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APPENDIX V
REPORT OF WORKING GROUP ON THE NEED FOR A MANUAL OF COUNTING METHODS

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The time lag between publication and utilization of new techniques to estimate densities of avian populations has been excessive. A potential solution to the problem was posed to the working group in the form of a question, "Is a manual on censusing bird populations needed?"

It was the consensus of the members that:

1. Delayed implementation of new techniques was attributable to inadequate searches for the dispersed literature, insecurity with the level of statistics, and a lack of appreciation for the advantages in accuracy, precision, effort and assumptions associated with the new techniques.
2. Current, comprehensive and practical references to both the techniques and associated computer programs already exist, indicating that the major barrier is related to the volume of the references and the diversity of the literature sources.
3. A comprehensive manual would consolidate the literature; however, the publication of ongoing research would probably outdate the manual before printing.
4. A more practical and efficient approach would be to publish an easily updated guide that would enable users to direct themselves to the pertinent publications.

The committee unanimously recommended the guide (above alternative #4) over the manual. Formats ranging from abstracted references to arrays containing species, methods of observation, and habitats that lead to cells containing the pertinent references (Gates 1979) were considered for the manual. Although the use of arrays has potential, effort was directed at developing the logic for a key based on the differences (i.e., assumptions) between the estimators and the user's input on the particular population and census environment.

The following brief example was included to stimulate the future development of a comprehensive dichotomous key (* indicates references for generalized computer programs):

1a. Species is easily captured or individually identified and subsequently reidentified 2
1b. Species is difficult or impossible to capture 5
2a. Assumptions of population (demographic) closure are not violated between samples (no immigration, birth and differential mortality or emigration between marked [identifiable] and unmarked [unidentifiable] individuals) ..... *White et al. (1978*), Otis et al. (1978)*
2b. Assumptions of population closure may be violated 3
3a. Death and/or emigration may occur. Birth and/or immigration does not occur ..... *Jolly (1965), Darroch (1959)*
3b. Both death and/or emigration and birth and/or immigration occurs 4
4a. Demographic changes occur uniformly across all population classes (sex, age, locality) ..... *Arnason and Baniuk (1980*), Brownie et al. (1978*), Begon (1979), Seber (1973), Jolly (1965), Pollock (1975)*
4b. Demographic changes differ between population classes ..... *Brownie et al. (1978*), Pollock (1981), Stokes (1980)*
5a. Species is hunted ..... *Paulik and Robson (1969), Dupont (1976)*
5b. Species is not hunted 6
6a. Species is conspicuous in its habitat 7
6b. Species is inconspicuous ..... *No reliable estimator available.*
7a. Survey restricted to the breeding season (labor intensive) ..... *Williams (1936), International Bird Census Committee (1970, 1977)*
7b. Survey is not restricted to the breeding season (labor efficient) 8
8a. Habitat or terrain is difficult to traverse ..... *Reynolds et al. (1980)*
8b. Habitat and terrain are easily traversed ..... *Burnham et al. (1980), Gates (1979, 1980*), Laake et al. (1979*)*