

Editors' Foreword

Research programs may move in new directions in response to changes in society's needs and values. Each chapter of this book reflects the relationship between the ecological results that emerge from a long-term research project and the social forces that influence questions asked and resources invested in ecological research. An example of this dynamic interplay is found in Chap. 21 (Graham), which describes the evolution of fire research in the Rocky Mountains. Another compelling example emerges from research on the Escambia Experimental Forest (EFR) (Chap. 4, Connor et al.), describing society's turn away from longleaf pine forests during a period when their regeneration processes were poorly understood. EFR research developed effective regeneration techniques and thus influenced the current move to restore this valuable natural system to the landscape.

Often, trends observed—or expected—in the early years of a research program are confounded or contradicted as the research record extends over decades. After a 30-year study of water chemistry at Coweeta Hydrological Laboratory (Chap. 17, Vose et al.) scientists realized that they had a more accurate picture of trends than suggested by earlier looks at 5-year increments. Several chapters provide examples of long-term research on EFRs that has provided credible data for questions not even imagined at the time the study was installed, such as the evidence for changes in structure and composition of forests with fire exclusion documented in Chap. 3 (Bragg). The development of long-term research on grey jays originated as a study of dwarf mistletoe (Chap. 11, Nicholls) and led to insights on the lifespan of Grey Jays and the movement of the West Nile Virus in the Rocky Mountains.

The natural resource problems now faced by the nation include questions of such regional and global scale that an unprecedented level of collaboration and large-scale focus is required of research programs. Six Forest Service EFRs were among the twenty-five sites first selected by the National Science Foundation as Long-Term Ecological Research sites. The research involves many disciplines of science, the application of the most up-to-date scientific methodology and data management, and long-term continuity of measurements on sites dedicated to experimental research. The long life of most forest communities creates an unusual need for long-term research; many studies will have to continue for additional centuries before

they have followed even a single generation of trees. Similar efforts are needed on differing temporal scales for rangeland communities. In this book, scientists who work on EFRs step back and take the long view. Today, a network of experimental research sites is more relevant than ever.

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The Editors