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CONCLUDING REMARKS: AVIAN STUDIES AT THE SAVANNAH RIVER SITE

EUGENE P. ODUM

Ornithological research at the Savannah River Site during the past five decades has involved three phases: (1) During the first decade or so (1951–1965) the focus was on inventories to provide baseline data for future changes expected to result from atomic plant operations and major land-use changes (Meyers and Odum *this volume*). (2) During the 1970s and 1980s bird studies mostly involved specific species or groups of species, especially waterfowl, game birds, and endangered species such as the Wood Stork (*Mycteria americana*) and Red-cockaded Woodpecker (*Picoides borealis*) (Bryan et al. *this volume,* Franzreb et al. *this volume*). (3) In the 1990s a renewed interest in distribution and abundance of birds emerged as a result of increased interest and funding by the U.S. Forest Service, other government agencies, and regional university forestry schools. These studies emphasized research in biodiversity and management of forests to include values other than the production of wood products (e.g., Kilgo et al. *this volume*).

As outlined in Meyers and Odum (*this volume*), biological and environmental inventories were a major part of the first contracts for field research at SRS. Beginning in 1951, research contracts were drawn between the Atomic Energy Commission and the University of Georgia (UGA), the University of South Carolina (USC), and the Philadelphia Academy of Sciences. UGA contracted to inventory warm-blooded vertebrates and arthropods, and to study old-field succession. USC contracted to inventory cold-blooded vertebrates and higher plants. Inventories of the aquatic life in the Savannah River were carried out by a Philadelphia Academy task force under the direction of Ruth Patrick.

During this early period, about a quarter of the papers published by the UGA group involved birds, culminating in Robert Norris' book, "The Birds of the AEC Savannah River Plant Area" (1964, Contributions from the Charleston Museum, No. 14).

With the establishment of the permanent Savannah River Ecology Laboratory (SREL) in 1962 by UGA, there was no longer a segregation of interests (White and Gaines *this volume*). The SRS was designated as the first National Environmental Research Park (NERP) in 1972, and researchers and students from all over the United States began to conduct field studies at SRS, mostly funded and coordinated by SREL.

During the middle period of species-oriented bird studies, less than 10% of SREL papers dealt with birds. Attention spread to other taxa, especially herps, and to experimental studies in radiation ecology (some of which involved birds), thermal pollution, wetland ecology, ecotoxicology, and population genetics. As detailed by Bryan et al. (*this volume*) and Dunning et al. (*this volume*), a series of papers on Wood Storks and on the relationship between Bachman's Sparrows (*Aimophila aestivalis*) and the economics of timber harvest were noteworthy contributions during this period.

Finally, in recent years there has been a dramatic increase in interest (and funding!) throughout the forestry and wildlife professions in nongame and non-timber producing species, biodiversity, and conservation ecology. This interest has developed into essentially a landscape ecology approach to management, with emphasis on long-term research and research-management relationships, and is very apparent at SRS. I am pleased that many of the early bird censuses are being repeated, and that studies of the status of neotropical migrants and range changes associated with the "reversed latitude gradient" phenomenon (Odum et al. 1993) are underway. The SRS NERP is perhaps the best place in the United States for field experiments and models bringing together market and non-market values of forested landscapes.