

Wildlife Management: Eastern Wild Turkeys

The Eastern Wild Turkey (*Meleagris gallopavo*) populations continue to expand at an ever-increasing rate in Maryland. The state's current wild turkey population is estimated at over 10,000 birds. This fact sheet describes the physical characteristics, distribution, history, mortality factors, and management techniques of Wild Turkeys.

Physical Characteristics

Superficially, the Eastern Wild Turkey resembles the domestic turkey that plays a

major role in Thanksgiving celebrations, but it differs in coloration and body shape. The rump feathers and rectrices (long tail feathers) are white tipped in the domestic bird, whereas they are cinnamon-brown and chocolate tipped, respectively, in the wild turkey. The overall body plumage of the wild turkey is a dark brown, appearing almost black in shaded conditions, with a metallic iridescence.

As is common in most birds, males and females differ somewhat in appearance. One of the more obvious features of the male turkey (tom or gobbler) is its beard, which



consists of a tuft of continuously growing, bristle-like feathers in the center of the breast. This characteristic is not a totally reliable criterion for determining sex, however, because approximately 5 percent of the females (hens) in eastern Wild Turkey populations also have beards. The hen's bluish gray (at least in the spring breeding season) head is sparsely covered with a few fine, short feathers, whereas an adult tom's featherless head is adorned (especially in spring) with caruncles (fatty, wart-like growths on the neck), wattling (fleshy lobes hanging from the throat or chin), and the leader, snood, or frontal caruncle (an oblong, fleshy appendix attached above the bill). The tom's head is colored in bright hues of red, blue, and white when in full strut display. The breast feathers of hens are buff tipped, whereas the tom's breast feathers are black tipped. Adult toms have a spur (toenail-like projection) above the foot. Toms are generally conspicuously larger than hens. Female poults (young turkeys) may average 8 to 9 pounds by late fall; young gobblers typically weigh 12 to 14 pounds. Adult hens and toms weigh about 10 to 12 pounds and 16 to 20 pounds, respectively, in late fall.

An indirect method of determining the sex of adult turkeys frequenting a certain area is to examine turkey droppings. Droppings of the adult male tend to be rather straight and elongated, with a slight curve on the end. Droppings from a hen tend to be looped, spiral, or bulbous in shape. Turkeys also have a flat, pancake-shaped dropping from which sex cannot be determined.

Poults (usually 16 to 24 weeks old during fall hunting season) can be distinguished most easily from adults by the uneven contour of the tail spread caused by the longer, central four to six rectrices; the pointed, unbarred tips of the wings' outer primaries (from one to three feathers); and brown-colored legs and feet (adult legs are pink).

Abundance and Distribution

During the precolonial period, Wild Turkeys were abundant, but as land was cleared and settled, their populations began to decline. Although exploitive marketing and sport hunting contributed to the population decline, the major factor was habitat

loss. As forests were decimated through extensive timber cutting, populations dropped steadily. By 1919 turkeys were declared by the state game warden to be absent from Maryland, with the exception of a few sections in the western counties. The first effort to promote the return of the wild turkey was a hunting season closure. Then came a program of importation and release of pen-reared birds, followed by a game farm propagation and release program. Other propagation methods were tried but were not successful, and the game farm program was terminated in 1971. However, trap and transplant efforts initiated in 1965 and continuing through today have proven effective in reestablishing turkeys in their former range.

Wild Turkeys occur naturally or have been reestablished in all of Maryland's 23 counties. More than 200 Wild Turkeys have been relocated in the past 3 years. Five counties—Baltimore, Caroline, Howard, Talbot, and Wicomico—have been stocked with wild birds. Several movements of birds have been made within counties to accelerate the natural expansion and growth of populations in a county.

Gobbling surveys and brood observations have shown that turkeys are moving out progressively from release areas. Reproduction has been reported at all release sites.

Life History of Turkeys

Reproduction

The production of sex hormones in adult toms is stimulated by the increasing daylight hours in the spring. The beginning of breeding season in early April is announced by the first gobbles of the males. Toms may gobble while on the roost at dusk or dawn, but gobbling is most often associated with the courtship displays that occur during the first few hours of each relatively mild, clear day of the breeding season. The gobble portion of the call can be heard up to a mile in favorable conditions. During the display strut, the gobbler's tail and wing feathers are fanned out, all body plumage is fluffed out, and the wings are positioned so that the tips of the outer primaries drag along the ground. The carun-

cles and wattling are gorged with blood and become crimson red, bright blue, and white. The neck is pressed back, with the head pressed forward onto the throat.

Interested hens respond with low, quavering clucks or high-pitched yelps and then frequently seek out the male. As each morning progresses, a gobbler may acquire a harem of several hens. Breeding displays continue into early June, even after the majority of the hens have deserted the gobblers to incubate their eggs.

Nesting

After being bred, the hen forms a rough 8-by 10-inch nest by twisting her breast into the forest's ground litter. Nests are generally located next to a log, tree trunk, or similar large protective object, usually under the cover of low-hanging branches or in tangles of briars, logging slash, honeysuckle, or grapevines in or near a forest opening. One egg is laid nearly every day until the clutch is completed at 12 or 13 eggs. Eggs are about the size of extra-large chicken eggs and are white to pale cream-buff with small reddish-brown blotches. During the egg-laying period, the hens are still attracted to displaying males and occasionally mate, even though only one successful mating is necessary to fertilize a clutch of eggs. Hens do not begin to incubate until a complete clutch is laid.

The peak of onset of incubation occurs in Maryland during the first week of May. Early in the incubation period, hens are easily frightened from nests, but they become much more steadfast as hatching time approaches. If the eggs are destroyed or a hen abandons a nest, she will usually reneest or continue to lay eggs until the clutch is complete. Incubation takes 28 days; the peak of the hatch normally occurs during early June.

Usually 24 to 36 hours elapse between the first and last hatching. Shortly after the chicks have dried and rested from hatching, the hen cautiously leads the brood to a nearby field or forest opening for their first nourishing, high-protein meal of insects. The chicks are very susceptible to exposure from any combination of rain, heavy dew, or cold temperatures. They are brooded by the hen during such conditions until they reach 2 to 3 weeks old, when they become

capable of flying to roosting sites with the hen. Hens breed in their first year. While toms are also capable of breeding in their first year, they are usually prevented from doing so by older, dominant males. Under ideal (captive) conditions, turkeys may live as long as 12 years, but in the wild few live past their second year.

Social Behavior

Wild Turkeys are gregarious—they readily associate with each other—and the composition of flocks varies through the seasons. A strict social hierarchy, or pecking order, based on sex, age, and size is maintained within all flocks. Several hens and their broods may flock together from midsummer into the fall. Adult gobblers are in small bachelor flocks from the end of the breeding season through the summer. By late fall or early winter a few adult toms may join the hens and poults, but flocks of similar-aged males (young of the year, yearlings, and 2-year-olds) are also common. Several flocks may briefly associate with each other in areas of concentrated food supplies late in the winter when food is limited.

Wild Turkeys are highly mobile. A resident flock of turkeys may use an area of up to 20 square miles over a period of a year. The shape and size of home ranges vary depending on seasonal food availability, terrain, and human land-use patterns. The mobility of individual turkeys varies considerably with their age and sex. Adult toms are the most sedentary, ranging only about 2 miles annually. Adult hens range about 2 1/2 miles per year, traveling with their poults from nesting sites to summer brooding areas and later to mature forests where mast is available in the fall. As a result of the territoriality of adult hens at nesting sites and the aggressive behavior of adult toms during breeding season, the subordinate juvenile males and females disperse from their original home ranges into less densely populated ranges during the spring of their first year. In Maryland, dispersal distances average 6 and 10 miles for juvenile toms and hens, respectively.

Food

Wild Turkeys might appropriately be called “vacuums of the forest” because of their varied eating habits. Almost any item that has

some nutritional value and can fit down a turkey's throat will be eaten. Adult birds readily eat new plant life of all kinds through the early spring: shoots of grasses, sedges, and forbs; buds, flowers, and leaves of shrubs and trees; and roots, tubers, and bulbs of perennials. Mast and dried fruits scattered in the forest's litter are also important components of their diet in the spring. Insects, centipedes, millipedes, spiders, snails, and slugs are vitally important to egg-laying hens and their chicks as high-protein foods from spring into summer. Grasshoppers, beetles, and crickets become choice food items in late summer. The fruits and seeds of nearly every species of plant are included in the summer diet.

Fall is a time of plenty for turkeys. Their high mobility allows them to locate and utilize any mast or fruit crop in their range: acorns, beechnuts, hazelnuts, wild cherries, wild grapes, flowering dogwoods, and wild raisins.

Winters of average snow accumulation pose no problem to Wild Turkeys. They can scratch through 4 to 6 inches of unpacked snow to reach covered nuts and seeds. Windswept grain and cornfields are important to turkeys in agricultural areas. Open spring-water seeps supply turkeys with nourishing animal life in the form of insects, snails, and crustaceans, as well as assorted seeds, fruits, grasses, and watercresses. When snow cover is impenetrable, turkeys will eat the buds of such species as aspen, birch, and mountain ash, although these are of only marginal nutritional value. Budding is of limited value because many branches containing buds cannot support the weight of a turkey.

Mortality Factors

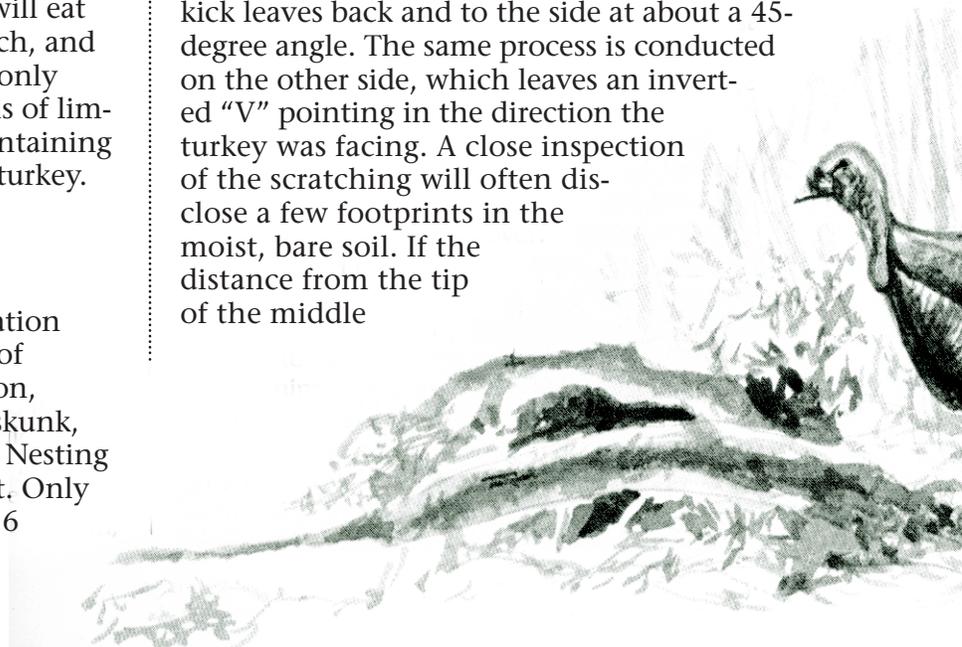
Turkey eggs are vulnerable to predation prior to the incubation period. A list of potential nest robbers includes raccoon, opossum, squirrel, red fox, gray fox, skunk, crow, domestic dog, and black snake. Nesting success may average about 55 percent. Only about 25 percent of poults survive to 6 weeks because of a combination of factors, including inclement weather, accidents, disease, and predation by raccoons, foxes, domestic dogs, hawks, and owls. No

predator is capable of regularly taking adult turkeys because of the birds' ability to defend themselves, their wariness, their speed on the ground (18 mph), and their ability to fly.

Wild Turkeys are susceptible to a multitude of diseases and parasites, many of which are transmitted to wild birds by domestic fowl. Blackhead (enterohepatitis) is routinely carried by chickens, which themselves seem to be immune to the disease. It is, however, extremely contagious and fatal to domestic and Wild Turkeys. Other less devastating diseases of the wild turkey are fowl typhoid, fowl cholera, avian tuberculosis, botulism, fowl pox, aspergillosis, coccidiosis, and trichomoniasis. The incidence and severity of these diseases is greatly influenced by population density and the ability of a range to support the resident turkey population.

Observing Wild Turkeys

Although Wild Turkeys are extremely shy and elusive, their presence in a woodland can be detected easily. On clear, mild, spring mornings, adult toms can be heard as they gobble in hopes of attracting hens. In the spring and fall, characteristic turkey scratchings can be found beneath nut or fruit trees. As a turkey searches for food items in leaf litter on the forest floor, it will typically stand on one foot, reach ahead with the other, and kick leaves back and to the side at about a 45-degree angle. The same process is conducted on the other side, which leaves an inverted "V" pointing in the direction the turkey was facing. A close inspection of the scratching will often disclose a few footprints in the moist, bare soil. If the distance from the tip of the middle



toe to the back of the heel pad is more than 4 1/2 inches, the tracks probably are those of a gobbler.

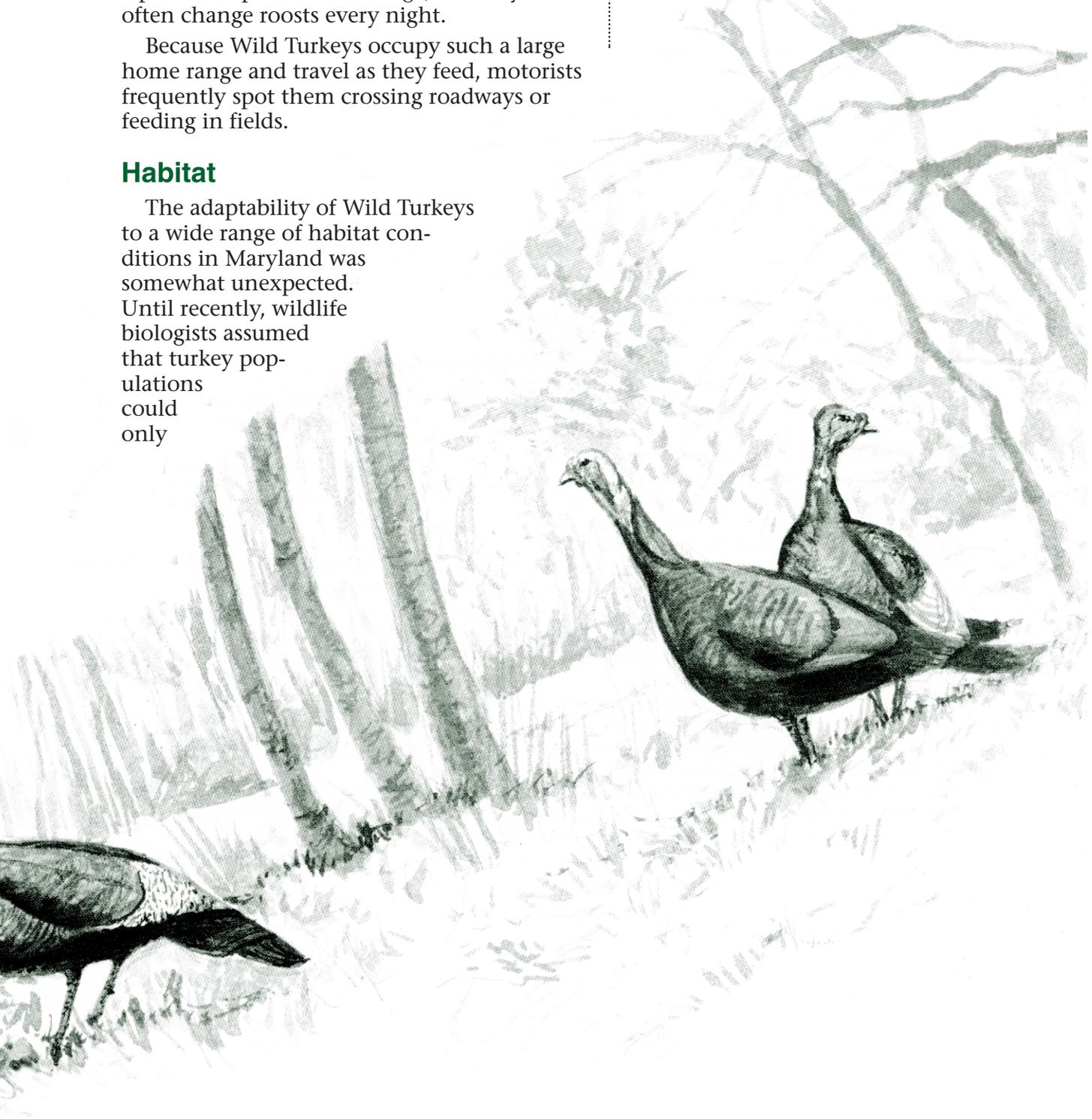
A flock occasionally returns to the same grove of trees to roost at night as they feed in a particular part of their range, but they more often change roosts every night.

Because Wild Turkeys occupy such a large home range and travel as they feed, motorists frequently spot them crossing roadways or feeding in fields.

Habitat

The adaptability of Wild Turkeys to a wide range of habitat conditions in Maryland was somewhat unexpected. Until recently, wildlife biologists assumed that turkey populations could only

exist in extensive stands of fully mature hardwood. It now appears that turkeys can expand into range that may be only 30 percent forest. The hardwood stands need only be mature enough to supply mast and have a closed canopy that



impedes the development of ground cover. Turkeys avoid dense cover where brush may hamper their ability to run or fly or to see approaching predators.

A minimum of 10 percent of the total range should consist of forest openings that can provide adequate insect food for young poults. Such plants as grasses and clovers also produce nutritious shoots, flowers, and seeds. Active agricultural land can be an important component of turkey range. Unharvested corn and fruits are readily eaten during winter shortages of natural food.

Plant species diversity is a measure of the ability of a range to support a stable turkey population. Although turkeys will eat a wide assortment of food items, adequate supplies of at least one item must be available at all times. Turkeys are particularly dependent upon good mast supplies as a winter food staple. A variety of mature nut tree species lessens the possibility of a complete mast crop failure, which could be disastrous to a turkey population.

Managing Wild Turkeys

The management of the wild turkey in Maryland (and in the East in general) has been an overwhelming success. Management thus far has centered around two activities: stocking of wild birds and controlled harvesting.

Limited hunting keeps turkey populations in balance with the ability of their range to support them. Overpopulation can contribute to conditions that would foster disease outbreaks. Spring hunting, when only bearded birds may be taken, is allowed in ranges with limited potential or newly established populations. Because males are polygamous and hunting seasons are held after most hens have been bred, spring harvests have only a minor impact on populations. Spring and fall hunting seasons, when turkeys of either sex are legal, are held in highly productive ranges with firmly established populations.

Habitat Management

Habitat management for any wildlife species consists of ensuring the creation or

continuance of all essential life support requirements of the species. In Maryland, little actual habitat manipulation was necessary to create favorable turkey range. Natural succession and agricultural practices contributed to the state's favorable habitat.

Trails, abandoned roads, utility rights-of-way, and logging headers may provide an adequate amount of open habitat for turkeys in many ranges. Where practical, such clearings should be mowed every 3 to 5 years to set back succession and promote the growth of perennials that provide seeds and berries. When necessary, new clearings should be at least one-half of an acre and round or square in shape to allow maximum sun penetration. Sites with disturbed ground cover as a result of bulldozing or logging activities generally must be limed and fertilized before planting grasses or clovers. Hens prefer to nest within a few hundred feet of clearings, so widely dispersed clearings reduce competition for nesting sites.

Small conifer plantations may be beneficial during cold weather. The older stands provide warmer roosting sites than the hardwoods and may be desirable during severe winters.

Certain land-use practices can improve or maintain current range. Logging on a selection-cutting basis, where only fully matured trees are removed, is not harmful to turkey range if an adequate number of young mast-producing trees remain. Clear-cutting small blocks of timber within large stands can be beneficial by providing additional forest openings where poults can find protein-rich insects to feed on. Thinning dense, pole-sized stands opens up the understory, which increases visibility and promotes faster maturity of remaining mast trees. The growth and maintenance of larger, older trees should be encouraged, both for mast production and as roosting sites. Although oaks provide a major food item (acorns), Wild Turkeys are opportunistic feeders and will eat seeds of maple, ash, cherry, dogwood, and other tree species. They will also eat grapes and the fruits of other vines and shrubs.

Food

The land surrounding the timber can be as important as the woodland itself. Wild Turkeys are adaptable and have learned to use

agricultural lands. The best practice is to have a variety of land uses surrounding the woodland. Waste grains, both corn and soybeans, are an important supplemental source of fall and winter food. Food plowing buries much of the waste grain and reduces the value of these fields for Wild Turkeys. Standing corn can be especially beneficial during deep snow. Pastures and hayfields are excellent feeding areas in the spring and summer. They provide green vegetation and are good places to find insects. Grazing or mowing creates shorter, less dense vegetation that allows the poults more freedom of movement while in search of food. Oat fields also provide green vegetation and are attractive in July as the oats ripen.

Adapted from:

Goff, G.R., D.J. Decker, J.W. Kelley, and R.A. Howard Jr. 1982. "Eastern Wild Turkey: New York's Wildlife Resources." Cornell Cooperative Extension Service; Ithaca, NY.

Dorf, B. 1989. "Maryland Wild Turkey Report." Maryland Department of Natural Resources Forest, Park and Wildlife Service; Annapolis, MD.

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This Wildlife Management series was published by Maryland Cooperative Extension with joint expertise and funding from the U.S. Fish and Wildlife Service and the Department of Natural Resources. Marylanders interested in wildlife management can refer to this series for basic wildlife management concepts, species' needs, management recommendations, habitat requirements, food and cover plants, and other general considerations. Contact your county Extension office for more information on wildlife management. Fact sheet titles in the full series are:

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Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, University of Maryland, College Park, and local governments. Thomas A. Fretz, Director of Maryland Cooperative Extension, University of Maryland.

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