THE BIOLOGY AND MANAGEMENT OF WILD RUMINANTS

CHAPTER TWENTY-FIVE

RESEARCH NEEDS

by

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CONTENTS OF CHAPTER TWENTY-FIVE

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CHAPTER 25. RESEARCH NEEDS

Research is defined in Webster's New Twentieth Century Dictionary of the English Language (1980; unabridged) as " . . . careful, patient, systematic, diligent inquiry or examination in some field of knowledge, undertaken to establish facts or principles . . . " That definition has certainly been met by thousands of researchers that have published the papers on wild ruminants listed in this 7-PART series. Their work is essential for an understanding of the biology and management of wild ruminants. In fact, the responsibility for finding solutions to problems rests with researchers who devote their lives to understanding ecological relationships, not only of wild ruminant ecology, but human ecology as well. Successful management must recognize biological principles, and decision-making procedures and decisions made shoud be updated as new knowledge is gained.

In the absence of data obtained through actual experimentation, usable first approximations can be arrived at through synthesized ecological information already at hand. The use of computers makes possible large numbers of computations that would otherwise be impossible. Computers can avoid much duplication of effort and free scientists for more actual experimentation. In fact, the reference lists in these 7 PARTS have been compiled from computerized bibliographic data bases, and their use will avoid much duplication of effort.

Much good research is never published because the researchers are too busy to write up their findings. Their work is useless to others if they cannot learn from it. Unfortanately, state agencies do not always provide the time for their research biologists to publish their findings. Once the work has been done and the state report written, it is filed and often left unused.

One of the difficult decisions I had to make when beginning the reference lists was the kind of literature that should be included. I chose not to list unpublished, mimeographed reports, such as Pittman-Robertson Progress Reports. They are not readily available to students and other researchers, so listing of them seemed to be an exercise in futility. Theses were also not listed. Student researchers have a professional obligation to publish their results in professional journals. If they do not wish to meet that obligation at a critical time early in their career, the thesis is destined to remain on the shelf to be read by only a few, if any, biologists that follow.

Continued research is necessary to refine past work, make new discoveries, and correct past errors in observation and interpretation. It is often four to five years from the time work is completed until it is published, and often the results are needed now. The pressure to go on to new projects should be alleviated so writing need not be crowded into odd moments of an already-full day.

Another idea to consider here is the need for time to synthesize and write up what is already known. Indeed, this 7-PART series is such an attempt. The SERIALS format is my own way of organizing the literature available so I can work efficiently. I have not had the time to make the ecological syntheses as complete as it is possible to make them, but that will come If I should have no pressure to do anything else, progress would be much more rapid.

It is imperative that sound biological bases be the foundation for ecological syntheses. Given that premise, I have and shall continue to develop the most complete understanding of the total biological picture possible, and at the same time identify new problems for study. Such an approach seems to be the only practical way to bring our present knowledge of wild ruminants up-to-date.