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Principles of Wildlife Damage Management

Robert H. Schmidt, Editor, *The Probe*

Does the profession of wildlife damage management have principles which are common to all management actions? Think about it...are there thought processes and actions which are similar for the specialists reducing homed lark damage to iceberg lettuce in California, gray wolf predation on calves and dogs in Minnesota, and double-crested cormorant predation to catfish in Mississippi? There probably are, and I would call these commonalities *the principles of wildlife damage management*.

Dennis Slate and his colleagues recently attempted to define decision-making rules for wildlife damage managers.¹ In their experience, the model outlined in Figure 1 included their major considerations for responsibly addressing specific wildlife damage management decisions. This schematic of the decision-making process should be useful to the practitioner as a reminder of the necessary steps required for a successful program. They concluded that "Wildlife managers should emphasize sound decision making as the key to balancing human interests and wildlife needs."

I have my four favorite principles. They are not set up in a linear, step-wise fashion, but I believe that all successful wildlife damage management programs must incorporate all of them.

Principle 1: Recognize Damage Patterns and Species Responsible

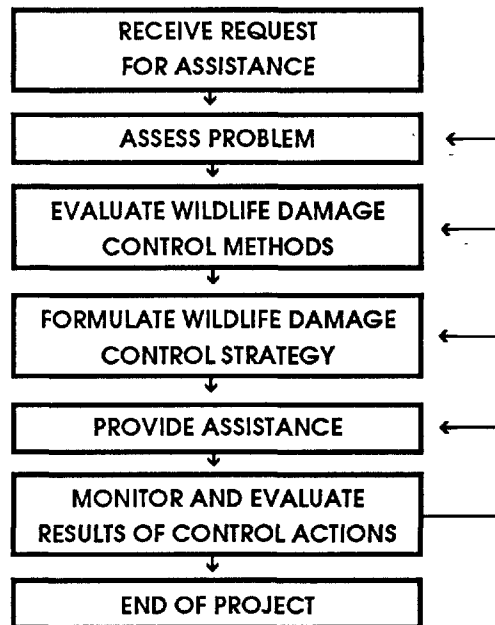
It almost defies logic to think that wildlife damage problems can be solved without proper identification of both the damage and what species is causing the damage, but this situation does happen when: 1) damage occurs but the source is unknown, or 2) damage (or damage potential) is not being recognized. It is important to recognize wildlife damage at an early stage, because reducing damage at this stage is less expensive, affects fewer animals, and often

uses less pesticides or lethal methods than waiting until damage is more severe. Habitat conditioning by the damaging species, or the modification of the habitat to make it more attractive to additional animals, should be reduced if management is initiated at an early stage. An example of habitat conditioning would be the construction of burrow systems by ground squirrels or pocket gophers. If an extensive burrow system is present before management is initiated, then the conditioned site becomes more attractive to dispersing squirrels than non-burrow sites.

Proper identification of the species causing crop deprecations or other problems also is essential. Damage management techniques differ for different species, both from a legal and a practical standpoint. Additionally, it is important to recognize what is not causing the damage. Publications

Continued on page 5

FIGURE 1. Wildlife damage management decision model (from Slate *et al.* 1992)



¹Slate, D., R. Owens, G. Connolly, and G. Simmons. 1992. Decision making for wildlife damage management. *Transactions of the North American Wildlife and Natural Resources Conference* 57:51-62.

CALENDAR OF UPCOMING EVENTS

March 19-24, 1993: North American Wildlife and Natural Resources Conference, Washington, D.C. Sponsored by The Wildlife Society. For more information, contact Dr. Lowell W. Adams, Chair, National Institute for Urban Wildlife, 10921 Trotting Ridge Way, Columbia, MD 21044, Phone: (301) 596-3311, or Dr. John M. Hadidian, Cochair, Center For Urban Ecology, National Park Service, 1100 Ohio Drive, S.W., Washington, D.C. 20242, Phone: (202) 342-1443.

March 24-25, 1993: Feral Swine: A Compendium for Resource Managers, Y.O. Hilton, Kerrville, Texas. Sessions include: *Biology of Feral Hogs, Depredation Problems, The Florida Experience, The California Experience, and The Pakistan Experience.* For more information, contact Dr. Dale Rollins, TAEX, 7887 N. Hwy. 87, San Angelo, TX 76901, Phone (915) 653-4576.

April 18-22, 1993: Northeast Association of Wildlife Damage Biologists, Annual Meeting, Atlantic City, New Jersey. For further information, contact: James E. Forbes, USDA/APHIS/Animal Damage Control, P.O. Box 97, Albany, New York 12201, (518) 472-6492.

April 26-29, 1993: 11th Great Plains Wildlife Damage Control Workshop, Hyatt Regency, Kansas City, MO. For further information, contact: F. Robert Henderson, Ext. Wildlife Specialist, Kansas State University, (913) 532-5654, or Robert A. Pierce II, Ext. Wildlife Specialist, University of Missouri, (314) 882-7242. *The Annual Meeting of the NADCA membership will be held in conjunction with this meeting. Watch the Probe for future details of agenda items to be discussed, as well as specific date and time of this meeting. Plan to be there!*

May 25-26, 1993: The Wild Pig in California Oak Woodland: Ecology and Economics. Embassy Suites Hotel, San Luis Obispo, CA. Contact: Dr. William Tietje, Forestry & Resource Management, 2156 Sierra Way, Suite C, San Luis Obispo, CA 93401. (805) 549-5940.

July 4-10, 1993: Sixth International Theriological Congress, Sydney, Australia. This is an international meeting of scientists interested in mammalogy, and will include symposia and workshops including such topics as population biology of mammals, the role of disease in population regulation, and wildlife management. Will include sessions on *Management of Problem Wildlife and Predation As a Regulator of Mammal Populations.* For further information, write: The Secretariat, 6th Int'l Theriological Congress, School of Biological Science, University of New South Wales, Sydney, Australia 2033.

August 2-6, 1993: Bird Strike Committee—USA, Seattle-Tacoma International Airport, Seattle, Washington. Will include two days of conference papers and a one-day field trip. Contact: James E. Forbes, USDA/APHIS/ADC, P.O. Box 97, Albany, NY 12201, (518) 472-6492.

September 19-25, 1993: First International Wildlife Management Congress, Hotel Cariari, San Jose, Costa Rica Includes session *Conflicts Between Man, Agriculture, and Wildlife.* Send abstracts before 31 March 1993 to: Dr. Paul R. Krausman, Sch. of Renewable Nat. Resources, Univ. of Arizona, 325 Biological Sciences East, Tucson, AZ 85721. For further information, contact IWMC Secretariat Director, The Wildlife Society, 5410 Grosvenor Lane, Bethesda, MD 20814, phone (301) 897-9770.

October 1993: 6th Eastern Wildlife Damage Control Conference, Asheville, NC. For further information, contact: Peter R. Bromley, Ext. Wildlife Specialist, NC State University, (919) 515-7587.

ADC Personnel Changes

Charles S. Brown has been selected as the new Assistant Regional Director for the APHIS/ADC Eastern Region based in Brentwood, Tennessee. Brown assumed his new position November 1.

David Williams has been selected to replace Brown as State Director for the Nebraska/South Dakota ADC program. He also assumed his new position November 1.

Publications Available

Methods of Investigating Predation of Livestock by Robert C. Acorn and Michael J. Dorrance. Covers identification of predation by twenty (20) species from grizzly bear to crows. Includes 54 color photographs, references, and 36 pages.

Obtain copies from: Print Media Branch, Alberta Agriculture, 7000 - 113 Street, Edmonton, Alberta, CANADA, T6H 5T6.

The Probe is the newsletter of the National Animal Damage Control Association, published 10 times per year.

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Your contributions to *The Probe* are welcome. Please send news clippings, new techniques, publications, and meeting notices to *The Probe*, c/o Hopland Field Station, 4070 University Road, Hopland, CA 95449. If you prefer to FAX material, our FAX number is (707) 744-1040. The deadline for submitting material is the 15th of each month.

Animal Damage Control in the News

ADC Takes Leading Role in Educational Efforts

The Animal and Plant Health Inspection Service (APHIS) Animal Damage Control Program is taking a leading role in wildlife damage management education.

APHIS' Animal Damage Control Program has a key part in funding the new Berryman Institute at Utah State University, Logan, Utah. The Institute is named to honor Jack H. Berryman for his long-time involvement and distinguished career with the wildlife damage management profession, the State of Utah, and Utah State University.

"The Berryman Institute will strive to enhance wildlife-human relations," said Bobby Acord, Deputy Administrator for Animal Damage Control. "The Institute will help meet the challenge to make wildlife more valuable to society, agricultural producers, and homeowners by reducing damage caused by wildlife," Acord said.

The Berryman Institute will produce and disseminate the knowledge required to solve problems caused by wildlife and enhance communication among professionals in the field of wildlife damage management (natural resource managers, researchers, and administrators) and other segments of society with an interest in solving wildlife problems by enhancing human/wildlife relations.

"ADC" — New Animal Damage Control Magazine

Beaver Pond Publishing & Printing has launched *ADC*, a bi-monthly magazine for animal damage control professionals. *ADC* will serve the niche between pest control, scientific studies, and fur trapping.

ADC, aimed at North American damage control, will cover a broad spectrum. All species will be covered: alligator, bear, beaver, coyote, deer, geese, mongoose, pigeon, snakes, squirrel, raccoon, woodchuck, and more. Topics will be just as diverse, covering: identification of the damage causer, damage prevention, trapping techniques, relocating, euthanasia, equipment use and modification, public relations, pricing, obtaining of large control contracts, and more...

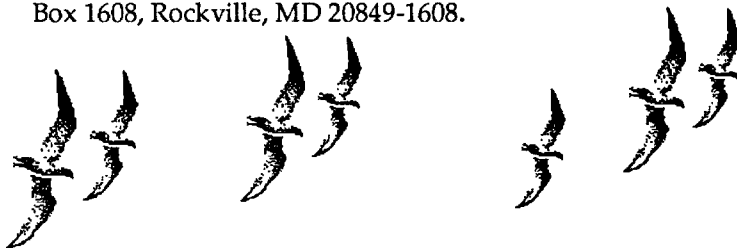
ADC's subscription price is \$15.00 per year (6 issues) in the U.S.A. and \$21.00 per year in other countries (payable in U.S.A. funds). Mailing address for subscriptions, advertising, editorial purposes is: *ADC*, P.O. Box 224, Greenville, PA 16125, U.S.A.

Cattle Losses to Predators in 1991

According to a recent USDA survey, predators cost cattle producers and farmers \$41.5 million in 1991. The survey stated that 106,000 head of cattle and calves were lost to predators during the calendar year.

Coyotes were responsible for 62 percent of the total cattle and calf losses. Dogs, wolves, bears, mountain lions, bobcats and other animals accounted for the remaining 38 percent of the losses. Seventy percent of the losses were in the western and mountain regions. Texas suffered the most damage, losing 3,000 cattle and 23,400 calves to predators.

This year's survey follows a 1991 USDA report showing \$27.4 million in predation losses to sheep and goat producers in 1990. Copies of the cattle survey are available for \$5 each from NASS by calling 1-800-999-6779 weekdays, 8:30 a.m.-5 p.m. (EDT), or by writing to P.O. Box 1608, Rockville, MD 20849-1608.



Maine Gull Project Shows Positive Results

A USDA/APHIS/ADC gull control project in Casco Bay, Maine has had positive results. Conducted in 1991 on Jenny Island, the project was requested by the Maine Chapter of National Audubon and funded by the National Audubon.

Attempts to restore terns on a number of islands had had produced little success because of extensive gull predation. A variety of non-lethal control techniques as well as shooting had been tried but were unsuccessful until DRC-1339 was implemented in 1991. Twenty-three gulls were removed using DRC-1339 and during the summer of 1991, five nesting pairs of common terns were observed on Jenny Island. By the summer of 1992, 157 nesting pairs were sited by Maine Audubon.

Terns had historically nested on Jenny Island until they succumbed to the severe competition of greater black-backed and herring gulls which preyed upon tern eggs and chicks. The gull control project is part of the Gulf of Maine Tern Working Group's long-term plan to restore gulls to their traditional nesting sites.

The editors of The Probe thank contributors to this issue: Chuck Carpenter, Bob Noonan, Charles S. Brown, Ed Butler, James E. Forbes, Guy Connolly, and Wes Jones. Send your contributions to The Probe, 4070 University Road, Hopland, CA 95449.

Wolf Sightings in Yellowstone?

In early October U.S. Fish and Wildlife Service officials reported sightings of animals that may be wolves in the southern part of Yellowstone National Park and areas of the Bridger Teton National Forest. On Tuesday, October 6, wolf experts from both the Fish and Wildlife Service and the National Park Service attempted to locate the individuals for a visual identification.

This second sighting followed an incident on September 30 when officials reported that a party of elk hunters hunting in a remote area in the Teton Wilderness in Bridger Teton National Forest shot what they believed to be a coyote. Upon closer examination, the party discovered that the black "coyote" weighed approximately 70 pounds. Suspecting the animal was a wolf, they reported the kill and location of the carcass to Yellowstone National Park rangers.

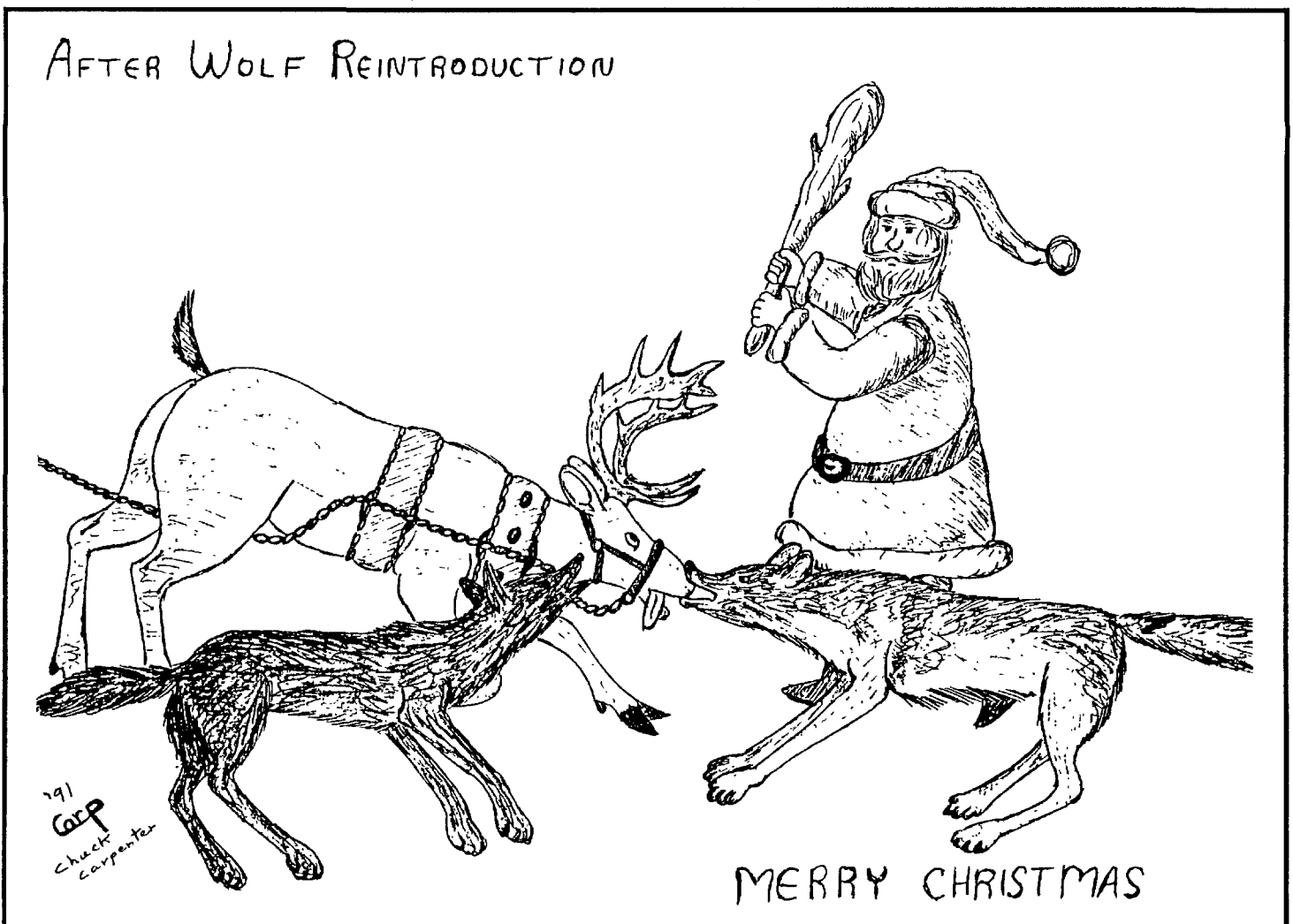
The remains were packed out of the wilderness and were air-freighted to the Fish & Wildlife's National

Forensics Laboratory in Ashland, Oregon for DNA analysis and any additional tests needed. While visual examination provides information such as skull size, shape of muzzle, coloration, etc., DNA testing is needed to determine if the animal is a wolf or wolf hybrid. At press time, officials were awaiting the results of the tests.

"It is extremely important that we get the word out to all backcountry users to use caution when shooting coyotes in the area," said John Spinks, U.S. Fish & Wildlife Service Deputy Regional Director for the Mountain-Prairie States. "With the hunting season in progress and with these new sightings, hunters need to take a second look before they pull the trigger."

The gray wolf is an endangered species in most of the lower 48 states. According to the Endangered Species Act, fines for killing a wolf can be as much as \$100,000 and one year in prison.

This original cartoon was reprinted with permission of the artist Chuck Carpenter.



Principles of Wildlife Damage Management

such as the *Prevention and Control of Wildlife Damage* handbook are available to assist professionals, producers, and homeowners in recognizing damage and identifying the species causing the problem.

Principle 2: Understand Wildlife Biology in Relation to Management

Many aspects of wildlife biology are important considerations in determining whether a damage management program will be successful. Obviously, there is considerable variation between species in behavior, distribution, food habits and feeding ecology, habitat requirements, and life history. However, even within a species, variations can occur which have direct implications for management. For example, subspecies (defined genetic populations within a species) of California ground squirrels show variable susceptibility to different kinds of toxicants and preferences to different kinds of baits. In addition, the broad range of ground squirrels throughout California means that climatic and seasonal considerations will play an important role in determining breeding, estivation, and hibernational chronologies, all of which are important in California ground squirrel management considerations. And finally, ground squirrels change early in the year from feeding on green succulent plants to eating seeds. Toxic materials on grain baits placed around squirrel burrows when squirrels are eating green foods is a waste of time and money, not to mention a potential hazard for non-target species, since the squirrels will not be consuming the bait. During a management program, factors such as habituation, bait-shyness, neophobia, and aversive-conditioning become very important. All species have unique requirements. The more information you have regarding a species and its requirements, the more effective your management program will be.

Principle 3: Know Management Alternatives

Even in today's world of increasing regulations and restrictions, there are still many management options that need to be considered when implementing a damage management program. Major options include toxicants (generally more than one type available), trapping, and habitat and behavior modification. Each option has advantages and disadvantages, costs, and potential efficacy levels. Each option works well under certain conditions, and poorly under other conditions. Additionally, each option requires some level of training, persistence, monetary and time commitment, and risk acceptance. Since all options do not work equally well, and since local conditions can influence the success or failure of a single technique used at different sites, all options should be considered and evaluated. Consideration of all

options and minimizing the use of pesticides by using effective techniques is really the backbone of integrated pest management (IPM). Finally, management options must be evaluated in the context of local and national social perspectives, as well as professionally accepted standards of conduct.

Principle 4: Know Local, State, and Federal Laws

Knowledge of and compliance with local, state, and federal regulations regarding the use, storage, disposal, and record-keeping of pesticides is critical. Uses of pesticides in a manner not consistent with information on the label can cause non-target hazards, or result in ineffective control programs (at the very least result in a waste of time and money, or result in a bait-shy population). In addition, improper use of pesticides can result in fines, loss of a management option, and bad publicity. These considerations extend to situations involving protected species, trapping regulations, and health and safety issues.

These are my four favorite wildlife damage management principles. They didn't crystallize overnight. Conversations and experiences with professionals such as Walter Howard, Ron Johnson, Bob Timm, Ron Thompson, Jerry Clark, Rex Marsh, John Borrecco, Terry Salmon, Guy Connolly, and others taught me these principles. I would like to hear about yours. Send them to me, and a future issue of *The Probe* will discuss additional principles of wildlife damage management.

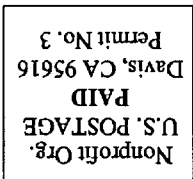
IN MEMORIAM

Donald James Fryda, Sr.

March 28, 1926 - August 12, 1992

Don Fryda, Sr., was a federal Animal Damage Control Specialist who spent his career in Nebraska. Don was stationed in Oxford, Nebraska at the time of his death. His ADC career spanned 32 years. During this time he gained the admiration and respect of countless cooperators he assisted with wildlife damage related problems. He had also served in the U.S. Army from 1945-1946.

Don died of cancer at Good Samaritan Hospital in Kearney, Nebraska. He had planned to retire in December. He is survived by his wife Doris; two sons, Ron of Nelson Nebraska, and Don, Jr., of Chadron, Nebraska, who both work for the Nebraska ADC program; and his daughter Cherie Foster who resides in Wichita, Kansas. Don is also survived by two brothers, two sisters, and six grandchildren.



Terrell P. Salmon
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Davis, CA 95616-8575

Membership Application

NATIONAL ANIMAL DAMAGE CONTROL ASSOCIATION

Mail to: Wes Jones, Treasurer, Route 1 Box 37, Shell Lake, WI 54871

Name: _____ Phone: (____) _____ - _____ Home

Address: _____ Phone: (____) _____ - _____ Office

Additional Address Info: _____

City: _____ State: _____ ZIP _____

Dues: \$ _____ Donation: \$ _____ Total: \$ _____ Date: _____

Membership Class: Student \$7.50 Active \$15.00 Sponsor \$30.00 Patron \$100

(underline one)

Check or Money Order payable to NADCA

Select one type of occupation or principal interest:

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| <input type="checkbox"/> USDA - APHIS - ADC or SAT | <input type="checkbox"/> Retired |
| <input type="checkbox"/> USDA - Extension Service | <input type="checkbox"/> ADC Equipment/Supplies |
| <input type="checkbox"/> Federal - not APHIS or Extension | <input type="checkbox"/> State Agency |
| <input type="checkbox"/> Foreign | <input type="checkbox"/> Trapper |
| <input type="checkbox"/> Nuisance Wildlife Control Operator | <input type="checkbox"/> University |
| <input type="checkbox"/> Other (describe) _____ | |