

# GRACKLE CONTROL AS AN AID TO WHITE-WINGED DOVE MANAGEMENT<sup>1</sup>

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Transects established to measure whitewing nesting success have revealed that doves are subject to heavy (50-75 percent of the eggs laid) nesting predation. Prior research (Blankinship's study in 1964-1965) has indicated that whitewing (*Zenaida asiatica*) production can be increased 100 percent if boat-tailed grackle (*Cassidix mexicanus*) numbers are controlled during the nesting season. This project was initiated in the Lower Rio Grande Valley of Texas in 1967 to determine the effects of grackle control on white-winged dove and grackle nesting success.

Work with poisons as a grackle control technique began in 1961. Anticoagulants, 1080, DRC-1339, DRC-1861, and methoxymol were some of the chemicals tried. DRC-1339 (3-chloro-p-toluidine Hydrochloride), a slow acting uremic poison, appeared to have the best chance for success. Cage studies determined that DRC-1339 is lethal to grackles at 1-1.5 mg/kg, while it takes 5.6 mg/kg to kill whitewings. DRC-1339 blocks the passage of wastes by breaking down the cellular tissue in the kidneys (DeCino). The poison poses little threat of secondary poisoning. Death normally occurred from 24 to 96 hours which prevented target species from becoming bait shy.

Two areas were used for this study, the Longoria Unit of Las Palomas Wildlife Management Area, which was used for the treatments, and La Paloma Brush, which was used as a "control". The Longoria Unit is 200 acres in size, and La Paloma is 15.5 acres. Both tracts are in Cameron County, Texas, and their vegetation is similar.

Whitewing and grackle populations were censused before and after control techniques were applied to determine the effectiveness of the method. Usage of the two areas by both species fluctuated widely in numbers depending upon range conditions and other factors. However, the Longoria Unit has steadily declined in whitewing numbers since the high of 17,000 breeding birds in 1958. Comparative population figures for whitewings and grackles using the Longoria Unit are listed below by years.

<u>Year</u>	<u>Whitewings</u>	<u>Grackles</u>
1964	4,500	No census
1965	6,300	No census
1966	3,400	No census
1967	2,250	No census
1968	12,050	No census
1969	4,400	15,500
1970	5,610	6,000
1971	4,320	9,700

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In May, 1969, a test was initiated to determine corn consumption by grackles. When one pound of whole kernel corn (1,600 kernels) was put in an elevated pan, 1,200 kernels were consumed in 30 minutes by 259 grackles. Corn rather than other grains was used because its size prevented most non-target species from taking the bait.

In 1970, 6,097 visits by grackles were made to watering pans in 147 hours of observing. Three hundred and ten other birds visited the poisoned water pans during the period. Ninety-five per cent of the species visiting poisoned water pans were target birds. Early afternoon and near sundown were the two peak periods of grackle usage. During the observation period, 90 percent of the male grackles watered after 5:00 p. m. During midday and until 5:00 p. m., females made up 98 per cent of the ratio. Grackles took an average of 6.37 drinks per visit with each drink averaging .40 ml.

Forty-four grackles were found dead in July, 1970, when the poisoned watering pans received heaviest usage. To determine the rate of disappearance, dead grackles were placed at known locations in 1969 and 1970 on the Longoria area. Results indicated that 6 out of 7 grackles, or 85 per cent, would be gone within 24 hours. Other remaining grackles would be consumed by ants.

A poison solution of .07 per cent was coated on one out of 10 kernels of corn which were distributed in elevated pans. The poison water solution was 10 grams of DRC-1339 mixed with 50 gallons of water. Both baits were changed weekly throughout the control periods.

During the nesting season, transects, which were ¼ acre in size and randomly located on Longoria and La Paloma, were checked weekly to determine the nesting success of both grackles and whitewings. The percentage of eggs fledging young was the criteria used to measure how successful each species was in reproducing.

Five years data from nest transects are listed below. Results from these nest transects are the most substantial evidence to date showing that grackle control does increase nesting success for whitewings.

	Whitewing Nesting Success	Grackle Nesting Success
1967	43% on Longoria 18% on La Paloma 19% on other brush	No census No census No census
1968	49% on Longoria 27% on La Paloma 27% on other brush	No census No census No census
1969	50% on Longoria 37% on La Paloma 31% on other brush	No census No census No census
1970	56% on Longoria 25% on La Paloma 19% on other brush	62% on Longoria No census No census
1971	44% on Longoria 41% on La Paloma 22% on other brush	62% on Longoria 60% on La Paloma No census

In four of five years data, the results indicated that suppression of grackle populations increased white-winged dove nesting success. The percentage of eggs fledging young ranged from 13 to 31 per cent higher on the Longoria Unit, where grackle control was practiced. Management implications derived from this study indicate that it is possible to increase nesting success of whitewings by using DRC-1339 as a poison to suppress the grackle population.

#### LITERATURE CITED

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- DeCino, T. J., Cunningham, D. J., and Schafer, E. W. 1966. Toxicity of DRC-1339 to Starlings. J. Wildl. Mgmt. 30(2):249-253.

### **A 2-ACRE ENCLOSURE FOR TREE SQUIRREL RESEARCH**

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Our study was designed to determine if a large outdoor enclosure is suitable for evaluating the shelter requirements of gray squirrels. We designed and tested an escape-proof enclosure to determine how many squirrels could be maintained without overpopulation, and to determine if reproduction would occur.

A 2-acre area in a stand of mixed hardwood about 40 years old with low mast production and few den sites was selected in the West Virginia University Forest, 11 miles east of Morgantown. The tree canopy was removed from a 30-foot wide strip centered on the fence line, leaving approximately 1.5 acres of canopy inside the enclosure.

The squirrel-proof fence was 7.5 feet high with a 3-foot strip of 28-gage sheet metal attached above the 5-foot high base course of 1-inch mesh wire. A 3-foot wide 1-inch mesh wire was laid on the ground and attached to the bottom of the fence to prevent animals from going underneath. Materials cost approximately \$2,000, and 125 man-days were used to build the fence.

We plugged the natural dens and installed 10 den boxes (Barkalow and Soots 1965) 20 to 25 feet up in trees. We did not interfere with leaf nest construction and maintenance. An observation platform was constructed near the enclosure center.

Natural foods were supplemented with corn and laboratory rat chow *ad lib*. Drinking water was supplied. Squirrels were ear-tagged and fur-marked with Nyanzol D dye. (Use of a trade name is for information only, and is not an endorsement by the U. S. Department of Agriculture.) External parasites were controlled by rotenone, and sodium sulfamethazine was added to the drinking