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SYNOPSIS OF A COURSE ON THE PRINCIPLES OF WILDLIFE DAMAGE MANAGEMENT

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Five courses were offered by Utah State University's Program in Wildlife Damage Management (WDM) in 1991: (1) Principles of WDM, (2) WDM Techniques, (3) Wildlife/Livestock Relationships, (4) WDM Policy, and (5) Urban Wildlife Management. Principles of WDM was the introductory course in this series. It was an upper-division course; most students were in the Colleges of Agriculture and Natural Resources. In this paper, I provide a synopsis of this course hoping such information will be useful to other people designing a course on this topic.

Rather than using a textbook for Principles of WDM, students were required to read papers from the scientific literature. I also encouraged students to obtain a copy of *Prevention and Control of Wildlife Damage* as a reference book. Grades were based on mid-term and final exams, **and an oral and** written research proposal.

Each research proposal focused on a WDM problem of the student's choice. Students conducted a literature search to identify the pertinent literature and to determine what was already known about the problem. Students had to use their ingenuity to determine additional information that was needed before problem resolution was possible, and to design a critical experiment to obtain that information. Students presented their proposals both orally to the class and in writing. The paper conformed to the style of the *Journal of Wildlife Management*. These proposals were edited as if submitted for publication. If not satisfactory, they had to be rewritten and resubmitted until they were satisfactory.

Lecture topics were broken into 4 broad subject areas: (1) history and philosophy of WDM and its relationship to the discipline of wildlife management, (2) WDM problems, (3) potential solutions to WDM problems, and (4) human dimensions. These topics are discussed below.

History and Philosophy of WDM and its Relationship to the Discipline of Wildlife Management

This section began by examining different definitions of wildlife management and WDM. I argued that the goal of wildlife management is to increase the net value of the wildlife resource for society, and that all wildlife species have both positive and negative values. The goals of wildlife management and WDM are identical, increasing the value of the wildlife resource. However, the means used are different. WDM accomplishes this by reducing negative wildlife values, while the rest of the wildlife discipline achieves this by enhancing positive values.

I lectured on current values of the wildlife resource for society and the role WDM plays in satisfying those values. We then considered how the values of the wildlife resource have evolved through the early agrarian era, Roman era, Dark Ages, American colonial period (Conover and Conover 1987), the settlement of this country, and during the Twentieth Century.

We next had a class discussion in which we predicted the future direction of WDM and wildlife management. The class read Wagner (1989) as a point of departure for this discussion.

I next lectured on unreliable information in WDM and the need for critical analysis of WDM literature. Common pitfalls in experimental design were identified. Readings for these topics included Platt (1964), Romesburg (1981), and Fitzwater (1990).

WDM Problems

This section was used to identify the types of WDM problems. Lecture material and class readings included topics on predation on humans (Carbyn 1989), wildlife-vehicular collisions, wildlife as reservoirs or vectors of diseases, nuisance problems (Barrett 1991, Fitzwater 1988), forestry damage (Borrecco and Black 1990), agricultural damage, predation on fish (Conniff 1991), livestock predation (O'Gara, et al. 1983), and predation on high-value wildlife species. In each case, I provided data on the magnitude of the problem, resources and wildlife species involved, the reasons damage occurred, and steps taken to alleviate the problem.

Solutions Of WDM Problems

This section covered attempts to reduce predation on livestock by suppressing predator populations and by targeting individual predators causing problems (Wagner 1988). We also discussed the current U. S. Department of Agriculture, Animal and Plant Health Inspection Service, Animal Damage Control predator control program (U. S. Government Accounting Office 1990)

We then examined the use of nonlethal techniques, including use of fear-provoking stimuli such as propane cannons and predator models (Koehler et al. 1990), chemical repellents and conditioned food aversions (Conover 1984), exclusionary devices (i.e., fences and netting), cultural methods (Bullard 1988), habitat modification, and lure crops (Sullivan and Sullivan 1982). We discussed advantages and disadvantages of each technique and the conditions under which they were likely to work. We also examined an integrated approach to WDM (Dolbeer 1990).

Human Dimensions

The last section of the course dealt with human perceptions of wildlife (Kellert 1980). We then examined societal conflicts regarding wildlife management and WDM. We covered animal rights and animal care issues (Schmidt 1989, 1990), as well as local versus national interests. We examined how hunters, nonconsumptive users of wildlife, environmentalists, ranchers, farmers, and city dwellers want the wildlife resource managed. Discussions then proceeded to conflict resolution and how government deals with the diverse opinions of our citizens. Finally, each student was asked to develop a personal philosophy of WDM.

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