

RESIDENT BIRD COUNTS 1991

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The Breeding Bird Census (BBC) and Winter Bird Population Study (WBPS) are most useful for estimating species' densities within particular habitat types. Study plots of a fixed size and location are surveyed using the "spot-mapping" method (Williams 1936). Continuous, annual counts in relatively homogeneous habitats (e.g., forest rather than a mix of forest and field) are most useful. Verner (1985) discusses the types of studies for which density estimates are most appropriate as well as the assumptions and sources of variability inherent to "spot-mapping."

The density at which a species occurs in a given location is a function of habitat suitability and regional population dynamics, which are affected by local and regional habitat changes, seasonal weather patterns, food resources, levels of predation, and inter-specific and intra-specific competition, among other factors, on breeding and wintering grounds. Given that the potential causes for population change are many and often closely correlated, any program proposing to monitor and evaluate such changes must be based on a set of standardized and consistently-applied methods. Without standards, the ability to discern meaningful patterns from dynamic processes is severely compromised (see Wiens 1989, chap. 3).

The most important considerations for Resident Bird Counts (RBC) are accuracy and precision of count data, consistency of habitat descriptions, and comparability of data among study sites. Toward that end, participants are required to use standardized reporting forms and to adhere to a set of minimum requirements outlined in BBC and WBPS instructions and in primary references (Williams 1936, Kendeigh 1944, James & Shugart 1970, James 1978, Robbins 1970, 1981, Marshall 1991). All studies meeting these requirements will be published. Those wishing to establish new plots should send a description of the proposed plot to the RBC editor well in advance of field work. Descriptions should include: location, habitat type and vegetative composition, plot size, shape, and dimensions, and an outline of the plot on a topographic map. Final decisions on the suitability of count data for publication rest with the editor.

To facilitate collection of habitat data, a standardized habitat classification system was introduced in 1991. This system combines elements of those developed by the U.S. Forest Service, U.S. Fish & Wildlife Service, U.S. Geological Survey, and U.S. Environmental Protection Agency. The RBC system incorporates a hierarchical approach to classifying habitats, as well as categorical variables for describing plot topography, hydrology, and fragmentation.

Because ecological communities occur as continuous gradients that vary spatially and temporally, artificial classification systems that rely on discrete categories for grouping communities will never fully reflect this dynamic. Standardized classification schemes, however, provide a framework for planning, research, and management on large geographic scales. The current RBC system is the result of several revisions, and additional revisions are expected as the system is used more widely by RBC participants. The current version was greatly improved by comments from the following persons: Robert A. Askins, Gregory S. Butcher, R. Todd Engstrom, Frances C. James, William F. Laudenslayer, and Charles R. Smith. Data forms and instructions on count 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 Rd., Ithaca, NY, 14850.

1991 was a productive year for the RBC program. Under contract with the U.S. Fish & Wildlife Service, Cornell Laboratory of Ornithology staff completed the computerization of

BBC data for all forested plots in the northeast (U.S. Fish & Wildlife Regions 3 and 5) established from 1937 to 1990. The Northeastern Forest Database (Marshall and Richmond 1992) includes the following features: (1) complete plot, species, and habitat data (92 variables total) computerized in both ASCII and SAS database formats; (2) habitat data updated to conform to the habitat classification system adopted in 1991 (see above); (3) database variables for a species' ecological attributes (e.g. migratory status, foraging guild, nest type and location); (4) a unique site identification number for each plot; and (5) a database-referenced comment list providing information on changes in plot size and habitat occurring on long-term plots.

In addition, a summary report presents plot-specific data summaries of breeding species' densities, including summaries for four migratory categories — residents, short-distant migrants, partial neotropical migrants, and neotropical migrants—all organized by major forest type and plot longevity (Marshall and Richmond 1992). The report's format enables quick inspection of trends for individual species, all species combined, and individual migratory categories. The report and computer database are intended to facilitate more efficient use of this long-term data source, and to serve as a guide for future data summaries.

Several new features have been added to this year's counts. All new plots, as well as plots summarized in the Northeastern Forest Database, now have a unique site identification number that identifies a plot throughout the BBC and WBPS databases. Site numbers are composed of a state abbreviation (first 2 characters), a code for the physiographic province (Droege and Sauer 1989) in which the plot occurs (second two digits), and the computer record number for the plot's first census year (last 5 digits). Site-specific identification numbers remain consistent throughout the database as long as the plot's location or size does not change. Therefore, long-term plots that have changed in size or configuration may be referenced by more than one site identification number.

The time of day during which a BBC is started is no longer listed as "morning," "afternoon," or "evening." Instead, participants are required to report the number of visits started within 1.5 hr of local sunrise and within 3 hr of local sunset. The values for each are now reported under the **Coverage** section as "Sunrise" and "Sunset" visits. Counts started during other daily intervals are not reported.

The data reported for mean start temperature summarize the temperatures at the start of counts only, and do not represent a summary of the conditions for the entire count period. Many participants provided valuable weather data for the period encompassing their study in addition to starting temperatures. I encourage all participants to obtain weather data from National Weather Service stations, airports, or regional data sources such as Cornell's Northeast Regional Climate Center (phone (607) 255-1751) for locations near study plots. The most appropriate data to submit is the departure in temperature and precipitation from the long-term average for each month of the study period. All data should be in metric units, and the number of years comprising the long-term average should be specified. Please consult BBC #18 for an example of the type of data requested.

All other data attributes remain 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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Corrections to Vol. 62:

Page 30, BBC #67 (Field, Ridge, & Shrubby Trees), territories/40 ha = 815.