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THE HANDBOOK OF WILDLIFE DEPREDATION TECHNIQUES: A SYNOPSIS

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In 1979, the Game Division Administration of the Wyoming Game and Fish Department (WGFD) appointed John Demaree and Tim Fagan to develop a handbook that would address the ever increasing problem of wildlife depredation. Field personnel were often times at a loss on how to deal with or evaluate the assorted types of damage situations they were encountering. Because Wyoming requires landowners to be reimbursed for damage done by big and trophy game and game birds to their crops and livestock, an evaluation and techniques handbook was desperately needed.

The initial handbook, completed in January 1981, was 74 pages, and both John and I considered it a masterpiece. It did not take long, however, for this handbook to become somewhat lacking in information and outdated. In 1990, our administration approached us again asking this time for an update of our ten-year-old handbook. John and I went to work, and with the assistance of Evin Oneale of the Wyoming Cooperative Fish and Wildlife Research unit, and Bill Hepworth and John Schneidmiller of the WGFD, have just completed the second edition. This edition is over 600 pages and titled "The Handbook of Wildlife Depredation Techniques." Neither of us care to be around when a third edition is needed.

In this handbook we have attempted to cover any type of damage situation our personnel may encounter. Although the primary function of this manual is to inform department personnel about proper and uniform damage prevention and evaluation techniques, it also provides relative and pertinent information concerning the many aspects of wildlife depredation. Information for this handbook has been compiled from techniques developed by our personnel, personnel from other states and provinces, and published data on wildlife depredation. There are nine chapters, a reprint, and Appendix section in this handbook. We will briefly summarize each chapter regarding its contents.

Chapter I deals with Wyoming laws, commission regulations, and department guidelines and policies regarding damage done by big and trophy game animals and game birds. Because Wyoming statutes require compensation to landowners whose property is being damaged by big game animals or game birds, or livestock killed by trophy game animals, our personnel are continually being contacted to prevent, investigate, and evaluate a variety of damage problems.

Like any other government agency, the WGFD has its share of forms and affidavits.

Chapter II includes the various forms that need to be completed during damage investigations and evaluations. In addition to the blank forms, completed forms from previous investigations are included to assist our personnel. All codes and herd unit numbers required on these forms are included here to expedite completion of the investigations.

Chapter III is entitled, "Damage Prevention Techniques." Here is discussed the problems game animals can cause and possible solutions to these problems. Preventative measures are discussed, which include steps that can be taken before the damage occurs. These include crop alternatives, lure crops, and changes in planting and harvesting techniques. Control measures are also discussed at length, including steps that can be taken after the damage has started. Included here is information on frightening devices, repellents, trapping techniques, hunting season modifications, and introduction of natural predators.

Chapter IV is a relatively short chapter that includes the various fences available to protect stored and growing crops: permanent wire fencing, remesh wire fencing, permanent Tensar fencing, wood panels, electric fence, and Tensar temporary fencing. Also included is information on installation costs, handling ease, weight, and what is needed to support the fence.

Chapter V was by far the most difficult chapter to prepare for this handbook. Here we discuss all the evaluation techniques that have been developed by our personnel, those developed by other agencies, and other techniques cited in the literature. Included in each agricultural crop section is a booklet used by crop insurance adjusters to estimate crop losses. Examples of damage investigations

prepared by our personnel in the past are included explaining methods of evaluation and subsequent recommendations. Specifically addressed here are evaluation techniques to measure damage to wheat, barley, and oats; corn; alfalfa seed; edible beans; silage corn; sunflowers; sugar beets; and commercial fruits. Techniques to evaluate damage to native and alfalfa hay by big game, extraordinary damage to grass (rangeland), and damage to haystacks and stored corn are further included. Methods of evaluation by use of exclosures, animal counts, and fecal pellet collection are included to estimate vegetative losses by big game animals. Ornamental tree damage by big game animals has become a new and very expensive damage problem for our personnel. A recent settlement of over \$151,000 was made by WGFD for game damage to one tree farm. Obviously then, this section is very lengthy and provides the field officer with as much information as possible to evaluate tree damage.

Finally, trophy game damage (bear and mountain lion) is addressed. Four publications are included in this section to assist officers in evaluating livestock losses by trophy game animals. Damage by bears to beehives is also discussed to familiarize officers with this problem.

Chapter VI provides information on weights, consumption rates, and conversion factors that are often needed in investigative and evaluation techniques. Included here are daily consumption rates for game birds, waterfowl, and big game animals; AUM conversion factors for big game animals; weights of baled hay, grain, and seed; a weights and measures table; area and volume calculations; and a random numbers table.

Chapter VII deals with immobilizing wildlife with emphasis on the various immobilization drugs, dosages, and delivery

systems. Because of the specialty skills often required in this field, this chapter is only meant to familiarize personnel with the basic principles and techniques of immobilizing wildlife. Wildlife that one might be required to immobilize include: deer, elk, moose, bighorn sheep, mountain goats, grizzly bear, and black bear.

Chapter VIII could be called our animal welfare section in the handbook. Here is discussed the care, handling, and feeding of orphaned wildlife; the capture and handling of raptors and other birds; and finally, the safe removal of non-target animals from traps and snares.

Chapter IX deals with the maintenance and operation of various frightening devices and other equipment needed when dealing with wildlife depredation.

The final section of this handbook includes a reprint section and Appendix. The reprints provide personnel with additional information on studies in the wildlife damage control field. The Appendices include information on repellents and their manufacturers, net gun guidelines, snare distributors, ornamental shrubs and trees unattractive to big game animals, immobilizing drug manufacturers and their distributors, the various drug delivery systems, wildlife rehabilitation permit holders in Wyoming, and finally, various consultants that may be of service to our personnel.