46-year Trends of Wintering Nine-primaried Oscines in Urban and Rural Areas of the North Carolina Piedmont

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Abstract.—Forty-six years of Christmas Bird Counts were analyzed to determine population trends for 17 species of nine-primaried oscines in the Piedmont region of North Carolina. Comparisons of composite trends from seven count circles in six urban counties and twelve count circles in eleven rural counties revealed that: 1) avian populations are more likely to change in urban areas than in rural areas; 2) the declining populations outnumber the increasing ones; and 3) a majority of the increasing species are ones regarded as pests.

INTRODUCTION

Most ornithologists believe that as an area becomes urbanized local bird populations change because of changes in vegetation, alteration of food resources and other modifications of the habitat (Terborgh 1980, Welty 1982, Odum 1983, Mills, et al. 1989, Temple and Wiens 1989). The Piedmont region of North Carolina is an area that has experienced a significant increase in the number of humans since 1940. While the human population in the state has grown from 3,571,623 in 1940 to 6,628,637 in 1990 (almost doubled), some Piedmont counties have more than tripled their human populations (Table 1).

Table 1

Circle Name	County	Human Numbers 1940	Human Numbers 1990	% Change	Human Density 1990	No. Yrs. CBC Run
Alamance Co.	Alamance	57,427	108,213	+88%	97	1
Concord	Cabarrus	59,353	98,935	+66%	105	2
Lenoir	Caldwell	35,795	70,709	+97%	58	23
Chapel Hill	Orange	23,072	93,851	+306%	91	44
Elkin/Ronda	Surry	41,783	61,704	+47%	44	24
Henderson	Vance	29,961	38,892	+30%	60	25
Statesville	Iredell	50,424	92,931	+84%	62	21
Jordan Lake	Chatham	24,726	38,759	+56%	21	14
Pilot Mountain	Surry	41,783	61,704	+47%	44	4
Roanoke Rapids	Halifax	56,512	55,516	-2%	30	17
Rockingham Co.	Rockingham	57,898	86,064	+48%	58	17
New London	Stanly	32,834	51,765	+57%	50	22
Charlotte	Mecklenburg	151,826	511,433	+236%	374	46
Durham	Durham	80,244	181,835	+126%	235	25
Gastonia	Gaston	87,531	175,093	+100%	189	9
Greensboro	Guilford	153,916	347,420	+126%	206	46
High Point	Guilford	153,916	347,420	+126%	206	8
Raleigh	Wake	109,544	423,380	+286%	191	46
Winston-Salem	Forsyth	126,475	265,878	+110%	249	45

This pattern has been repeated in many parts of eastern North America as urban areas expand into rural areas (Guilford County Planning Department 1986). As people move, they convert open agricultural land and woodlots into more densely populated and differently planted residential and industrial areas.

Changes in local bird populations are often discussed in conjunction with the annual Audubon Christmas Bird Counts. At meetings to tabulate the counts, longtime observers often report that bird species in their traditional count territories seem to be declining. Some of these areas, which were once forested or lightly inhabited, are now residential neighborhoods. In some cases the area itself seemed the same, but some bird species, once counted there regularly, had declined in numbers or were completely missing. Regional reports published every year in *American Birds* echo these perceptions in many areas of the country (Temple and Wiens 1989).

To determine if there have been any significant changes in the numbers of wintering nine-primaried oscines (families Emberizidae and Passeridae, AOU Checklist 1983) over the last 46 years, we analyzed the counts from 19 North Carolina Piedmont Christmas Count circles and also analyzed human population growth for the county in which the circle is located. We have listed the count circles and their respective counties in Table 1. The locations of these circles are shown on Figure 1. The areas sampled appear to fall into two distinct categories based on human population density: urban counties with populations greater than 185 people per square kilometer and rural counties with populations of fewer than 110 people per square kilometer. We attempted to discover whether patterns of bird populations varied the same way at different densities of human population.

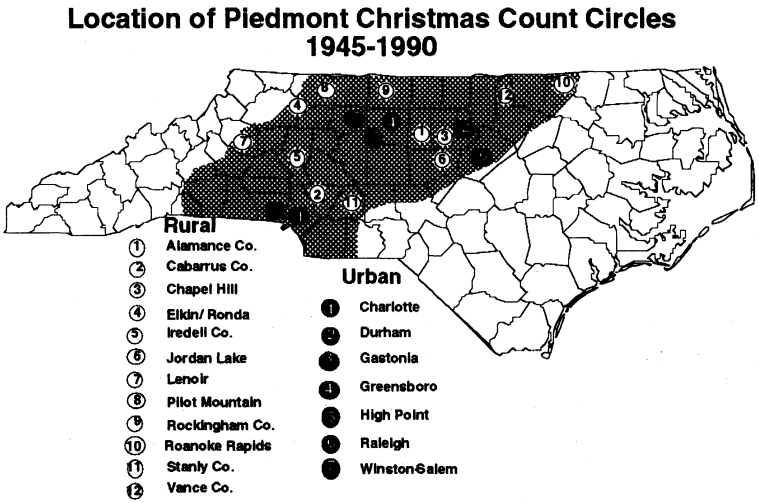

Figure 1. Map of North Carolina showing the location of the Piedmont and the twelve rural and seven urban Christmas Count circles from the Piedmont that provided data for the period 1945–1990.

We chose to use Christmas Counts because they represented a body of information on bird populations over a long period of time. When bird studies are

confined to just a few years, it is not possible to obtain a long-term profile of population dynamics (Wiens 1977, Temple and Wiens 1989). Studying only the wintering birds eliminated many spring and fall migrants which enabled us to focus on species that are most likely to be affected by local conditions.

Table 2: Species Examined

Common Name	Scientific Name	Urban Trend	Rural Trend	Residence Status
Yellow-rumped Warbler	*Dendroica coronata*	increased	no trend	Winter
Pine Warbler	*Dendroica pinus*	down, then up	no trend	Permanent
Northern Cardinal	*Cardinalis cardinalis*	up, then down	up, then down	Permanent
Rufous-sided Towhee	*Pipilo erythrophthalmus*	up, then down	up, then down	Permanent
Field Sparrow	*Spizella pusilla*	decreased	no trend	Permanent
Savannah Sparrow	*Passerculus sandwichensis*	no trend	no trend	Winter
Song Sparrow	*Melospiza melodia*	up, then down	up, then down	Permanent
White-throated Sparrow	*Zonotrichia albicollis*	up, then down	up, then down	Winter
Dark-eyed Junco	*Junco hyemalis*	decreased	no trend	Winter
Red-winged Blackbird	*Agelaius phoeniceus*	increased	no trend	Permanent
Eastern Meadowlark	*Sturnella magna*	up, then down	decreased	Permanent
Common Grackle	*Quiscalus quiscula*	increased	no trend	Permanent
Brown-headed Cowbird	*Molothrus ater*	increased	no trend	Permanent
Purple Finch	*Carpodacus purpureus*	up, then down	up, then down	Winter
House Finch	*Carpodacus mexicanus*	increased	increased	Permanent
American Goldfinch	*Carduelis tristis*	no trend	no trend	Permanent
House Sparrow	*Passer domesticus*	up, then down	up, then down	Permanent

The 17 species whose populations we examined are listed in Table 2. We chose these species because of their taxonomic similarity and the high consis-

tency with which they are observed on counts in the region. All but five are permanent residents of the North Carolina Piedmont, although the numbers of wintering individuals for many of these species are surely reinforced by migrants that breed farther north. The five species that are purely winter visitors in the study region are Yellow-rumped Warbler, Savannah Sparrow, White-throated Sparrow, Dark-eyed Junco and Purple Finch.

The 19 Piedmont cities tend to have similar habitats. Many of them have established bird clubs that contribute regularly to the Christmas Counts. Pooling the individual count circles together into composites by human density allowed us to look for broadly based rather than local trends. This technique increased the sample size and improved the ability to differentiate statistically significant trends from localized variations or "noise" (Wilcove and Terborgh 1984).

MATERIALS AND METHODS

Using the annual Audubon Christmas Bird Counts, we evaluated bird populations from all available Piedmont North Carolina circles . We obtained the data for each year from 1945 to 1990 from the appropriate issues of *The Chat* and *American Birds* (formerly *Audubon Field Notes*). Earlier counts were not examined because we suspected the observations were not comparable, in part owing to the influences of World War II.

From the published count material we recorded the number of each species seen, the number of observers in the field, the number of parties in the field and the number of party hours spent in the field. Because there were wide fluctuations in the number of observers and the amount of time spent in the field, we normalized numbers of birds counted so that they could be compared realistically. We used the number of birds per 100 party hours as our normalization format. We then used the normalized numbers to determine running 5-year averages, variances and standard errors of the mean.

Because year-to-year fluctuations are of less importance than long-term trends, we used running five-year averages, a technique used effectively by Brown (1973). Much of the annual variation probably results from the margin of error in the count technique (Bock and Smith, 1971). Use of running averages provides graphs with smoother lines that are easier to read. Averaging also spreads out the effect of a year with unusual weather. In the Piedmont of North Carolina, the weather on the count day can vary from exceedingly cold to almost spring-like. Weather affects the total number of birds counted, especially among the small passerines, in part because it affects the diligence of the counters.

We used DeltaGraph Professional (v.2.0, DeltaPoint, Inc., 2 Harris Court, Suite B-1, Monterey, CA 93940) to graph the data for each species in each circle. Using this program, it was possible to run linear regressions as well as second- and third-order curvilinear regressions of mean bird numbers against year. Examination of these regressions indicated which species were showing significant changes in population, but frequently masked recent changes that appear to be important. Therefore, we present only the graphs of running means plus or minus two standard errors of the mean.

For each of the circles studied, we examined the description of the count territory in the annual Christmas Count report to determine if it had changed

significantly over the years. The center of the Charlotte circle had shifted 4.5 miles to the west, the center of the Raleigh circle had moved 1.7 miles SW and the center of the Durham circle had moved approximately 5 miles NNE. In all cases this placed more of the unincorporated area of the county in the count circle than had been true previously. We do not believe these shifts render the before-and-after comparisons unreliable. If anything, the changes in sampling areas are an attempt to maximize the number of species and individuals that can be counted. The locations of the other sampling territories appear to have remained unchanged. However, closing the dam to fill Jordan Lake in 1981 (after four count years) placed much of the lowland habitat within the count circle under water and caused loss of much songbird habitat.

Because participation in the Christmas Counts has not been continuous for all 46 years in many of the areas, particularly in the less densely populated areas, we have combined the observations into composite graphs. The composites were generated by summing raw counts for each circle for each year and dividing by the sum of party hours for each year. Five-year running means, variances, and standard errors were then calculated in the standard ways.

We determined significance of changes in means by visual inspection of the graphs. If the error bars (two standard errors = 95% confidence limits) did not overlap, we considered the means to have changed in a way that is statistically significant.

Human population changes were obtained from the decennial censuses conducted by the U.S. Department of Commerce for 1940 through 1990.

RESULTS

Figures 2 through 7 show the results of graphing the Christmas Count data as running five-year averages, for 17 common species of nine-primaried oscines found in the Piedmont of North Carolina. We have presented the data as composites of urban and rural count circles based on density of human populations in the county of the count circle. Five-year running means of the number of birds per 100 party hours are plotted at the median year. Error bars, representing two standard errors of the mean, are included to facilitate determination of significance. In Figure 6, because of the huge variability in annual numbers of blackbirds recorded, we have plotted the data as logarithms; all other plots are as integers.

Figure 2 shows three resident species with similar patterns of population trends. The Northern Cardinal (*Cardinalis cardinalis*), Rufous-sided Towhee (*Pipilo erythrophthalmus*), and House Sparrow (*Passer domesticus*) all underwent significant increases between the 1940s and the mid-1970s followed by equally significant declines to the present. In each case there appears to have been no significant change from the beginning to the end of our sampling period. These trends are the same in both the urban and rural counties.

Figure 3 portrays the population trends of three closely related species: Song Sparrow (*Melospiza melodia*), White-throated Sparrow (*Zonotrichia albicollis*), and Dark-eyed Junco (*Junco hyemalis*). Only the Song Sparrow is a permanent resident, although its winter numbers are enhanced by northern migrants. It is apparent that Song and White-throated sparrows both underwent significant overall increases in the urban counties from the early 1960s to the late 1970s. Notice, however, that both of these species have declined signifi-

cantly in the urban counties since the late 70s. White-throated Sparrow populations appear to exhibit a similar pattern of change in the rural counties. Song Sparrows increased significantly in the rural counties during the 1970s but appear to be declining at present. Although the Dark-eyed Junco has declined significantly in the urban counties since the mid-1970s, it has maintained steady numbers in the rural counties.

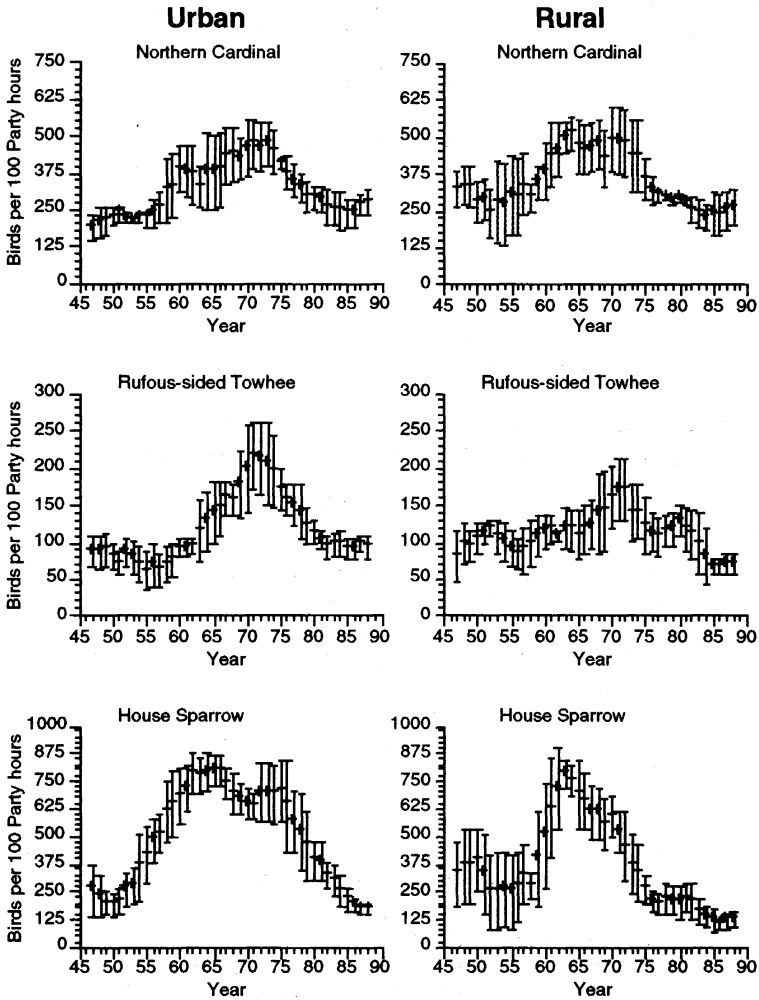

Figure 2. Graphs of five-year running means of birds per 100 party hours for the period 1945–1990 comparing Northern Cardinal, Rufous-sided Towhee and House Sparrow in rural and urban settings. Error bars extend ± two standard errors of the mean (95% confidence limits).

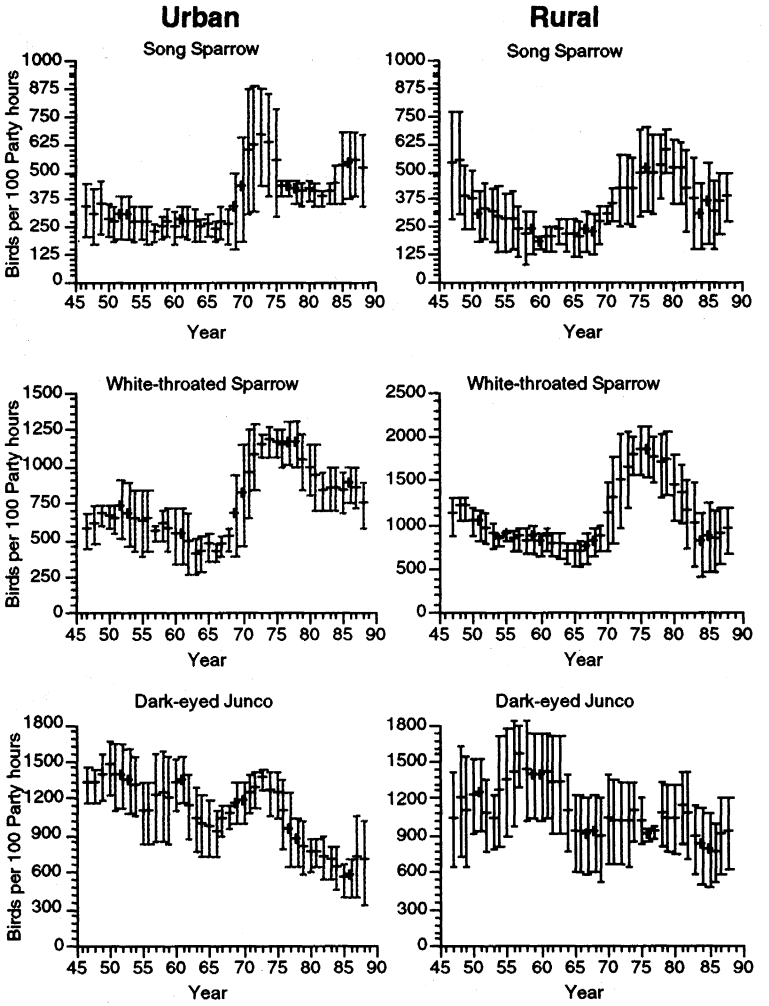

Figure 3. Graphs of five-year running means of birds per 100 party hours for the period 1945–1990 comparing Song Sparrow, White-throated Sparrow and Dark-eyed Junco in rural and urban settings. Error bars extend ± two standard errors of the mean (95% confidence limits).

Figure 4 depicts the populations of the common cardueline finches in the North Carolina Piedmont. American Goldfinch (*Carduelis tristis*) does not appear to have undergone any significant overall changes in either the urban or the rural counties, although there appears to have been an increase during the last decade in the rural counties. The House Finch (*Carpodacus mexicanus*) first appeared in the Piedmont in November 1962 and has shown classic exponential population growth ever since. Although the species is clearly more abundant in the urban counties, the pattern of growth is the same in both areas.

The Purple Finch (*Carpodacus purpureus*) shows a pattern of increasing populations from the middle of the 1940s until the early 1970s, after which it underwent a significant decline.

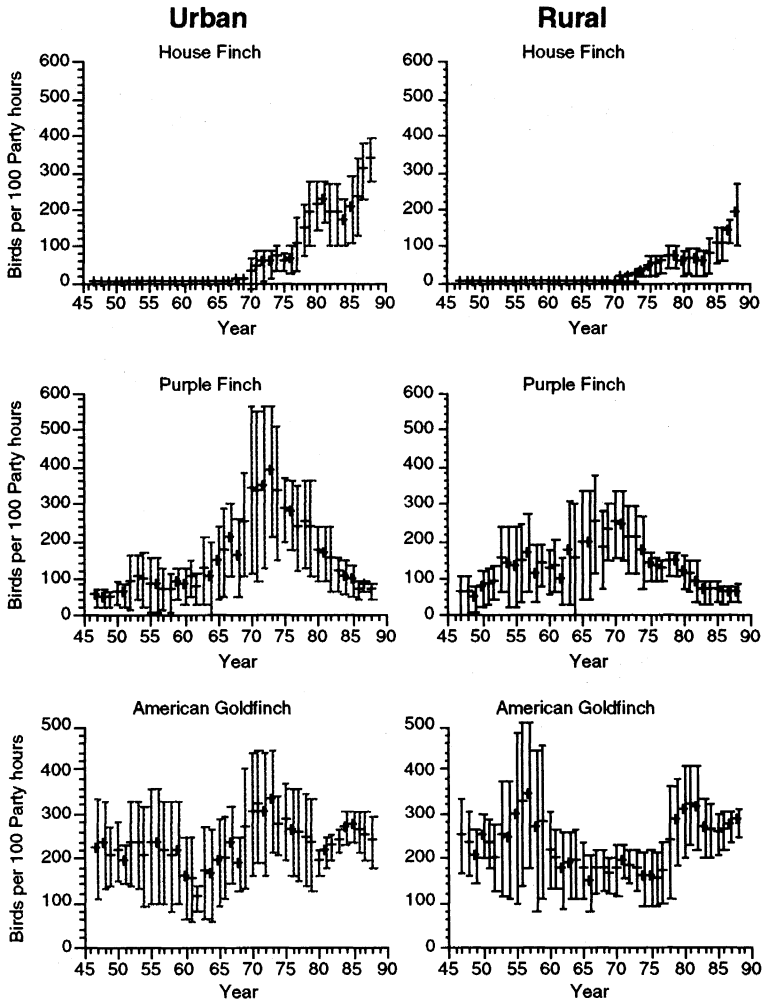

Figure 4. Graphs of five-year running means of birds per 100 party hours for the period 1945–1990 comparing House Finch, Purple Finch and American Goldfinch in rural and urban settings. Error bars extend ± two standard errors of the mean (95% confidence limits).

Figure 5 illustrates the patterns of change shown by three species of grassland birds. The Field Sparrow (*Spizella pusilla*) has declined slowly but significantly in the urban counties while not changing significantly in the rural counties. The Savannah Sparrow (*Passerculus sandwichensis*) has not changed sig-

nificantly during the full time period of our study, largely as a result of highly variable year-to-year counts in the 40s, 50s and 70s. However, both urban and rural populations appear to have undergone significant declines in the last 10 to 15 years. Similarly, the Eastern Meadowlark (*Sturnella magna*) cannot be shown to have undergone a significant long-term change between the mid-40s and the present, but there is a significant increase in the population size in the urban counties until the early 1970s followed by a significant decline in numbers in both urban and rural counties.

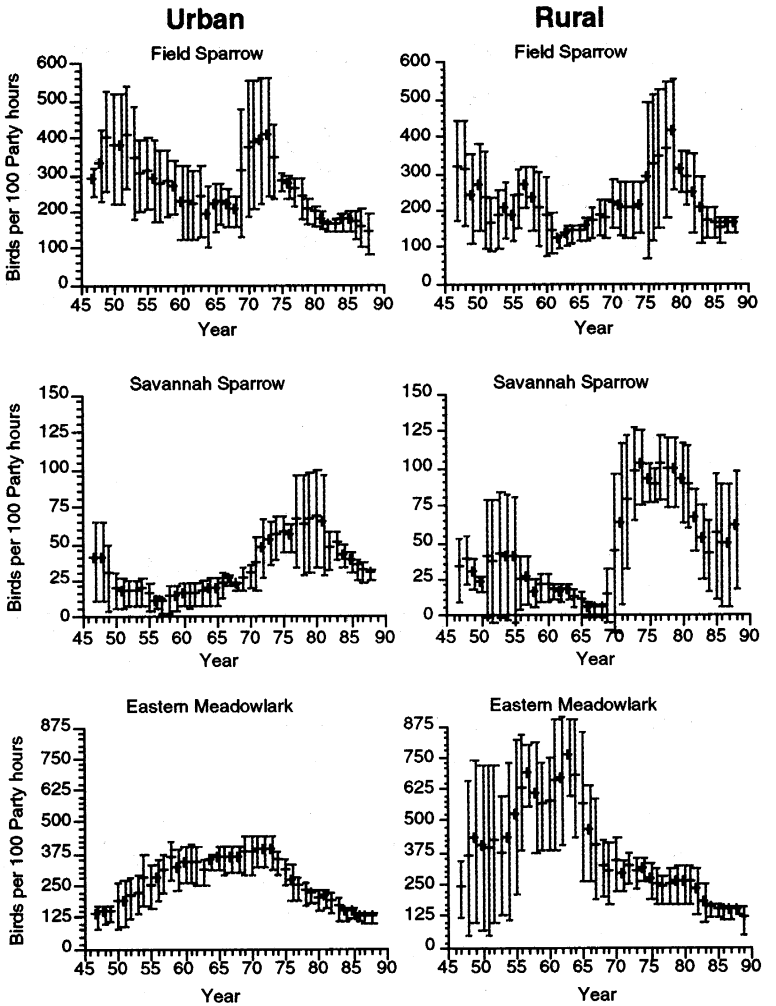

Figure 5. Graphs of five-year running means of birds per 100 party hours for the period 1945–1990 comparing Field Sparrow, Savannah Sparrow and Eastern Meadowlark in rural and urban settings. Error bars extend ± two standard errors of the mean (95% confidence limits).

The numbers of flocking blackbird species are shown in Figure 6. These numbers are likely to vary greatly from year to year, depending on whether or not the site of a roost has been found. Because the counts may vary by three or four orders of magnitude from one year to another we have plotted these numbers on a logarithmic scale. When the magnitude of the two standard errors exceeded the value of the mean, the computer graphing program could not plot the error bars. Given those precautions, we are surprised that it is possible to draw conclusions about the populations of flocking blackbirds. All three species

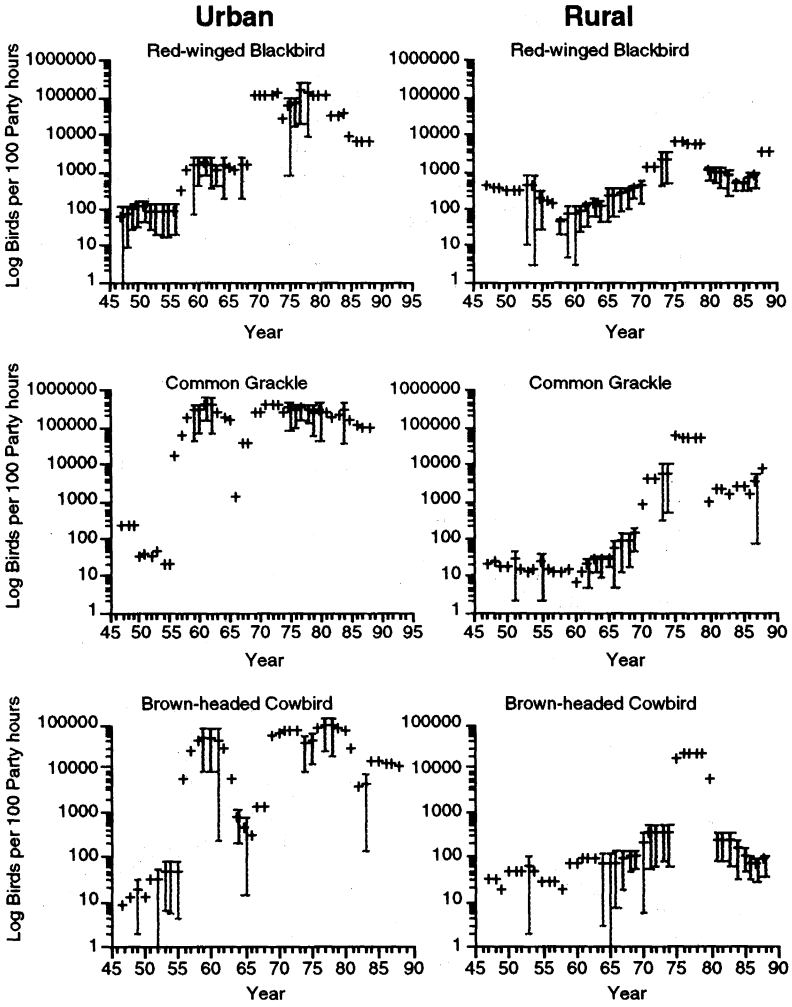

Figure 6. Graphs of five-year running means of birds per 100 party hours for the period 1945–1990 comparing Red-winged Blackbird, Common Grackle and Brown-headed Cowbird in rural and urban settings. Error bars extend ± two standard errors of the mean (95% confidence limits).

studied (Red-winged Blackbird, *Agelaius phoeniceus*; Common Grackle, *Quiscalus quiscula*; and Brown-headed Cowbird, *Molothrus ater*) appear to have increased dramatically, at least in the urban counties of the Piedmont. Their numbers in the rural counties appear to have remained relatively stable.

We present the two species of warblers that overwinter in reasonable numbers in Figure 7. Pine Warblers (*Dendroica pinus*) underwent a significant decline in the 1950s in the urban counties. Since the early 1960s they have increased to almost the population size that they had in the 1940s. It is difficult to perceive any overall trend in the population of Pine Warblers in the rural counties because of the highly variable counts during the mid-1950s. However, it does appear that rural Pine Warblers have increased significantly during the 1980s. In contrast, the Yellow-rumped Warbler (*D. coronata*) has increased significantly in the urban counties since the 1960s while remaining reasonably constant in the rural counties.

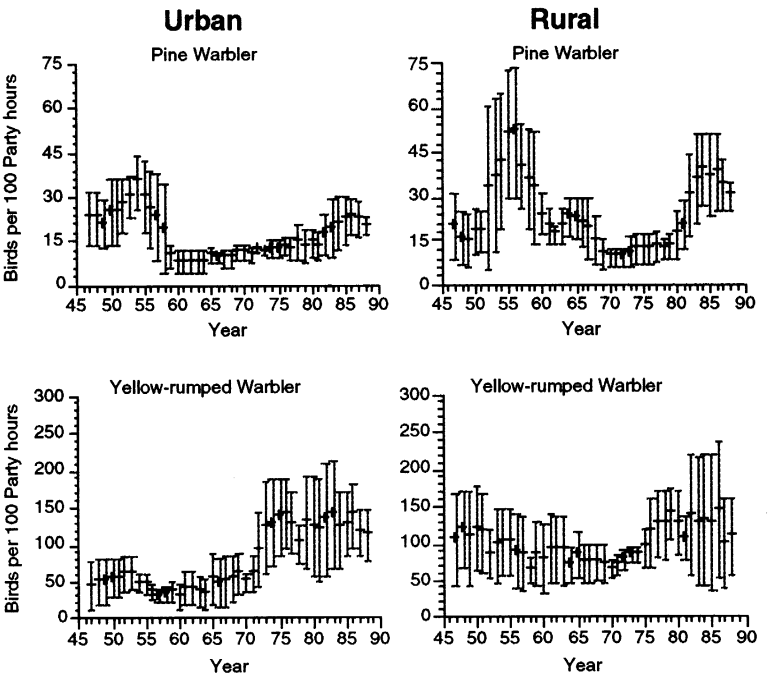

Figure 7. Graphs of five-year running means of birds per 100 party hours for the period 1945–1990 comparing Pine Warbler and Yellow-rumped Warbler in rural and urban settings. Error bars extend ± two standard errors of the mean (95% confidence limits).

DISCUSSION

Of the 17 species examined in our study, the urban populations of five have clearly increased, one has recovered from an earlier decline, two have decreased over the whole period, seven have decreased after earlier increases,

and two have remained unchanged. In the rural counties, nine species show no trends, one has increased, one has decreased over the whole period and six show declines after earlier increases. The first, and probably most important, question is: Are these conclusions based on valid data?

The scientific value of the Christmas Bird Count has been long debated (Arbib 1967, Tramer 1974, Raynor 1975, Root 1988). We chose the count as the basis for this study because there is no other collection of data of its longevity and geographical extent dealing with birds (Arbib 1967). It is collected in the same manner, in the same areas and at approximately the same time every year. Although the participants are volunteers, rather than professional observers, the count organizers try to encourage as much accuracy as possible. Unusual sightings are closely scrutinized and must be supported by details (Tramer 1974). In this study we have concentrated on common species, those expected to be found on the count regularly and ones with which observers are normally well acquainted. If a bias is associated with counting these species, it is likely to be an underrepresentation because some observers were concentrating on more noteworthy species (Tramer 1974).

The identification of *Carpodacus* species presents a special challenge with a serious potential for generating misleading conclusions in this kind of study. We believe that the first House Finches to colonize North Carolina were probably misidentified as Purple Finches or Common Redpolls. However, the updating of most field guides and the publication since the late 1960s of numerous articles clarifying the points of distinction between the two species has reduced the likelihood of misidentification. At this point we are willing to assume that the factors involved with incorrectly identifying one species as the other are evenly balanced.

The selection of party hours as the normalizing factor is supported by work done previously. This technique was used by Bystrak (1971) and Bock and Smith (1971). Raynor (1975) ran linear correlations between the numbers of 20 species and six measures of effort (e.g. party hours, number of observers, and party miles). He found the highest correlation between the number of observers followed by the number of parties and after that party miles. However, for the same 20- year period of time Raynor used, Chandler Robbins (pers. comm. in Raynor 1975) found the highest correlation with party hours. Dehaven (1973) used both party hours and party miles and found little difference in the results.

What we find much more worrisome is the certainty that the techniques used to conduct the counts have gradually changed over the period covered by this study. A quick check of count data from any circle will reveal an increase of at least ten times the number of miles driven to conduct the count from the mid-1940s to the present while the number of miles on foot had increased by a much smaller factor and sometimes even decreased. This implies that the observers have used a qualitatively different method of population estimation based on increased mobility within the circle. More ground can be covered and more birds can be counted per unit of time. Efficient observers will devote more of their attention to those areas within the circle that have the highest probability of producing more "interesting" birds. The increased mobility also makes it possible to double back to find the birds that were missed earlier at one of the priority stops. That ought to result in more species per count circle and more individuals per party hour for each species.

If increased mobility had an effect on the number of individuals per party hour, we would expect it to manifest itself most clearly during the period from 1945 to 1960, when miles by car increased most dramatically. The only species whose increase in numbers per 100 party hours appear to correlate with increased automobile usage are Northern Cardinal, House Sparrow and the blackbirds in the urban counties, and Eastern Meadowlark in both urban and rural counties. We believe that the change in methodology is not an adequate explanation for apparent increases, given the apparent decline in several other species during the same time period. We are left with the conclusion that populations of several species have changed significantly during the last 46 years.

The increase by the House Finch is clear and probably needs no further explanation. Its history on the East Coast and in the Carolinas has been described repeatedly (Aldrich and Weske 1978, Belthoff and Gauthreaux 1990, Elliot and Arbib 1953, Potter et al 1980, and Stewart 1989). Clearly, this is a species whose requirements are being met by the habitats of most of the eastern United States.

The blackbirds and the Yellow-rumped Warbler, however, appear to be increasing preferentially in the urban counties of our study. The apparent increase in the blackbirds (Red-winged Blackbird, Brown-headed Cowbird and Common Grackle) may be a function of their winter flocking behavior and the higher probability of discovering one of the massive congregations in areas where there are large numbers of people. Thus it is more likely that a flock will be discovered in an urban area.

We have no insights about why Yellow-rumped Warblers should be increasing in urban areas while remaining fairly stable in the rural counties. It is worth noting that the numbers of Yellow-rumped Warblers found in the Piedmont counties, both urban and rural, are miniscule in comparison with their abundance on the Coastal Plain.

The population declines shown by cardinals, towhees, and meadowlarks all appear to follow the same pattern of initial increase followed by a decrease over at least 20 years. We suspect that the increase in numbers of Brown-headed Cowbirds, which are now breeding birds in the North Carolina Piedmont, may be partly responsible for declines in host species (Potter and Whitehurst 1981). The effectiveness of cowbirds as brood parasites on cardinals and towhees is particularly impressive (Friedman 1929, Friedman 1966, Friedman 1971, Ehrlich et al. 1988). Cowbirds may also be partly responsible for the apparent decline in Field Sparrows. In addition, it is apparent that the appropriate habitats have declined significantly for breeding meadowlarks and Field Sparrows during the same period of time. It is not so apparent that the breeding habitat has decreased for cardinals and towhees.

Cardinals and towhees are associated with brushy edge habitats and have usually done well around homes and yards. Our initial prediction was that as the human population grew and built more single-family suburban homes that more backyard habitats suitable for cardinals and towhees would be provided and that their populations would increase. That such is not the case may be a function of the change in home construction patterns. Rather than building single-family homes one at a time, the trend is now to "develop neighborhoods" by removing all native vegetation on plots of up to several hundred acres, building homes and service roads and then landscaping the individual proper-

ties with grass and a minimal number of trees and bushes (usually non-native cultivars). This usually removes the normal habitat for birds such as cardinals and towhees for a period of several years and replaces it with something that is not necessarily equivalent. The amount of time that passes before acceptable habitat is re-established may preclude the ability of small numbers of birds in small islands or "pockets" of suitable native habitat to recover. This long-term removal of prime "edge" habitat with gradual re-establishment of suboptimal suburban habitat may also account (at least in part) for the differential decline of juncos in the urban counties of our study.

Several reviewers have suggested that the population declines in urban counties may be strongly influenced by increased predation by domestic cats and dogs. While we agree that domestic cats and dogs do function as effective predators, we are convinced that they merely replace natural predators (such as hawks, owls, shrikes, snakes, weasels, foxes, etc.) that are reduced or eliminated in urban areas. Similarly, there are no data suggesting that the number of accidental deaths from collisions with vehicles or windows is necessarily greater in urban areas than in rural areas.

There is a strong correlation between bird densities and the type of vegetation available to them for food, shelter and nesting (Welty 1982, Mills et al. 1989). Mills et al. (1989) reported that the vegetation was more important than the housing density in urban areas. Developing an area not only eliminated local vegetation, but also often replaced native vegetation with exotic cultivars. Native birds are usually adapted to make use of native plants and they lack this relationship with introduced plant species. In addition, Mills et al. found a positive correlation between introduced plant species and introduced, non-native birds. This same relationship between native birds and native plants, and the effect of introduced exotic plant species on native birds has been reported in other studies (Gavareski 1976, Bessinger and Osborne 1982, Tweit and Tweit 1986, Rosenberg et al. 1987). Because the introduction of exotic plant species correlates closely with human population density, it is difficult to determine which is the more important factor influencing bird populations.

It is apparent that some aspect(s) of human population growth is having a significant influence on some wintering nine-primaried oscine populations (see Table 2). While 10 of the 17 species examined in this study show no trend in population change in the rural (low human density) counties, only two are stable in the urban (high human density) counties. While five species show declines to the present in rural counties, nine do so in the urban counties. Five species show clear patterns of increase in the urban counties while only two do so in the rural counties.

There is no obvious distinction between the population trends of species that are permanent residents and those that are strictly winter visitors. We have demonstrated that both migrants and residents have undergone significant changes in numbers. This could suggest that the causal factors for population changes may be broader than those at work only within the North Carolina Piedmont. It could also suggest that changes in available winter habitat have an effect on the sizes of populations regardless of where the birds breed.

While we are not able at this time to determine which hypothesis is a better explanation for why nine-primaried oscine populations are changing, we can demonstrate that: 1) populations are more likely to change in areas where there

are many people than in areas where there are fewer people; 2) the populations that are declining outnumber those that are increasing; and 3) a majority of species that are increasing are those many people regard as "pests" (i.e., House Finch and blackbirds).

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Report of the North Carolina Bird Records Committee 1993

This report enumerates the decisions of the Carolina Bird Club's North Carolina Bird Records Committee during 1993.

Accepted as Valid. The reported identification is judged to be accurate and the bird is judged to be of wild origin. Photographs for all accepted species have been deposited at the N. C. Museum of Natural Sciences.

Herald Petrel (*Pterodroma arminjoniana*). A light-phase individual was photographed by Brian Patteson on 8 August 1992 off the Outer Banks. The species is already on the state's Official List; this appears to be the first photographic documentation for a light-phase bird in the state.

Bulwer's Petrel (*Bulweria bulwerii*). One was seen by Todd Hass on 1 July 1992 in the Gulf Stream off the Outer Banks. The record was considered Unresolved on a first ballot, because of two Inadequately Documented votes. However, after outside review was obtained, a second ballot yielded an Accepted Sighting verdict, with only one Inadequately Documented vote. This is the first accepted sighting for North Carolina, and the species is placed on the Provisional List.

White-tailed Kite (*Elanus leucurus*). An adult was observed by Norma and Bill Siebenheller at the Shining Rock Wilderness Area in Haywood County on 23 July 1993. This is the third accepted record of the species, known formerly as the Black-shouldered Kite (*E. caeruleus*), for the state; the two previously accepted records are from the extreme southeastern corner of the state. The kite is already on the Official List, based on a photograph of an individual from the Fort Fisher area.

Gyrfalcon (*Falco rusticolus*). A gray-phase individual, believed to have been a female, was seen in Pamlico County on 10 February 1992 by Wade Fuller and Robert Holmes. The Committee gave a unanimous vote to accept the sighting; there were also no Questionable Origin votes. This is the first accepted record of the Gyrfalcon in North Carolina, and the vote places the species on the Provisional List, as no photographs were taken.

Bar-tailed Godwit (*Limosa lapponica*). Steve Dinsmore observed up to two birds at Portsmouth Island from 24 April to 9 May 1993. The species is