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Damage Control Association

Wildlife Damage Management, Internet Center  
for

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January 1998

## The Probe, Issue 184 – January 1998

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## NADCA Election Results!

Congratulations to all the individuals who were elected to serve as officers and regional directors of NADCA for 1998 and 1999. (And thanks to everyone who was willing for their name to be placed in nomination). With 158 of 427 ballots returned (37%), those elected are as follows:

**PRESIDENT** Robert H. Giles, Jr. (VA)

**VICE PRESIDENT - WEST** Mark Collinge (ID)

**VICE PRESIDENT - EAST** Pete Butchko (MS)

**SECRETARY** Richard B. Chipman (VT)

**TREASURER** Grant Huggins (OK)

### REGIONAL DIRECTORS

Western (1): Diane deLorimier (CA)

Southern Rockies (2): Gary Witmer (CO)

Northern Rockies (3): George E. Graves (ID)

South Central (4): James R. Gallaspy (LA)

North Central (5): James C. Luchsinger (NE)

Great Lakes (6): Mike Dwyer (OH)

Northeastern (7): Jerry L. Pickel (PA)

Centraleastern (8): John M. Houben (VA)

Southeastern (9): D. Tommy King (MS)

## From Our Incoming President

### *An Opinion....*

Recently I saw a student whose baseball cap had a bill worn-out from it rubbing on his collar! The backward -cap fad suggested that some of us may have lost the meaning and purpose of things, maybe the direction we may have intended. Another item of clothing, the dress tie, is said to have once been a bib or napkin, more easily cleaned after meals than washing a shirt which was once more difficult than it is today. The tie is an anachronism.

By analogy with the above observed student's behavior, I think the world of vertebrate animal damage management may need to be sure of its "hat", why it is wearing it, and that it is on straight. We need no more anachronisms. I think we are at a point where diversity of opinions, backgrounds, professions, causes, even techniques, can weaken or destroy a well-meant effort. The key areas where we need control and clarity, the negative feedback that keeps all systems alive, are:

1. The concept of a sophisticated, unified, modern vertebrate animal damage management system.

2. Financial analyses of actual and potential losses and control costs, after which can be made presentations of the other difficult and less-readily described benefits and costs in the typical damage situation.

3. Total system analyses, robustly made, at least using simulations of effects of proposed damage management actions, eventually leading to making

comparisons of actions taken to a computer-derived optimum solution.

4. Recognition of the complexity and scope of vertebrate animal damage management and development of educational programs and services that are responsive to the enormous, total system perspective needed.

5. Awareness of (and promotion) of the great net gains possible in food and fiber production from the work of professionals in vertebrate animal damage management.

6. Continued presentation of an emphasis on damage management, a total system effort, rather than an emphasis on reducing animal populations. "Emphasis" is the emphasis here, for reducing a population may be a demonstrably cost-effective, legal way to reduce real damage.

7. Synergistic work on studies, publications, media, education, internet communications, programs, and management "jobs"—things we have done well in the past alone, but which will no longer work or be sufficient in the new socio-political and financial arena.

8. Payoffs for being a member of NADCA. I plan to present some ideas about these topics in the future and I'll welcome correspondence to develop working papers or web pages in each area.

**Robert H. Giles, Jr.**

Department of Fisheries and Wildlife Sciences,  
Virginia Tech, Blacksburg,  
Virginia 24061-0321 email: RHGiles@vt.edu

# CALENDAR OF UPCOMING EVENTS

**February 6-8, 1998: Fourth Annual WCT Wildlife Control Instructional Seminar, Holiday Inn Select, Bridgeport, New Jersey.** Emphasis on practical, how-to trapping methods, techniques, and equipment for many nuisance species. Registration fee, \$225. Contact: Lisa, WCT Magazine, (815) 286-3039, e-mail <wctech@ix.netcom.com>, or visit <http://www.wctech.com>.

**March 2-5, 1998: 18th Vertebrate Pest Conference, Doubletree Hotel, Costa Mesa, California.** All-day field trip March 2. Plenary and concurrent sessions dealing with rodent, bird, predator, and other vertebrate pests issues from both a research and management perspective on March 3, 4, & 5. Pre-registration \$110 before Feb. 6, students \$25. Field trip, \$30. Hotel reservations due by Feb. 7, with rooms for 1-4 persons, \$90. Contact: Sydni Gillette, DANR-North Region, UC Davis, Davis, CA 95616, (530) 754-8491 or visit website <http://www.davis.com/~vpc/welcome.html>

**April 19-24, 1998: 11th International Conference on Bear Research and Management, Park Vista Hotel, Gatlinburg, Tennessee.** Contact: Michael R. Pelton, Univ. of TN, Dept. of Forestry, Wildlife & Fisheries, P.O. Box 1071, Knoxville, TN 37901, (423) 974-7126, FAX (423) 974-4714, e-mail: <pelton@utkx.utcc.utk.edu>

**May 3-8, 1998: 11th Australian Vertebrate Pest Conference, Lord Forrest Hotel, Bunbury, Western Australia.** Particularly relevant to those involved in research, extension, management, and administration of vertebrate pests in Australia and New Zealand. Bunbury is located 2 hours south of Perth. Contact: Promaco Conventions Pty Ltd., PO Box 890, Canning Bridge, Western Australia 6153, telephone 08 9364 8311, or e-mail: <promaco@promaco.com.au>, or visit <http://www.promaco.com.au>.

**May 17-20, 1998: 1st National Extension Natural Resources Conference, Ruttger's Bay Lake Lodge, Deerwood, Minnesota.** Aimed at natural resource educators focused on environmental education, fisheries, forest products, forestry, range, recreation, water, and wildlife. Contact: Larry Biles, National Program Leader - Forestry Management, USDA-CREES, Washington DC, at (202) 401-4926, or e-mail <lbiles@reeusda.gov>

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Your contributions of articles to *The Probe* are welcome and encouraged. The deadline for submitting materials is the 15th of the month prior to publication. Opinions expressed in this publication are not necessarily those of NADCA.

**June 16-18, 1998: 8th Annual Meeting, Bird Strike Committee USA, Holiday Inn Lakeside / Burke Lakefront Airport, Cleveland, Ohio.** Of particular interest to military and civilian personnel responsible for airfield operations, land-use planners, researchers, FAA inspectors, engineers, pilots, and aviation industry representatives. The meeting will emphasize hands-on demonstrations and activities, and will include papers and posters on topics such as wildlife control techniques, new technologies, land-use issues, engineering standards, and habitat management. Pre-registration \$60 before May 1, \$75 afterward. For hotel reservations at room rate of \$89, call (216) 241-5100 and mention BSC-USA. For conference registration, contact Betsy Marshall, USDA-APHIS-WS, Sandusky, OH at (419) 625-0242, fax (419) 625-8465, or email: <nwrscsandusky@lrbcg.com>

**Oct. 5-9, 1998: International Conference on Rodent Biology and Management, Beijing, China.** Organized by Instit. of Zoology, Chinese Academy of Science, and CSIRO Div'n. of Wildlife and Ecology, Australia. For additional information and mailings, contact: Zhibin Zhang, Secretary General, Int'l. Conference, 19 Zhongguancun Road, Haidian District, Beijing 100080, P.R. China, or e-mail: <zhangzb@panda.ioz.ac.cn>

## Dogs Keep Park Bears At Bay

Carrie Hunt and her pack of Karelian bear dogs are helping reduce human-bear conflicts in such places as Yosemite National Park. The Karelians, a black and white breed originating in Finland, are trained to chase bears quietly, working much like sheep dogs. Their nighttime forays into public use areas of parks serve as "aversive conditioning" or gentle harassment experiences for the bears, convincing them to avoid those areas. "Our goal is to keep the bears natural," says Steve Thompson, park biologist who oversees the Yosemite program. Last year, employing Hunt and her Karelians saved three Yosemite bears from euthanasia, the alternative solution for bad bears.

Success of the technique is also claimed for at least one troublesome grizzly in Montana's Glacier National Park.

— adapted from *Backpacker*, June 1997

## Editor's Note: More PROBE Issues!

Look for a separate January and February issue of *The Probe* this year, rather than the usual combined Jan/Feb issue. Due to ample material, as well as adequate NADCA treasury resources (thanks in large part to generous donations by Reed-Joseph International over the last several years), the publication schedule of your newsletter has expanded. The annual roster of NADCA members will appear as an enclosure in your February issue. Your comments on how *The Probe* can be more useful to you are always welcome.

# Predator Studies from Sul Ross State University, Texas

Charles David Altman, Jr. and William Christen Madsen, Jr.,  
Sul Ross State University, Alpine, Texas

The majority of West Texas is privately owned with the exception of state wildlife management areas, state parks, Guadalupe Mountains National Park, and Big Bend National Park. The Trans-Pecos region of West Texas is 95 percent rangeland and is typically managed for cow-calf production. The Edwards Plateau region of West Texas is approximately 98 percent rangeland, primarily used for livestock (cattle, sheep, and goat) production. The Edwards Plateau region produces over 98 percent of the mohair in the United States and is the most important wool and mohair producing region in the country.

Predation impacts on domestic and wild prey populations will always be a controversial topic among West Texas ranching communities. Predators can impact humans by preying on domestic livestock and wildlife populations, which can be very costly to landowners and managers. These impacts can also affect Texas' booming exotic and trophy hunting industries. Although such predation is considered common knowledge among ranchers and Animal Damage Control (ADC) Specialists, there is little scientific documentation of this information for the Trans-Pecos and Edwards Plateau regions. In light of animal rights, trap bans, general attacks on ranchers, and predator control activities, research investigating food habits of predators on private lands in West Texas was needed.

Dr. Kem Canon initiated a study to investigate this problem and was assisted by Sul Ross State University Graduate students (Rosemary Heinen, Harris Glass, Chris Madsen and Charles David Altman). The graduate students worked in a cooperative effort which involved the Sheep and Goat Predator Management Board, the United States Department of Agriculture-Animal and Plant Health Inspection Service-ADC, the Texas Health Department, Texas Parks and Wildlife, ranchers, sportsmen, and private trappers, conducting predator food habit studies on bobcat, coyote, mountain lion, gray fox and red fox in West Texas.

The intent of the combined studies was to collect stomachs from these predators for lab analysis and document the items found. The objectives of these studies were: 1) to determine baseline information concerning predator food items found in the Trans-Pecos and Edwards Plateau regions of Texas, 2) to compare dietary differences between sexes, 3) to compare dietary differences between seasons, and 4) to compare dietary

differences between two ecological regions of Texas. We were especially interested in determining livestock contents found in predator stomachs in order to substantiate economic losses to ranchers in these regions.

Predators as a whole, showed significant differences in food habits between seasons, sexes, and between the Trans-Pecos and Edwards Plateau regions. There was a wide range of food items found in predator stomachs, including: insects, birds, rodents, lagomorphs (cottontail and black-tailed jackrabbits), deer, exotic big game, livestock, and other various items. The information gained in this study enhanced the limited existing knowledge of predator/prey relationships in West Texas.

In planning for this study, many precautions were taken in order to insure proper procedures would be followed to yield reliable, valid data. One major difficulty in conducting re-

search in West Texas was gaining the trust and cooperation of private landowners. Ranchers in West Texas are particularly hesitant to cooperate with state or federal agencies. This is due, in large part, to complications involving the endangered species and private land ownership rights.

Researchers are perceived as a

threat to rancher's livelihoods because of the possibility of discovering endangered or threatened species on their land.

Texas ranchers have good cause to be concerned considering recent confrontations with the United States Fish and Wildlife Service (USFWS) over the Endangered Species Act. One example of such a confrontation in the Edwards Plateau is the attempt of USFWS to limit the removal of old growth juniper stands, thus restricting private landowner rights to manage property as they deem necessary. This ban was proposed because it is hypothesized that the endangered golden-cheeked warbler uses only the bark from old growth juniper for nesting material.

In the Trans-Pecos, an example of a confrontation between rancher and the federal government was the endangered pondweed incident. As the story is told, an inexperienced researcher trespassed upon privately owned ranch land and documented aquatic plants in the surrounding area. A species of pondweed was apparently mistakenly identified as endangered and sent to USFWS. As a result, a cease and desist order was dispatched to the rancher, banning her from using the water source where

*Continued on page 7, col. 2*

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*Once ranchers fully understood the basis of our study, they were definitely more cooperative in allowing access. We were even invited out to a couple of ranches, and supplied vehicles, guns, and ammunition.*

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# Booklet Review

by Stephen Vantassel, NWC Correspondent

*"Beaver Snaring" by Arthur Simmerman*

*Illustrations by Steve Petruzates*

22 pages. Cost \$7.95 plus \$0.55 postage

Abraham Lincoln once wrote, "Sorry for the long letter, I didn't have time to write a short one." The same cannot be said for Mr. Simmerman's splendid little book on beaver snaring. If you hate to read and only want the facts, then this book is for you. I estimate you could finish reading the book, cover to cover, in about 20 minutes. This would be just fine as far as Mr. Simmerman is concerned, because he wants to make sure you have enough time to read it a few times through. On no less than three occasions, he recommends reading the book several times in order to get all the appropriate info. Given its brevity, we would concur.

Mr. Simmerman begins by discussing his preferences on snares and snare locks. His advice is straightforward and sufficiently detailed so that even a novice like myself could order the necessary supplies. He carefully talks about snare preparation and proper support equipment. He presents two different methods for treating snares to remove their shininess. He then proceeds to illustrate basic snare setting practice. The line drawings by Mr. Petruzates are simply superb. They add a great deal to properly understanding the written descriptions.

Pages 6-7 intrigued me. Mr. Simmerman diagrams two different types of ponds in Wisconsin. One page illustrates a pond with high banks and the other page describes low bank ponds. He actually points out places where you will want to consider making your sets. What intrigued me was the suggestion that the beavers were constructing their ponds in such similar ways throughout his trapping area. It got me to thinking about the beaver's pattern of building ponds in my part of the country. Do beaver really show that level of copycat behavior?

While he dutifully lists the equipment needed, set description consumes the lion's share of the book. Information on blind sets, baited sets and holes and dens are all covered. In contrast to Rob Erickson's video, this booklet primarily shows using snares in drowning sets. I was particularly interested in his float set and the set he describes on p. 21. If they work as he says they do, then these sets should be a welcome addition to an ADC trapper's snaring arsenal. Mr. Simmerman deserves high praise for his advice on sprung snares. I can't tell you

how often I have wanted authors to write about how to analyze and correct misfires.

The reader should know that this book was written primarily for fur trapping. Given how cold it gets in Wisconsin, it comes as no surprise that the book is dominated by under-ice snaring sets. These words are not a criticism. It just means that if you are looking for a lot of information on open water snaring, then this book should not be your first choice.

Overall, I give the booklet a grade of "B+." Mr. Simmerman has done a fine job. He clearly teaches how to snare beaver. I downgraded the text because at times he assumed too

much understanding on the part of the reader. For example, he states that the slide wire should be anchored in water deep enough to drown a beaver (p.19). Unfortunately, he doesn't say how deep that is. As I understand it, the proper minimum safe drowning depth is four feet. I did have a concern about his suggestion to use old mineral bags

as covers for your ice sets. While I am sure they help keep the ice from freezing, I wonder what long term effect the introduction of those minerals might have on the water.

If you want to learn under ice beaver snaring then this book is for you. I am confident you will be pleased. I also appreciated Mr. Simmerman's open invitation to contact him if you have questions. That sort of free on-call technical service makes \$7.95 a real bargain.

You can obtain a copy by sending a check or money order for \$7.95 plus 55 cents for shipping and handling, payable to Arthur Simmerman, at: 22080 178th St., Cornell, WI 54732. You can call him at (715) 288-6193.

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# More Reports From the 4th Annual Conference of The Wildlife Society:

## Continued from the December 1997 Issue of The Probe (Issue #183)

### North American Public Attitudes Toward Predators, Predation, and Predator Management

*Mark Brunson, Terry A. Messmer, David G. Hewitt, and Douglas Reiter, Jack H. Berryman Institute, Utah State University*

Surveys measuring public knowledge and attitudes toward predators, predation, and predator management were mailed to a random sample of 1,800 U.S. and Canadian households in the summer of 1996. We had a 40% response rate and subsequently conducted follow-up surveys of 10% of the nonrespondents to determine nonresponse bias. We believe the results of this survey accurately reflect the proportion of U.S. and Canadian citizens who care enough about wildlife to form attitudes about its management. In general, respondents tended to have a somewhat idealized view of predator ecology. Most believe predators have the right to exist and support the reintroduction of predators to their former ranges. However, respondents also believe that predators sometimes need to be managed and that trapping and hunting are acceptable management strategies. While many people have monolithic attitudes toward predator control — supporting or opposing it in all circumstances — others make distinctions based on the purposes of control and the species being controlled. Support for predator control was higher if the objectives are to protect rare, endangered, and native species than introduced gamebirds. Support for predator control was greater among men, families that earn farm income, and people who grew up in rural areas; however, we found no differences based on current rural/urban residency.

### The Importance of Long-Term Monitoring of Ungulate Populations and Factors Affecting Their Fluctuations

*Ludwig N. Carbyn, Canadian Wildlife Service, Edmonton, Alberta*

From 1985 to 1996, a total of 228 days were spent on the ground observing the hunting techniques of wolves killing bison in Wood Buffalo National Park. Observations were made for periods of 6 to 40 days at a time. Classified counts yielded data on spring (May/June) to fall (September/October) cow/calf ratios. Yearling survival increased over the 11-year period and numbers for the whole park appeared to approach stabilization, but sub-populations did not. In one sub-population observed, wolf predation was exclusively directed toward calves from 1985 to 1994; in 1994 there was an observed shift to adults. Scavenging on carcasses was observed and may have been a factor in alleviating predation pressures on calves and adults. The number of debilitated (diseased?) bison decreased over the 11-year period. Data collected in this study point out the importance of long-term studies in measuring changes and evaluating mitigative measures that may become necessary in managing biological systems. A strategy of coupling long-term studies with pulsed short-term "blitzes" is recommended. A historical review of management programs within Wood Buffalo National Park is also presented.

### Fiscal Effects of Voter Initiatives to Ban Certain Methods of Bear and Cougar Hunting: Oregon's Experience

*Christopher N. Carter, Oregon Dept. of Fish and Wildlife, Portland, OR*

In November, 1994, Oregon voters approved a ballot initiative that banned the hunting of cougar with dogs, and the hunting of bear with bait or dogs. In the following hunting seasons of 1995, the numbers of bear tags and cougar tags issued dropped by 20 percent and 35 percent respectively. The associated revenue losses were about 12 percent less than we had projected for the Oregon voters' pamphlet, but still resulted in an annual revenue loss of about \$88,000. This amount is enough to fully fund one and one-half experienced wildlife biologists. By extending the general season bear tag sale deadline from August 31st to September 30th in 1996, Oregon was able to completely recover resident bear tag revenues, actually increasing those revenues to levels 25 percent above 1994. By changing cougar tags to general season rather than controlled hunt tags, we were able to recover cougar tag revenues to pre-initiative levels. Although the changes in sales timing and mode do not restore management flexibility, they can help offset the fiscal effects of the initiative. These changes were feasible in Oregon because the banned hunting methods were associated with higher harvest rates than the methods not banned. We also review other states' experiences in responding to the fiscal effects of hunting ban initiatives. Provided there are no restrictions on the means by which a management agency can offset the negative fiscal effects, the main arguments for and against these kinds of initiatives should focus on the biological and management effects of the measures.

### Cultural Control of Damage to Alfalfa Caused by Plains Pocket Gophers

*Ronald M. Case\*, Debra S. Baker, James C. Luchsinger, and Bruce A. Jasch, \*Dept. of Forestry, Fisheries and Wildlife, University of Nebraska, Lincoln*

We previously demonstrated that plains pocket gophers reduce yields of irrigated and dryland alfalfa by 17% and 43%, respectively. Additionally, we developed a program to evaluate the benefit:cost of various lethal means of decreasing pocket gopher damage to alfalfa. Our objective was to find an economically feasible, nonlethal means to lessen adverse impacts that pocket gophers have on alfalfa yields. We chose a creeping-rooted variety of alfalfa, Spredor 2, to contrast with the standard tap-rooted variety, Wrangler, to determine effects of pocket gophers on yield. Our reasoning was that belowground herbivory by pocket gophers would have less impact on Spredor 2 (if tap root is damaged, the plant would likely die) and behavior of Spredor 2 to root damage. Spredor 2 sends up new shoots when roots are damaged by harrowing, or as we presumed, by belowground herbivory. Hence, the increased aboveground production may compensate for damages caused by pocket gopher presence. We live-trapped pocket gophers and released them on treatment plots within each variety of alfalfa. On control plots, Wrangler yields averaged 9%

*Continued on page 6 col. 1*

## Reports From the 4th Annual Conference of The Wildlife Society

greater than Spredor 2 ( $P = 0.02$ ). On Wrangler treatment plots, yields were 10% less than control plots ( $P = 0.01$ ); however, we did not detect any difference in yields of Spredor 2 comparing treatment plots with controls ( $P = 0.20$ ). We did not detect any difference in yield between varieties that had pocket gophers on them. Our results indicate that choice of variety of alfalfa may be a feasible means of lessening yield losses to pocket gophers.

### Management of Crop Damage by Deer at Chesapeake Farms, MD

Mark C. Conner, DuPont Agricultural Products, Chesapeake Farms, Chestertown, MD

In many major crop production areas, white-tailed deer are abundant and economically important. In Kent County, MD, agriculture and deer hunting are \$50 million and \$2.2 million industries, respectively. However, high-density deer populations can negatively impact farm income. At Chesapeake Farms, DuPont Agricultural Products' 1,337 ha agricultural and wildlife management research and demonstration area, research indicates that deer reduce yields and profits for corn and soybeans up to 35% and \$57/ha, respectively. Clearly, effective strategies for managing and measuring deer damage to crops are imperative. At Chesapeake Farms, we employ an integrated approach to reduce deer damage including habitat improvement, deer deterrents and deer population management. Habitat is improved by establishing preferred deer foods such as white clover where precision farming techniques indicate that crop yields are not economically viable. To deter deer use of cash crops in smaller, isolated fields, single-strand electric fences are erected. Both clover plantings and electric fences can be economical methods of decreasing crop damage. To manage deer abundance, a quality deer management (QDM) paradigm is used to establish hunting regulations that emphasize harvest of does and mature bucks. QDM has been demonstrated by others to reduce browsing in soybean fields. Where crop damage is widespread, deer population management is essential. We are investigating use of remote infrared sensing technology to identify and quantify deer damage to corn and soybeans. If developed, this technology could be used by state wildlife agencies to monitor crop damage over large areas. Harvest regulations appropriate to alleviate deer damage could then be imposed.

### New Approaches to Management of Problem Canada Goose Populations

James Cooper\* and Thomas Keefe,

\*Dept. of Fisheries and Wildlife, University of Minnesota

Management of Canada goose populations in urban areas has required development and implementation of new techniques and policies. Urban populations have expanded exponentially in the past two decades. Concurrent with the expansion have been complaints of goose droppings on swimming beaches, parks, golf courses, athletic fields, corporate grounds, and residential lawns. Canada goose concentrations have damaged vegetation, increased shoreline erosion, reduced water quality, and caused auto and aircraft accidents. This paper describes popu-

lation growth, problem types and levels, the human tolerance threshold, and the policies and procedures used to manage geese in the Twin Cities of Minnesota. Unique aspects of the Twin Cities program include a policy that requires local governmental units to set population goals, fund operational control and evaluate efficacy, and to hunt geese where possible. In 1996 food shelf processing replaced relocation of adult geese, and 1,700 birds were processed and donated to food shelves. Population data show that programs combined with special early and late Canada goose hunting seasons has limited the population to 25% of the predicted population.

### Flavor Avoidance Learning and Its Implications in Reducing Hazards to Nontarget Animals

Abderrahim El Hani\*, J. Russell Mason, Dale L. Nolte, and Robert H. Schmidt

\*Dept. of Fisheries and Wildlife, Utah State University

In reforested areas, underground strychnine baiting to control pocket gophers poses a hazard to golden mantled ground squirrels and yellow pine chipmunks. We designed this study to assess 1) whether chemical insensitivity to bitter tastes might explain the ingestion of strychnine, 2) whether pocket gophers would avoid four bitter-tasting compounds, and 3) whether nontarget species could be trained to avoid strychnine and the most aversive compound. Results indicated that pocket gophers are indifferent to strychnine, while the nontarget species avoid it only after conditioning. Concentrations of 0.1% denatonium benzoate (DB) and 0.1% quinine hydrochloride (QHCl) reduced consumption by pocket gophers. Gophers accepted 0.05% DB, but nontarget species avoided it. Nontarget avoidance of DB was stronger after conditioning. This suggests that QHCl and DB may be useful as nonlethal repellents for pocket gophers. Also, DB might be added to strychnine baits to reduce bait consumption by nontarget species. Finally, DB and LiCl could be used to produce learned avoidance of DB-treated baits by nontarget species to further reduce hazards.

### Predation of Artificial Nests in Grassland / Shrubland Fragments in Western Tennessee

Troy L. Ettel, David A. Buehler, and Allan E. Houston

Dept. of Forestry, Wildlife and Fisheries, University of Tennessee, Knoxville

Artificial nests have been used to compare effects of fragmentation on avian nest predation rates in forested habitats. Recent research suggests that fragmentation may also influence predation in grassland settings. To evaluate adequacy of grassland/shrubland fragments for breeding birds, over 900 artificial nests were spaced throughout grassland habitats of fallow fields and open-canopy woodlands in western Tennessee in 1996-97. Measurements taken at each individual nest site included vegetation type and height, distance to habitat edge, and a nest visibility index, and will be used as explanatory variables of predation response. In 1996, predation rates did not differ between grassland and open-canopy woodlands. We used zebra finch eggs, 16 X 11 mm, and

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northern bobwhite eggs, 30 X 24.7mm, in our study to test effects of egg size on predation. In 1996, predation varied with egg size. Nests containing finch eggs were predated more often than nests of bobwhite eggs (77.7% vs. 54.0%). At least 59.1% of predation was caused by rodents. Finch eggs were frequently destroyed during rodent predation/disturbance of artificial nests (89.4%,  $n = 104$ ). Rodent disturbance of nests of bobwhite eggs rarely resulted in predation of the egg (13.6%,  $n = 81$ ). We suggest that grassland fragments within agricultural landscapes may be inadequate nesting habitat for birds. Smaller grassland/shrubland birds may be particularly vulnerable because their eggs are capable of being consumed by a wide range of mammalian predators. Artificial nest studies of existing grassland fragments will help characterize quality of these areas for breeding birds and ultimately help identify additional habitat needs.

### Potential Hazards Associated with Currently Registered Rodenticides

*Kathleen A. Fagerstone and Edward W. Schafer, Jr.  
USDA/APHIS, National Wildlife Research Center,  
Fort Collins, CO*

A number of traditional pesticides used for controlling wildlife damage were canceled after 1988, when amendments to the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) mandate reregistration and maintenance fees, and increased data requirements. Few field rodenticide uses have been maintained. Strychnine is being reregistered for underground uses for controlling pocket gopher damage to seedlings and crops. Although strychnine is a secondary toxicant, numerous studies indicate that hazards to nontarget wildlife are minimal from these underground uses. Zin phosphide is being reregistered as a rodenticide for use against a variety of species; it is not a secondary toxicant and studies show that it presents few primary hazards. Both of these compounds are being reregistered by consortia of registrants, which have raised funds to generate data by placing a surcharge on sales of the technical products. Other rodenticides registered in some states include chlorophacinone, diphacinone, and cholecalciferol. Recent studies conducted to determine efficacy and nontarget hazards for various rodenticides will be summarized.

### Is Your Membership Current?

Check the date above your name and address. If it says "11/97," "12/97," or "1/98," send your dues along with the completed membership renewal form to NADCA treasurer Grant Huggins today! Don't miss an issue of The Probe!

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## Predator Studies from Sul Ross State University

the pondweed was found. With published articles over the events described, mistrust between ranchers and researchers grew, thus the possibility of gaining access to private lands was severely hampered.

The present study was proposed to the Sheep and Goat Predator Management Board for funding and indirectly increased trust within the ranching community. In working with the Sheep and Goat Predator Management Board, we also became involved with ADC, who volunteered their assistance in collections. With ADC support, ranchers were more willing to help out because ADC is one of the last state and federal agencies that many ranchers still feel they can trust.

Collections by the ADC were slow at first, but after talking and riding with some of the trappers we were able to convey to them how such research is needed, especially on private lands, where livestock represent a portion of the prey base. As it turned out, the studies did show a relatively large portion of the diets of most these predators contained livestock. Livestock was found in all predator diets except for the gray fox.

In the Trans-Pecos region the trapping of bobcats and gray fox is not common practice by the ADC. Therefore, because ADC was not supplying the majority of our collections in this region, we had to find alternative means of gathering samples. Private trappers were sought for help in collecting in the Trans-Pecos. Also, we found it necessary to seek out private ranches that would allow us access to their land. We also sought help from other organizations, and after some hesitation, they decided to join in by cooperating with collections. These organizations included: Texas Parks and Wildlife Department, the Texas Health Department, sportsmen, and bounty systems.

Once ranchers fully understood the basis of our study, they were definitely more cooperative in allowing access. We were even invited out to a couple of ranches, and supplied vehicles, guns, and ammunition. It was impossible to convince everyone that we had "honorable intentions," but we did reach many ranchers in this (research-unfriendly) environment. Our efforts demonstrated that with common goals, groups with different ideology can successfully work together, and hopefully pave the way for further research on private lands in West Texas. For further information on Sul Ross State University's Predator Food Habit Studies, contact the Sul Ross State University, Division of Range Animal Science, at P. O. Box C-110, Alpine, Texas 79832, (915) 837-8200.



*The Editor thanks the following contributors to this issue: Kirk Gustad, Charles Altman, Bob Giles, Chris Madsen, and Stephen Vantassel. Send your contributions to The PROBE, 4070 University Road, Hopland, CA 95449.*



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