkey habitat, especially brood and winter range believed most critical for population expansion. Biologists continue to study the birds' needs and the best ways to provide for them. Penn's Woods now support about 100,000 wild turkeys.

Prime range exists in mountainous northcentral Pennsylvania in the area bordered by the Allegheny River on the west and the North Branch of the Susquehanna on the east. In the southcentral, maturing hardwood forests in the southwest-northeast sweep of the Allegheny Mountains support excellent populations.

Pockets of good or at least adequate range are spotted throughout the rest of the state, with the exception of the heavily urbanized portions of the southeast where there is essentially no range, and the southwest, where there are some good areas but most is marginal to poor.

What are a turkey's chances of survival, from egg to adult? The following statistics are from *The Wild Turkey and Its Management*, edited by Oliver H. Hewitt and published in 1967 by the Wildlife Society: (a) nesting success of the turkey is 35-40 percent, about normal for a ground-nesting species; (b) after hatching, 20-25 percent of all poults perish from June through September; (c) hunters take 13-33 percent of the fall population in areas where harvest of any age or either sex turkey is allowed; (d) the average annual mortality from all causes varies from 60-76 percent; and (e) studies in West Virginia and Florida indicate that the mean life expectancy of an individual wild turkey at birth is 1.3-1.6 years.

Habitat

Turkeys seem to prefer mature forests with adequate water sources and grassy openings. Shy and secretive, they shun areas of high human activity. Varied habitat—different tree and shrub species, differing ages within the same species—tends to provide year-round food and cover.

A turkey flock uses extensive area—several thousand acres—during a year to meet its needs, so the small landowner shouldn't expect to have a resident flock. However, anyone with forested land can do something to benefit turkeys, especially if neighboring landowners will cooperate.

Trees such as oaks, beech, cherries, etc., are most beneficial to turkeys when producing the maximum mast; this

occurs at age 50-100. Landowners can manage their woodlands for saw-timber, employing long cutting cycles and "pushing" young hardwood stands to maturity by culling out less-vigorous and non-mast-producing trees. Some woodland cuttings—which are non-economical in terms of timber management—can be made to allow more sunlight to reach grape, dogwood, greenbrier, hawthorn, viburnum, and other food-producing understory species.

Forest clearings are especially used by hens and poults. Here, sunlight penetrates the tree canopy and allows grasses and forbs to spring up; increased plant life gives rise to increased insect life, and insects form a key part of a young turkey's diet. Thus, forest openings resulting from cleared timberlands, old logging roads and logging camp sites, powerline rights-of-way, and old beaver meadows should be preserved. Spring seeps are also important, as they provide insect and vegetable food over winter.

Free water (streams, lakes, ponds, springs, seeps, rainwater in shallow depressions) should be available during the warmer months, while snow probably serves as an adequate source during winter. Artificial feeding? Turkeys don't generally need it, especially if they live in good habitat. Such feeding may actually pose a hazard by unnaturally concentrating a local population, thus increasing the danger of poaching and disease spread, and giving predators an unnatural advantage.

Every day, expanding towns and new roads cut into our state's limited amount of wildlife habitat. Second home development—booming in the northcentral's prime turkey range—is especially threatening. We cannot expect to continue taking land at this rate and still have animals like turkeys and bears which don't coexist well with man. Snowmobiles, trailbikes, and four-wheel-drives disturb turkeys, even though the drivers of these vehicles may never see a single bird; if such intrusion goes on too long, it can cause flocks to leave a given area for good.

Pennsylvanians can be proud of the wild turkey's restoration to this state. With enough concern for meeting *all* the birds' needs, we can enjoy them well into the future.

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