



On understanding bird population numbers in census studies

Scaled Quail/drawing by J. David Renwald.

IN AN ARTICLE on page 22, Frances C. James provides the interested reader with the keys to understanding of the vegetative analysis section of the Winter Bird-Population Studies and Breeding Bird Censuses. In the paragraphs below we append an explanation of the various numbers that are a part of the **Census** section of these reports. With these two explanations, there should be a sharp reduction in baffled readers, and an increased appreciation of the great value of these studies.

The number immediately following the species name is the number of territorial males (or females, in the case of the Brown-headed Cowbird) actually found within the study plot. It is determined by repeated coverage of the study plot, noting on each visit on the plot maps, the "registrations" or encounters, either visual or aural, with singing males. Comparison of the visit maps will indicate fairly accurately where, and how many, singing males of what species have territories on the plot.

IMMEDIATELY FOLLOWING this number, within parentheses, are two num-

bers. The first is the number of pairs that theoretically would be found in this, or an identical plot, of 100 hectares, and the second is the same figure for 100 acres. The purpose is obviously to give a uniform standard of density for comparison with other species and other studies. The hectare, being 2.471 times as large as an acre, provides a figure for the first numeral inside the parentheses which is 2.471 times as large as the second, rounded, of course, to whole or half numbers.

Thus, if the plot is 29 hectares (ha), and there is a figure of 13 territorial House Wrens, the figures in parentheses would translate to (45, 18).

The equation for hectares would simply be:

$$\frac{100 \text{ ha}}{29 \text{ ha}} \times 13 = 44.85, \text{ or } 45,$$

and for acres it would be:

$$\frac{100 \text{ acres}}{72} \times 13 = 18.2 \text{ or } 18.$$

In the published census, this would appear as House Wren, 13 (45, 18);

SINCE THE NUMBERS of territorial males on the plot are averages gained on a number of visits, the number "+" is used after a species name to indicate that on average there was less than one pair (or sometimes less than 0.5 pairs) on the plot. For example, if six trips resulted in registrations of one territorial House Wren on only two trips, the average would be 0.3 pairs, or "+."

In the item headed **Total**, the first number is the total number of species and the second the total breeding pairs of all species within the plot, and the figures immediately following are this latter total raised to theoretical 100-hectare (km²) and 100-acre plots.

The species themselves are listed in descending order of numbers and ascending A.O.U. Checklist order. Thus Song Sparrow 20 would come before Blue Jay 18, but Blue Jay 10 would come before Song Sparrow 10.

— R.A.

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