Preface

When I was a young boy in West Virginia, my backyard was a forest. This forest was my classroom; learning the "way of the woods" from traditional knowledge of local people, passed on by generations of settlers in the Appalachian Mountains, was a way of life. During these formative years, I began to store mental images of how plants and animals were associated with certain forest characteristics. These images became patterns that were replications of combinations that were observed in other areas. It was these life experiences that had a strong influence on my choice of profession and how I would later use my early experiences and accumulated knowledge for practical application.

My undergraduate and graduate education focused on forestry, wildlife, fisheries, watersheds, and systems analysis. The first four topics came naturally, but systems analysis did not enter my thoughts until I read a publication by George Van Dyne (1966), in which he proposed that a systems approach had a lot to offer in ecology, especially in renewable resource management, and that influenced the direction of my future graduate studies and research.

In reading a book by Peter Klopfer (1969), I was introduced to the term *Umwelt*, and this created an interest in wanting to learn more about how animals viewed, sensed, or selected food and cover components as part of a forest system. A third publication that influenced my thinking was *The Ecological Web* by Andrewartha and Birch (1984), in which they discuss the theory of environment, which is really all about ecological systems (ecosystems). The three publications mentioned have been a major source of ideas for my research and teaching.

In my first forestry job on the Cleveland National Forest, I began to understand how important it was to integrate forestry, wildlife, range, and recreation in a broader context even though I had to make decisions on day-to-day operations at local levels. Later, a position on the Santa Fe National Forest provided experiences in interacting with the forest timber staff to have wildlife considered in their harvesting plans by adjusting sizes and shapes of cuts and leaving protective cover, even though there was no policy or directive to guide my actions. While I was not always successful, the process was established for possibilities in future confrontations. It also was an opportunity to integrate forestry and wildlife objectives into harvesting plans under the principle of multiple use. As a forest biologist, I began to see in a direct way that what was done at a local area had an effect on adjacent areas in larger management units, which at that time were called compartments and working circles but in reality were human-defined ecosystem units and landscapes.

The position of project leader in the U.S. Forest Service provided experience in several landscape-level studies in the Beaver Creek Watershed on the Coconino National Forest, the Apache National Forest, and the Fort Bayard research site on the Gila National Forest. All these studies were designed to determine the effects of timber harvesting and range management practices on different species of wildlife. During my research assignment, the opportunity occurred to work with

the U.N. Food and Agriculture Organization to conduct an analysis of a large river basin in the Luangwa Valley, Zambia. This change in environment provided the experience of working at a very large landscape level to delineate areas for different purposes, such as game management units, tourism, and national parks. It was also during this assignment that it became clear that human wants and needs are the same worldwide, but the circumstances where one lives are different.

Considerable time on the Luangwa project was devoted to aerial surveys to document elephant numbers and locations. In the Luangwa Valley, the elephant is an ecological dominant that had to be managed in large landscapes that included forests, grassland plains, and riverine vegetation. As a wildlife biologist and forester, it was a rewarding experience to immobilize an elephant and put a "plate-sized" tag in his ear with the number 33 (my age at the time). Marking elephants was necessary to determine their daily and seasonal movements to delineate areas for potential national parks and areas for controlled hunting. I named the elephant Chifungwe, and he later became the subject of a novel of my life as a wildlife biologist in Africa during a time of political and social change following independence.

Working and living in foreign countries confirmed my belief that forests, with their biological attributes, follow the same laws of nature and have similar characteristics whether in a deciduous forest in the United States, mopane and brachystegia woodlands in Zambia, riverine acacia in Kenya, the wet banana belt on Kilimanjaro in Tanzania, or the tableland rain forests of Australia. The overriding influence in forests is the volume (size and density), distribution, and combinations of trees as habitat and the by-products of trees that become the debris on the forest floor and habitat for small animals.

My approach to forest wildlife ecology at the management, research, and academic levels has been to formulate conceptual models as a way to categorize and understand complex relationships in systems and to identify areas of overlap that could be habitat components for several species. This approach to analyzing data relates to my education and experience as a practicing forester and biologist, which required me to use and later produce information for field application.

In the biological and ecological science fields, there are definitions that are sometimes generalizations to explain complex situations or activities. Concept definitions, such as diversity, juxtaposition, and interspersion, are important intellectual considerations, but sometimes they may not have a direct management application because they lack a quantitative or subjective measure (can be seen but not easily described). However, they are useful tools that can enhance and broaden the understanding of complex management situations. Some of the concept definitions in this textbook are works or hypotheses in progress and will change over time as experience in their use accumulates. For ease in reading, and unless otherwise noted, all measurements are in the English system of inches, acres, and so on. English-to-metric conversion formulas for common measurements are in the Appendix. Throughout the five chapters, abbreviations are used for some common forest and wildlife factors. These abbreviations are codes used to integrate forest and wildlife habitat structure and components into a relational data model in Chapter 5.

This textbook is not all inclusive of topics in the forestry and wildlife professions. It is intended for undergraduate forestry students and practicing foresters who need a background in wildlife and for undergraduate wildlife students and practicing

biologists who need a background in forestry. The topics covered do not replace the forestry and wildlife textbooks, which contain more detail on selected topics. The Knowledge Enhancement Readings sections direct readers to publications that provide expanded detail and in some cases a different explanation or opinion.

The first four chapters of *Forest Wildlife Ecology* are modules that can be used in a semester undergraduate course and are organized for topic assignments and testing. The fifth chapter is intended to encourage readers and students interested in forest habitat relationships by providing a detailed example of how information can be organized and used in a data model. While Chapter 5 does not have to be required as part of a semester course, students and working professionals can use it as a learning tool for individual study. The design of the forest attributes and wildlife needs (FAAWN) model has evolved over many years and is presented for consideration for use by individuals for their own work projects or educational benefit; it is an expanded system previously used by wildlife biologists in the Forest Service. There are sufficient data in each of the relations (tables) to obtain a good understanding of how a relational database management system works. Users of FAAWN can add their own data to the current database or copy the database structure and enter data for a local area.

As a thought for forest and wildlife sustainability for the future, my favorite all-time quotation is from the famous cartoon philosopher Pogo, who said: "I met the enemy and he was us" (Walt Kelly).

May the forests be with you.

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REFERENCES

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