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Ground Dove use of young pine plantations.—Nesting and feeding habits of the Ground Dove (*Columbina passerina*) have been studied extensively in the lower Coastal Plain of the southeastern United States. Nesting has been recorded on the ground (Hopkins, Oriole 23:5-7, 1958), and in hardwood trees or shrubs, especially evergreens such as citrus trees (Nicholson, *Wilson Bull.* 49:101-114, 1937) and wax myrtle (*Myrica cerifera*) (Sprunt and Chamberlain, *South Carolina Bird Life*, Univ. South Carolina Press, Columbia, 1970). Most workers describe feeding habitat as thinly vegetated fields with some bare ground, in sandy, drier areas.

On 3 November 1977, we found 3 occupied Ground Dove nests in a 5-year-old slash pine (*Pinus elliottii*) plantation in Decatur County, Georgia. On 7 November, flushing counts were made along 4 transect lines, and each flushing site and each tree (planted and voluntary species) were examined for nests. Eight Ground Doves were collected for food habits analysis.

Seven active nests were located, 3 with a clutch of 2 eggs each, and 4 with 2 nestlings each. Nests were 0.4-1.5 m above ground on pine limbs containing witches'-brooms and fusiform rust (*Cronartium fusiforme*) cankers. No nests were found on the ground, or in oaks (*Quercus* spp.) or crabapple (*Malus angustifolia*), which composed 18% of the trees in the stand. The nests were sturdy, with a substrate of pine needles and oak and blackberry (*Rubus* spp.) twigs. The bowl-like interiors were composed of interwoven rootlets and grasses. They probably were refurbished nests built earlier by other species (see Nicholson, op. cit.). Young in all 7 nests were successfully reared to the fledgling stage; the last pair left the nest on 12 December. In a 0.7-ha portion of the stand, there was a density of 10 active nests per ha, and 36 volant Ground Doves (51/ha). Our findings represent the latest nesting dates recorded in Georgia and possibly the Southeast. Since active nests have been located as early as 23 January (Hopkins, op. cit.), this species may nest year-round.

TABLE 1
FOODS OF 8^a EASTERN GROUND DOVES FROM DECATUR COUNTY, GEORGIA, 1977

Item	November		December	
	Occurrence	Volume (%)	Occurrence	Volume (%)
Three-seeded mercury (<i>Acalypha virginica</i>)	4	95.9	3	27.8
Croton (<i>Croton glandulosus</i>)	3	3.0	2	4.3
Yellow wood sorrel (<i>Oxalis stricta</i>)	3	1.0	2	tr ^b
Eyebane (<i>Euphorbia maculata</i>)	1	0.1	2	15.5
Texas panicum (<i>Panicum texanum</i>)	—	—	3	18.5
Marsh elder (<i>Iva annua</i>)	1	tr	1	17.3
Amaranth (<i>Amaranthus</i> spp.)	—	—	4	14.5
Ragweed (<i>Ambrosia artemisiifolia</i>)	1	tr	1	1.3
Panic grass (<i>Panicum dichotomiflorum</i>)	3	tr	2	0.5
Bull grass (<i>Paspalum boscianum</i>)	—	—	2	0.3

^a Four were collected each month during November and December.

^b tr indicates trace amounts <0.1% volume.

Most birds were seen in crabapple thickets and all but 4 were in areas with an understory of blackberry and scrub oaks. Birds were often seen feeding on the ground in small clearings with sparse herbaceous cover, especially in a 1-year-old plantation adjacent to the nesting area. The major food item (Table 1) was three-seeded mercury (*Acalypha virginica*), an important food in young pine stands in the Piedmont region (Landers et al., Oriole 42:10-12, 1977). This plant flourishes in areas of disturbance associated with tree planting or agricultural practices where little or no herbicides are applied.

Seedling pine stands with patchy herbaceous cover provide a variety of desirable small seeds for food. The sapling stage plantations, if interspersed with bushy thickets and sparse ground-level vegetation, can provide favorable sites for nesting and roosting for Ground Doves and other species.—J. LARRY LANDERS AND JAMES L. BUCKNER, *International Paper Company, Southlands Experiment Forest, Bainbridge, Georgia 31717. Accepted 7 Sept. 1978.*

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Loggerhead Shrike eggshell thickness in California and Florida.—Eggshell thinning has been documented in numerous birds of prey. Magnification of pesticide residues through the food chain of these species is likely responsible for alterations in shell structure (Anderson and Hickey, Proc. 15th Int. Ornithol. Congr., 514-540, 1972; Cooke, Environ. Pollution, 4:85-152, 1973). Loggerhead Shrikes (*Lanius ludovicianus*) prey on invertebrates and small vertebrates (Bent, U.S. Natl. Mus. Bull. 197, 1950), and thus may be susceptible to residue buildup through their diet as reflected by eggshell thickness.

All eggs measured were at the Western Foundation of Vertebrate Zoology. Eggs collected in California (1948-1976) and Florida (1950-1968) were compared to eggs collected prior to 1947 (pre-DDT). The length and breadth of blown eggs were measured (nearest 0.01 mm) with dial vernier calipers and weighed (nearest 0.001 g) on a Mettler P 120 balance. A "shell thickness index" (Ratcliffe, Nature, 215:208-210, 1967) was calculated for all eggs. All post-1947 indices were combined as results did not vary between decades. Data on pesticide content of shrike eggs were not available.

Little difference was found in shell indices between pre- and post-DDT Loggerhead Shrike eggs (Table 1). The minor change in the California sample was likely attributable to observer error and/or sample size. About 28 clutches of Loggerhead Shrike eggs must

TABLE 1
THICKNESS INDICES OF LOGGERHEAD SHRIKE EGGS

Locality	Mean thickness index \pm SE (mm)		Percent change
	Pre-1947	Post-1947	
California	0.52 \pm 0.004 (20/113) ^a	0.53 \pm 0.005 (29/157)	+1.92 ^b
Florida	0.52 \pm 0.005 (17/81)	0.52 \pm 0.006 (14/66)	—

^a Total number of clutches/total number of eggs within clutches.

^b $P > 0.05$, $df = 47$, t -test.