

Mourning Dove Biology and Management

Greg Yarrow, Professor of Wildlife Ecology, Extension Wildlife Specialist

Fact Sheet 21

Forestry and Natural Resources

Revised May 2009

Pioneers settling in South Carolina during the 1600s encountered a small pigeon-like bird in and around forest openings. Although the passenger pigeon was larger and more numerous, mourning doves (*Zenaidura macroura*) were abundant enough to provide some source of pleasure with their low, mournful cooing and a limited amount of variety in table fare for our adventurous ancestors.

Unlike the passenger pigeon, which has long since given way to the pressures of our expanding nation, the mourning dove has increased along with the progress of civilization and become one of the most sought after game birds in the country.

The mourning dove is widely distributed within the U. S., occurring within all the contiguous 48 states. Northern segments of the population are highly migratory, but southern doves in general do not express as much seasonal movement as their northern cousins.

Smaller and more streamlined than its relative, the domestic pigeon, the mourning dove normally attains a length of 11 to 13 inches. Flight is strong and swift and the wings produce a whistling sound audible at close range.

The dove's fondness for roadsides, open woodlands, suburbs and farmland has familiarized most people with the plaintive "oach, cooo, cooo, coo" for which mourning doves were so justly named. The call is usually spaced every 4 to 6 minutes and, from a distance, only the last 3 coos may be audible.

Far from flashy in plumage, drab soft grays and browns give the bird an overall appearance to match its doleful call. Adults are slaty-brownish above with dark spots on the wings and back and a long, pointed, white-edged tail. The neck is reddish brown with an iridescent sheen, while the body's underside is pale tan with grayish wing linings.

Upon close examination, the adult male is distinguished from the female by prominent blue-gray feathers on the top of the head, a pinkish or rose-colored breast and obvious iridescence along the sides of the throat.

Like all members of its scientific family, the mourning dove has 2 characteristics which are rather unique in the bird world. While most birds must tilt their heads back to swallow water, the dove is capable of thrusting its bill into the water and drinking in a fashion similar to horses and cattle. Members of the dove family also produce a curdy secretion called "pigeon milk." This substance is produced by the lining



of the crop during the time of incubation and young rearing as a nourishing food for hatchlings.

Life History

Courtship begins with the coming of spring, when the male takes to the air with slow, laborious wing beats which may carry him upward for 100 feet or more. Upon reaching the apex of his flight, he spreads his wings and glides earthward in a sweeping circle. On the ground, he struts with nodding head and cocked tail, uttering a series of calls to his would-be mate.

In South Carolina, this courtship behavior is common from late February to October, reaching a peak in late spring and early summer, although it may be observed during any month.

Once a male has attracted a female, the pair mate and remain together during the entire breeding season. The chores of nest building are shared. When a suitable nest site has been selected, generally in pines, cedars, dogwoods, oaks or low-growing shrubs, the male begins to collect small twigs and sticks and presents them to the female for her arrangement in the nest. Nest sites are generally along field and pasture edges or adjacent to other open areas. In treeless areas, doves may construct ground nests similar to those built in trees. Ground nesting, however, is uncommon in South Carolina.

The first egg is laid a short time after completion of the frail, platform-like nest and is followed by a second egg in about 24 hours. Incubation begins immediately following completion of the 2-egg clutch, with both partners usually participating. If all goes well, the eggs hatch after 14 days and the young birds are fed pigeon milk and partially digested seeds until they are ready to leave the nest.

Young doves develop rapidly and are capable of limited flight at around 12 days of age. Soon after the young leave the nest, the adults begin preparation for a second brood, frequently using the same nest. However, they may start their nest-building procedures anew, or move to another nest constructed earlier. The entire process of nesting, incubating and young rearing may be carried out several times during the breeding season, with each cycle lasting about 4 weeks. In South Carolina, from 3 to 5 broods may be produced each year, and nesting doves have been observed during the winter months.

This high production rate is needed to balance the high mortality rate imposed by nature. The life span of the dove is generally between 1 and 3 years; however, most doves seldom live more than 1 year. Predation accounts for only a small percentage of doves lost. Disease and starvation may take a high toll in certain areas and under certain conditions.

A fairly common disease in doves is fowl pox, characterized by wart-like growths on the skin of the head and feet. This disease may indirectly cause mortality in mourning doves by blinding, or through the



Mourning dove nest

formation of obstructive lesions on the bill or in the throat which restrict feeding and cause death by starvation.

Another important disease affecting doves is trichomoniasis, which is caused by a small, single-celled organism known as a protozoan which infects the mouth, throat and crop areas. Doves are highly susceptible to this disease, and an outbreak in 1950 caused the death of more than 50,000 birds.

Severe winter weather may at times induce heavy mortality in dove populations. Deep snow, ice storms and unusually cold weather are especially deadly when they occur in the southern portion of the range, as these populations are not adapted to such weather extremes.

Food Needs of Doves

Mourning doves are vegetarian in food preference, dining on waste grains and other seeds. A majority of the southern dove's diet is composed of native and cultivated grasses including barley, oats, wheat, corn, millets, grain sorghum, Johnson grass, bullgrass, foxtail grass and crabgrass. Legumes such as cowpeas, soybeans and peanuts may also be taken, but are not as preferred as grass seeds. Other native foods are Carolina crainsbill, dove weed (wooley or tropic croton), morning glory, pokeweed, ragweed and sweetgum seed.

Like most seed-eating birds, doves require grit to help grind their food. Grit is normally composed of small bits of sand or gravel, but small snail shells and hard insect parts may also be used. In addition to food and grit, the dove requires a daily supply of fresh water to prevent dehydration and to soften and aid in digestion of food.

Habitat Improvements for Doves

Landowners wishing to attract this migratory, highly-mobile, and gregarious species for hunting, bird-watching or just to have them around will find the dove relatively easy to attract to their land. If hunting is desired, it is possible to concentrate the birds by planting fields or other idle areas to a preferred food.

In most instances, the best methods of attracting doves can be easily combined with or result from normal farming practices or grain harvesting procedures. In South Carolina, good dove concentrations are frequently found in "hogged-off" corn, peanut fields, and in fields from which wheat or corn has been combined or harvested.

Since doves prefer to alight, walk and feed on ground relatively free of dense vegetation, removal of excess vegetation by burning or light disking may be necessary. This practice also exposes waste grain and makes it readily available to the birds. Any field in which doves are being concentrated for hunting should be at least 5 acres in size.

Management procedures which are useful in September may not be valuable or practical in January. Therefore, the following specific management recommendations and suggestions are presented as a guideline for landowners wishing to have doves throughout the year.

September and October Dove Fields

Browntop millet is a highly preferred food frequently used to attract doves during the early season before corn is ready for combining. Browntop should be planted in a well prepared, fertilized seed bed, in 3-foot rows, at the rate of 10 to 12 pounds of seed per acre. Fertilizer should be applied as dictated by soil test and turned under prior to planting. Six hundred pounds of 6-12-12 per acre or the equivalent is commonly used. Browntop can be planted from mid-May to mid-June and young stands should be side-dressed with 180 pounds of ammonia nitrate per acre. Seeds should be planted no more than ¼ of inch deep to ensure germination and good seed-to-soil contact. Cultivation treatments should be carried out as often as necessary to keep the middles weed free, thus providing open feeding areas between the rows. Browntop matures in approximately 60 days.

Dove proso millet is another highly preferred grain that doves readily consume. Proso may be planted using the same method of fertilizer application as browntop. Eight to 10 pounds of seed per acre should be used. Fields of proso may be left unharvested or harvested much the same as browntop 2 weeks prior to hunting. Dove proso matures in approximately 90 days.

Wooley and tropic croton (dove weed) are native annual weeds that frequently volunteer in abandoned and cultivated fields. Commonly found in cotton fields, this plant matures seeds during the late summer and early fall and is usually responsible for large dove concentrations found in cotton fields. Where dove hunting is desired, measures for control should be restricted.

November-December and January Dove Fields

Carolina corn fields which have been picked, combined or “hogged down” as part of normal farming operations probably have more late fall and winter dove shooting than all other types of dove fields. However, for those who wish to provide an additional food source for doves, milo, higer and grain sorghum are very readily eaten by doves in the fall and winter. Farming procedures used to establish these crops are outlined in this section. Maturity for these plants is between 90 and 120 days.

For those wishing to hold doves for the entire season, browntop and milo may be planted in the same field in alternating strips of about 10 3-foot rows each. To have doves during the summer, or to concentrate them early for the fall hunting season, 1 to 5 acres planted to wheat in the fall and left unharvested will provide food during the summer months.

Other Management for Doves

In addition to providing resting, roosting and nesting cover, South Carolina forests, particularly pine types, may be managed during the early regeneration stage to provide concentrations of doves for hunting. Regeneration areas may be established in browntop by planting open strips between seedlings. Planting recommendations are the same as outlined above. Such areas normally provide good dove hunting until pine stands become thick enough to shade out ground vegetation.

Plantings also help to reduce competition to young pine from other vegetation.

Federal regulations specify that any practice not considered a normal agricultural practice is considered illegal, especially the top-sowing of small grains without covering seeds. Other practices which are illegal include the use of scratch feed, salt or returning to the field grain which has been harvested and stored. For information about what is considered a normal agricultural practice, contact your local county Clemson University Extension agent.

As regulations are subject to change, it is advisable to contact the South Carolina Department of Natural Resources (SCDNR) district offices or a conservation officer concerning the legality of current management practices. SCDNR and Clemson University have 2 helpful guides for preparing legal dove fields entitled *Attracting Doves Legally* and *SC Dove Hunting Guide* which can be found on the SCDNR website (www.dnr.sc.gov).

The following are some additional ways of improving land for the mourning dove:

1. Favor shrubs, clumps of pine trees and bushy fence rows for nesting.
2. Plow or disc fallow fields to encourage volunteer growth of native grasses and weeds as dove food.
3. Leave cultivated field corners in early successional vegetation to favor preferred dove food producing plants.