RESIDENT BIRD COUNTS 1990

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Both the number of plots (98 BBCs, 34 WBPSs) and geographic distribution (29 States, the District of Columbia, Province of Ontario) continue to increase. This year's new plots were established by long-time participants, university faculty and students, research staff from private conservation organizations and government agencies, and many interested individuals who wish to contribute firsthand to conservation efforts in North America. While participation increases and becomes more diverse, the quality of counts also continues to improve. Efforts by my predecessor, R. Todd Engstrom, to standardize and improve the comparability of the data have enhanced the utility of *Resident Bird Counts* (RBC) for conservation research and monitoring efforts. As the results of national monitoring programs such as RBC play an increasing role in establishing research priorities and conservation policy, standardization of counts among observers, and across habitats and geographic locations, becomes essential. One area of RBC where improvement is needed is in the coverage of plots. To facilitate more standardized efforts, the guidelines for coverage are summarized below. These standards should be incorporated into all census efforts.

Breeding Bird Census

Season—The sampling period should encompass the nesting cycle of the majority of species found on the plot. Intensive sampling should be limited to 4–6 wk. Additional visits before or after this period should be used only for those species whose breeding cycles begin earlier or end later than the majority of species.

Time of day—Visits should be made at times when singing activity is greatest, usually early morning or late afternoon/early evening. The recommended start time is within 30 min after local sunrise.

Visit duration—Visits should be long enough to maximize detection of individuals of all breeding species. General guidelines for visit duration are 10–12 min/ha in forested habitats and 4–5 min/ha in open habitats. All parts of a plot should be covered during one visit. Partial visits should be avoided.

Route—To insure even coverage of the plot across all visits, different routes, with different start and end points, should be followed during each visit. A series of parallel routes should be followed that enable the observer to concentrate on detecting only those birds occurring within 50 m of either side of the observer in closed habitats (e.g., forest), and within 100 m in open habitats. Establishing a grid on the plot facilitates such a system, and provides a convenient way to follow alternate routes.

Number of visits—The minimum number of visits needed is 8, 12 is recommended.

Number of observers—To reduce disturbance and increase detectability, only one or two people should visit a plot at one time.

Annual counts—Counts should be operated consistently over time. Once the minimum recommended standards have been achieved, the same number of visits, start and end dates, and starting times, should be maintained from year to year.

Winter Bird Population Study

WBPS methods are the same as those for the BBC, except for the two described below.

Season—Visits should be made after the end of fall migration and before the beginning of spring migration. Standardization of the count period across years is essential, particularly

in the southern United States, where migrants and even breeding species may occur regularly during the winter.

Time of day—Early morning visits (i.e., within 3 h of sunrise) have been shown to be more productive than afternoons for detecting both the total number of species and for the number of individuals on a plot. Start times should be standardized so that each visit encompasses the same time period.

A number of published studies have helped shape RBC methodologies. Some of those studies and several general publications highlighting uses for RBC data are given in the bibliography below. Complete instructions on census methodology, the establishment of plots, and the characterization of habitats may be obtained from the Cornell Laboratory of Ornithology, Resident Bird Counts, 159 Sapsucker Woods Road, Ithaca, New York, 14850.

Acquiring a large cadre of dedicated volunteers and achieving high levels of standardization, however, are only the first steps in an effective conservation program. The next step involves research with the data. During 1990, over 1500 BBC and WBPS records were analyzed by researchers at Cornell's Laboratory of Ornithology to help the U.S. Environmental Protection Agency characterize the importance of wetland habitats to birds. This work will result in greater federal protection of important wetland habitats. In 1991, a computerized data base will be developed for quantitative habitat surveys of BBC and WBPS plots, which, at present, are available only in published format. In addition, a new habitat classification scheme, modeled after systems currently used by the U.S. Fish & Wildlife Service, will be introduced to aid participants in characterizing habitats within their plots. Both of these enhancements will be particularly useful in facilitating basic research on the relationship between population abundance and habitat change. Completion of quantitative habitat surveys for plots that have not been surveyed during the last 10 yr is recommended, as these data are particularly useful for studying changes in population abundance.

The format of this year's RBC remains essentially unchanged. For the WBPS, the first value following each species is the average number of individuals encountered per visit (rounded to the nearest tenth), and the value in parentheses is the number of visits during which a species was encountered (frequency of occurrence). For the BBC, the first value following each species is the number of territories (rounded to nearest half territory), and the value in parentheses is the number of territories per 40 ha. A "+" after a species indicates that less than one-quarter of the species' territory occurred on the plot. The number of nests and fledglings observed is indicated by an N and FL, respectively.

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