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DISTRIBUTION OF WINTER REDWINGED BLACKBIRD POPULATIONS ON THE ATLANTIC COAST

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The Coastal Plain Province of the Southeastern States is the principal wintering ground of Redwinged Blackbirds (*Agelaius phoeniceus*) that breed in the coastal marshes of the North and Middle Atlantic States, where they also form huge late-summer aggregations. The winter concentration area along the coast extends from about New York City to southeastern Georgia. Most of the Redwinged Blackbird population winters south of the mouth of the Chesapeake Bay, in the Middle and Outer Coastal Plain. In this Southeastern Coastal Plain area, U. S. highway 301 can be considered a tentative inland boundary, as far as significant numbers are concerned. Although appreciable numbers of Redwinged Blackbirds have been recorded during the winter in the southern Piedmont, and some in the southern mountain areas, all winter recoveries of birds banded on the breeding grounds and summer feeding grounds in the Northeastern and Middle Atlantic States have been east of the Fall Line, and mostly south of Chesapeake Bay.

Since 1957, the blackbird banding program of the Fish and Wildlife Service in the Eastern States has been accelerated, and the distribution picture may be somewhat altered when an appreciable number of additional recoveries have been made. It is expected, however, that the general pattern will be unchanged, for the moderate climate, bountiful food supply, and abundant protective roosting cover of the Coastal Plain south of the Chesapeake Bay apparently provide an optimum wintering ground.

POPULATION CENTERS

The important winter population centers south of Chesapeake Bay are, in order of relative abundance of birds: (a) the Virginia-Carolina Peanut Belt that extends from the Suffolk area of Virginia to Beaufort County, North Carolina; (b) the Lower Cape Fear River region; and (c) coastal South Carolina, from the Lower Santee River to southeastern Georgia.

In the Middle Atlantic States, the most important population center is in the Delaware-Chesapeake Bay region. In some years a secondary population center is near the coast along the Raritan River just south of New York City.

DISTRIBUTION OF ROOSTS

Most of the larger Redwinged Blackbird roosts are in the Virginia-Carolina Peanut Belt. Since the many flocks of Redwinged Blackbirds

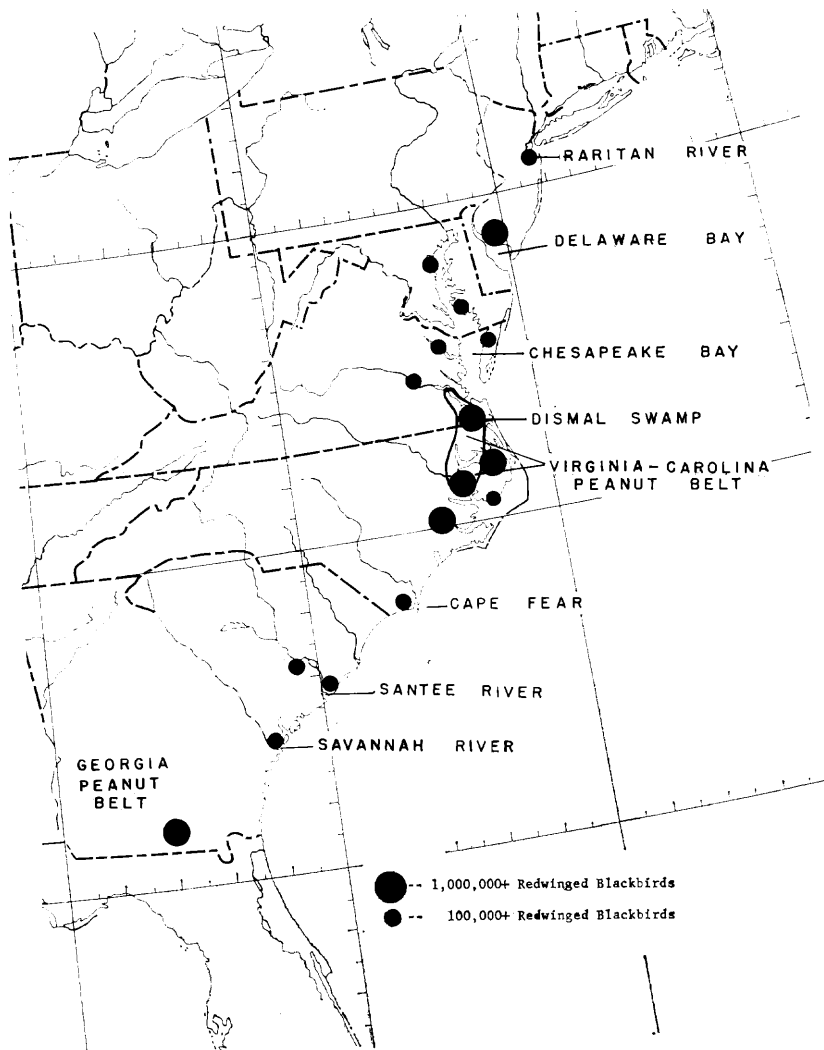


Figure 1. Winter Distribution of Redwinged Blackbird Roosts on the Atlantic Coast, 1957-1960. All large roosts contain mixed populations including Redwinged Blackbirds, Common Grackles, Cowbirds, Rusty Blackbirds and Starlings.

along the South Carolina and Georgia coasts are comparatively small and the roosts are small, it is likely that the total population is smaller than that of the Virginia-Carolina Peanut Belt.

The largest known winter roost is in the Dismal Swamp south of Norfolk, Virginia, near the Virginia-North Carolina line. The population in this roost is estimated 15,000,000 blackbirds, of which approximately 8,000,000 are Redwinged Blackbirds. Other large roosts located in recent years in eastern North Carolina are at Pinetown (4,000,000 blackbirds: 1,500,000 Redwinged Blackbirds); Columbia (2,000,000: 1,000,000); Trenton (2,000,000: 1,100,000); and Bolivia (200,000: 100,000).

North and south of the North Carolina Coastal Plain, smaller winter roosts are scattered through the tidal marshes. Most of these roosts are in the estuarine marshes along the lower reaches of coastal rivers near the upper limits of tidewater, where the taller fresh and brackish marsh plants are dominant.

The most important population center north of the mouth of Chesapeake Bay is the section of the Delaware Valley that includes the New Jersey Counties of Salem and Cumberland and most of Delaware. In January 1960, an immense roost containing an estimated 2,500,000 Redwinged Blackbirds was located at Artificial Island, Salem County, New Jersey.

BANDING RECOVERIES

Breeding Ground Derivation — R. T. Mitchell's analysis of recoveries indicates that Redwinged Blackbirds banded in eastern Canada, New England, and the Middle Atlantic States during the breeding season (April 16 to July 20) were recovered in winter (December 1-February 15) in states along the coast from the Lower Chesapeake Bay to Florida. Twenty-six out of 33 of the Redwinged Blackbirds recovered were near the coast between Norfolk, Virginia and Savannah, Georgia, mostly in the Carolinas.

Summer Feeding Ground Derivation — R. T. Mitchell's analysis of recoveries of Redwinged Blackbirds banded during the late summer feeding period (July 21-September 15) in the Northeastern States (north of Chesapeake Bay) and recovered on the wintering grounds between December 1 and February 15, reveals that 54 of 60 recoveries were made in the area between Norfolk and Savannah. Thirty-seven were from North Carolina.

FACTORS AFFECTING DISTRIBUTION

Blackbirds are diurnal migrants that naturally follow waterways and the coast line. It therefore seems plausible that the general north-south drainage system of the Coastal Plain Province of the Middle Atlantic and Northeastern States tends to funnel the blackbird population into the Dismal Swamp and Virginia-Carolina Peanut Belt south of the mouth of Chesapeake Bay.

Three other important factors that seem to influence the winter distribution of Redwinged Blackbird populations are climate, food, and roosting cover. All three are favorable in the Virginia-Carolina peanut belt and contiguous areas. Winter weather is generally mild,

and the interspersions of agricultural and forest land provides ample food and cover. In sections where there is more forest land than cultivated land, blackbird populations are sparser. This is true in much of eastern South Carolina and Georgia, where more and more of the land is being planted to pine.

During milder winters, a fairly large Redwinged Blackbird population is present in the Delaware Valley and Chesapeake Bay area. Corn left in the fields from mechanical corn picking probably is important in holding Redwinged Blackbirds this far north in winter.

CHARACTERISTICS OF ROOSTING COVER

Roosting areas of large aggregations of Redwinged Blackbirds usually are in wetlands and often are remote and inaccessible. In the main wintering grounds of the Atlantic Seaboard, roosts are in three principal cover types: Phragmites cane (*Phragmites communis*) and Big Cordgrass (*Spartina cynosuroides*) in the Delaware Valley-Chesapeake Bay area; swamps and pocosins in southeastern Virginia and eastern North Carolina; Giant Cutgrass (*Zizaniopsis miliacea*) and Big Cordgrass in coastal South Carolina and Georgia. The stands of Phragmites cane usually are found in tidewater, where the plants average 10 feet high and form dense cover. Big Cordgrass grows in brackish marshes, where it averages 7 feet high and provides good roosting cover.

The great pocosin swamps or bogs of the Coastal Plain section of North Carolina contain the most impenetrable thickets anywhere in eastern North America. The jungle-like aspect of these areas results from a dense undergrowth of shrubby broad-leaved evergreens mixed with catbriers (*Smilax laurifolia*). Solid stands of Pond Pine (*Pinus serotina*) form the overstory. Most blackbird roosts are in this mixture of thickets and pines, although some are in the canebrakes (*Arundinaria*) of the same region.

Along the lower reaches of many of the Coastal Plain rivers of South Carolina and Georgia, Redwinged Blackbirds roost in small flocks in Giant Cutgrass. This plant forms extensive stands in the fresh tidal zone of the river estuaries, where it reaches 6 or 7 feet in height.

Although the principal winter Redwinged Blackbird roosts have been geographically located as depicted in Figure 1, others may exist in the rather extensive area of interest. Readers who know or learn of other roost locations are urged to contact the authors of this article.

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GENERAL NOTES

A Method of Recording Feather Molt in Birds.—While studying the molts in several species of birds, I was hampered by the tedious method of recording the stages of molt through which individual birds were passing. Taking written notes on feather loss and gain in several of the pterylae seemed to occupy too much time. In searching for a faster, more accurate method I came upon a process which may be of use to other banders.