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## The Probe, Issue 182 - November 1997

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# Exclosures Around Overflow Pipes and Trees Prevent Beaver Damage

*Michael D. Porter, Brady J. DeVille, and John H. Holman*

**B**eaver damage concerns more landowners than damage caused by any other wildlife species in Oklahoma. The Noble Foundation, the Oklahoma Department of Wildlife Conservation, and the Oklahoma office of USDA-APHIS-Wildlife Services all receive more requests for assistance with beaver damage than for any other wildlife species.

No pesticides, toxicants, or fumigants are registered with the Environmental Protection Agency for beaver control. Trapping and shooting are the most effective lethal control techniques, and Conibear traps are probably the most effective beaver traps. Beavers are primarily nocturnal, so effective shooting generally must occur at night. Conibear trap use and night shooting beavers are restricted in Oklahoma to only USDA-WS specialists and people with a Nuisance Beaver Control Permit from the Oklahoma Dept. of Wildlife Conservation. It is difficult for the relatively few USDA-WS specialists and nuisance permittees to provide timely beaver damage control for the tens of thousands of rural landowners in Oklahoma.

All beavers from an impoundment or relatively small watershed can be temporarily eliminated with lethal control techniques, but beavers usually move back into the area. To be effective, lethal control methods should be combined with frequent periodic monitoring of beaver activity. One of the disadvantages of lethal control techniques is new beaver damage generally occurs before landowners realize beavers have returned.

Although beavers can negatively impact timber, ponds, and drainages, they also have beneficial attributes. Beavers are natural components of local natural ecosystems. Their impoundments and cutting can add diversity and enhance habitats for many other species. Beavers can help suppress black willow, which tends to be a weedy pest around some ponds. We do not dislike beavers—we dislike their damage. If possible, we prefer to control beaver damage while coexisting with beavers. Nonlethal control techniques allow us to coexist with beavers.

During 1981 through 1986, we estimate we expended about 40-80 hours annually for beaver damage control at the Noble Foundation Pasture

Demonstration Farm, which is located in Carter County northwest of Ardmore, Oklahoma. This labor involved trapping beavers, shooting beavers, removing beaver-felled trees from fences, unplugging beaver-plugged overflow pipes, removing beaver dams from earthen spillways, monitoring beaver activity, and associated travel. In 1986, we began investigating means to decrease our annual labor commitment to beaver damage control. We began creating relatively permanent beaver damage prevention measures in an attempt to save money and labor while more effectively controlling beaver damage.

We selected 7 ponds and a drainage ditch at the Demonstration Farm to receive beaver exclusion devices, because these represented most locations with beaver activity other than the creeks. We deemed beaver activity acceptable along the creeks. Tree cutting and beaver impoundments along the creeks seemed to create diversity rather than problems because trees were abundant along the creeks. We deemed tree removal in other areas of the farm unacceptable because relatively few trees existed in the other portions of the farm.

## Overflow Pipe Protection

Most of our beaver problems involved tree cutting and plugging pond spillways, so we concentrated on exclusion devices for these two situations. We constructed 5 box-type parallel bar barriers over the inlets of overflow pipes on ponds where we experienced problems with beaver plugging overflow pipe inlets. Three of these barriers were placed over hooded inlet overflow pipes and 2 were placed over barrel and riser overflow pipes. Two of the 7 ponds did not receive parallel bar barriers over their overflow pipe inlets because we did not experience problems with beavers plugging them. We selected a parallel bar barrier design with 1-inch gaps between rods because it is relatively maintenance-free and restricts fish movement through overflow pipes.

During a 9-year period, beavers restricted water flow through only 1 of 5 overflow pipes protected with box type parallel bar barriers. Beavers

*Continued on page 6, col. 1*

# CALENDAR OF UPCOMING EVENTS

**November 18-20, 1997: Western Coordinating Committee - 95, "Vertebrate Pests of Agriculture, Forestry and Public Lands", Circus Circus Hotel, Reno, Nevada.** An opportunity for those involved in research, extension, teaching and regulatory activities related to wildlife damage management to share information in an informal setting, as well as coordinate research and plan for future needs. Registration fee approx. \$30. RSVP to Desley Whisson (916-754-8644) or Larry Sullivan (520-326-6991) by Nov. 4. Reserve hotel room at Circus Circus by mentioning "WRCC-95 meeting rate", \$30 double or single, by calling 800-648-5010.

**December 7-10, 1997: 59th Midwest Fish & Wildlife Conference, Hyatt Regency, Milwaukee, Wisconsin.** Theme: "Managing Natural Resources: Integrating Ecology and Society." Conference will include sessions on Prevention and Control of Invasive Species, and Managing Overabundant Wildlife. For further information, contact Michael Samuel at (608) 271-4640, or visit website <http://www.dnr.state.wi.us/fh/fish/mwfwc.htm>.

**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. Registration and cost information will be available in October. Contact: Sydni Gillette, DANR-North Region, UC Davis, Davis, CA 95616, (916) 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@utkux.utcc.utk.edu](mailto:pelton@utkux.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](mailto: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](mailto:lbiles@reeusda.gov)

**June 16-18, 1998: 8th Annual Meeting, Bird Strike Committee USA, Cleveland, Ohio.** Contact Gene LeBoeuf, Kirtland AFB, NM, (505) 846-5679.

**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](mailto:zhangzb@panda.ioz.ac.cn).

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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.

## Deer, Dog In House Don't Mix

What do you get when you throw together a 70-lb dog and a spooked deer? "Fur and slobber," said Joe DeMilia, as he and his family worked to clean up their suburban home in Briarcliff Manor, NY. While the family was away, except for Maddie, their pet Labrador mix, a spooked deer crashed through a screen door, landing on the dining room table. The deer then knocked over a chair and gave Maddie a rude awakening. The ensuing melee left the kitchen floor covered with hoof prints and fur. The deer exited through a double-paned closed window, and then leaped into the family's above-ground pool, damaging the liner. "It just made a general nuisance of itself," said DeMilia, who had lived in the house for the previous 23 years without having a firsthand encounter with wildlife.

—from the Associated Press and the Idaho State Journal

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# Indiana Nuisance Operators Organize

The Indiana Animal Damage Control Association was started less than a year ago and we have 40 members at this time. We formed our organization in response to the need to be involved in the decision making process concerning nuisance wildlife regulation changes in Indiana. It might be said we organized "in an effort to avoid self defense": we were aware of the state forming a Nuisance Wildlife Control Committee, and the committee's job was to look at and evaluate the nuisance wildlife control policies of the state. We approached them as a group, and they welcomed our input with open arms. Currently we are an active part of the policy-making procedures involving nuisance wildlife, both on the committee and the Mammal Subcommittee.

It is also our intention to help develop this emerging field into an honest and ethical service industry. Our membership is made up of primarily Nuisance Wildlife Control Operators (NWCOs). As a organized group of professionals, we are establishing our identity as an industry separate from pest control and trapping. We have established ethical guidelines, a network of communication across the state, provided training opportunities, shared information, and established a referral system that will allow a state-wide system to connect a customer with an ethical operator near them.

This process is moving along at a very fast pace. We are almost incorporated and the lawyer fees are being paid by a long-term mole control contract. Our constitution and bylaws are a blending of the New York State Wildlife Management Association, Connecticut Nuisance Wildlife Control Operators Association, and the Michigan Animal Damage Control Association's constitution and bylaws. We would like to thank them all for their assistance.

Our association has adopted a Code of Ethics which are a suggested minimum standard of professionalism for our members. Many thanks to Robert Schmidt for his guidance. We have almost completed our statewide NWCO Referral List which will recommend our members to anyone needing wildlife damage management assistance. We have already completed some training programs, the IADCA video and book library is in operation, we have manufacturers giving our members equipment discounts, and our meetings are interesting and well attended. Approximately 40% of the NWCOs in Indiana are members of the association, and this number is growing daily.

Other association activities include the following: finalizing a contract with the state to allow business opportunities with the Canada Goose management plan to include nest, eggs, roundups, and transporting; developing a test for NWCOs that might be used in the future to issue permit or certify; finding acceptable insurance coverage for the operators; and providing information to operators on new techniques and health issues. We feel we are off to a good start and are looking forward to our second year.

In short, the association is a great way to communicate, educate, and promote the professional NWCO industry. The best thing about our NWCO association in Indiana is that we are not working against ourselves or fighting any great cause, but rather working for ourselves in a proactive way with everybody involved with nuisance wildlife damage management. We view ourselves as well informed, skilled, professional, ethical, and responsible members of the Nuisance Wildlife Control Industry.

*Tim Julien, President, IADCA* <tjulien@iquest.net>

*Tim Christie, Secretary, IADCA* <tchristie@iquest.net>

For membership information in IADCA, contact Tim Christie at (812) 533-0103 or e-mail: tchristie@iquest.net.

## Humane Trapping Standards Adopted

European Union General Affairs Council decided in late July to sign the Agreement on International Humane Trapping Standards. The Agreement represents more than a decade of work toward humane trapping practices and applies to the types of traps used to capture 19 species of furbearers in Canada, Russia, and the European countries. As a result of this agreement, the European Union will not enact a ban on importation of Canadian wild fur products.

"This Agreement, which is a giant step forward for Europe, establishes humane trapping standards whether animals are being trapped because they are considered a danger to the public safety, a nuisance, or for their fur and nutritional values," noted Bruce Williams, Chairman of the Fur Institute of Canada. "We have invested more than \$11 million in 13 years to improve trapping technologies and, without this work, no progress would be possible. This Agreement puts us in a position to continue this valuable work and ensure that animals are trapped as humanely as technologically possible."

Virtually every country in the world permits trapping of animals for various reasons, and members of the European Union are no exception. For example, in Holland some 400,000 muskrats are killed annually under a government program that calls for the total eradication of the species in Dutch territory at a cost to the taxpayer of \$35 million per year. None of the muskrat that are killed are used for their fur or meat, but rather are left in landfill sites. In contrast, the Canadian muskrat harvest averages approximately 325,000 annually with the pelts being used in the fur trade and meat a welcome addition to many families' menus.

—*excerpted from a news release by the Fur Institute of Canada*

# Video Review

by Stephen Vantassel, NWCO Correspondent

*"Dealing With Urban Wildlife: Learn How to Protect Your Home and Property from Wildlife Damage"*  
created by the Missouri Dept. of Conservation, 1995. 14 minutes, (closed captioned)

"DEALING WITH URBAN WILDLIFE" is the first video attempt by a state agency to educate the public on wildlife damage, of which I am aware. On that basis alone, the Missouri Department of Conservation should be commended. I hope other states will follow the path started by them.

The video, despite its brevity, covers a lot of area. It opens with two sketches of how homeowners respond to animals. The first is a man grilling a hamburger who struggles with a pesky stinging insect. The way he acts out the words on the radio was really cute. A second, and to me, more powerful illustration was the way a gardener screamed when she saw a garter snake. This image struck me more, because most people in animal damage control don't respond to stinging insects, which are more commonly handed by exterminators.

The video then introduces the host, Mike Arduzen, who is an urban wildlife specialist. Mike was an excellent choice for the video because he is not only photogenic, but has an excellent speaking voice. He was either trained as an actor or has had some superb directing.

With Mr. Arduzen as our guide, we're led down the path of living in harmony with wildlife. The first step, he says, is *Understanding Wildlife*. We need to differentiate out that some animals are considered pests because they are not understood (for example, snakes and bats). He continues by saying that other animals like squirrels and raccoons should be taken seriously because of the damage they can cause to property. I deeply appreciated how he said that increased development was only one reason why wildlife damage seems to be happening. I get so tired of hearing people claim that development is the sole cause of increased wildlife damage problems. It was refreshing to see that Missouri biologists haven't fallen into that trap.

The next step on our path is *Reducing Attractions*. He presents a strong message to homeowners to reduce the availability of food to wildlife. While stating that feeding songbirds is fine, feeding other animals like geese, squirrels etc. will only invite further problems. The video has excellent footage of a chipmunk chowing down in a bird feeder. The second part of reducing attractions is to prevent access to your home. An excellent diagram is shown to illustrate where animals typically enter buildings.

The third step is to *Identify the Problem*. Here the information was very weak. Telling the homeowner to look for sign doesn't offer much in helping them know what to look for, and then knowing what they are in fact looking at. The video focused too much attention on too few animal species. A sub-point, entitled Determine the Extent of the Problem, was also very weak in its delivery. Suggesting that homeowners determine how many animals they might have in their home is, to my mind, largely irrelevant. Warning the homeowner about the

possibility of young tells them nothing about what time of year the animal species would have young. A simple chart here, covering the most common species in Missouri, when they have young, and their average litter sizes, would have gone a long way toward educating the viewer.

The next point, *Set a Course of Action / Problem Solving*, was also plagued with some incomplete information. Harassment as a strategy to rid oneself of animal damage should have been more clearly shown. The viewer should have been warned that harassment may have to occur regularly for days before the animal leaves. Fencing as a method to respond to animals was also incomplete. While correctly stating that wire mesh in an "L" form buried in the ground will exclude woodchucks and skunks, it didn't say how deeply the mesh should be buried.

I appreciated the segment on getting help. Showing a homeowner entering a conservation department office and learning about a box trap was an appropriate way to discuss trapping strategy. Missouri deserves high praise for talking about professional private problem animal controllers, also known as NWCOs. Too many state departments of Fish & Wildlife look at us with an askance eye. Closing the video with addresses of various state offices was excellent, and it suggested that further information was easily available.

As I stated earlier, the video was very well made. It was definitely a first-class job. The picture, sound, and acting were all excellent. Some of the tape on various animals alone is worth the price of the video. Even the plastic protective cover of the video is full color and beautifully laid out.

It is easy to beat up on a video that is only 14 minutes long. After all, how much can you say in fourteen minutes? However, the points that I am making would not have taken more than a couple of minutes to make. First, one of my pet peeves with the ADC industry and biologists is their unending use of the phrase "live trap" as a description of box or cage traps. For the record, footholds are "live traps" and some snare configurations are "live traps." Is it too big a request to suggest that professionals stop using the vague and inaccurate term "live trap" to refer to box or cage traps? Our failure to be precise with language just fuels the fire for the disinformation perpetuated by the animal rights movement. Second, the video neglected to tell people what size hardware cloth they should use; the correct answer would have been 1/4 inch. They should have suggested people purchase stainless steel caps rather than generically telling people to cap their chimney. Given that they seemed to support people feeding birds, but not squirrels, they should have given some specific strategies on how to squirrel-proof bird feeders. Third, the video should have been specific on how high the fence should be to protect a garden from rabbits. Finally, they should have been clearer in telling homeowners to

*Continued on page 5, Col. 1*

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# Wildlife Damage in the News...

## National Wildlife Refuge Improvement Act Passes

H.R. 1420 and its sister bill S.1059 have passed Congress, providing legislative approval of hunting and fishing on national wildlife refuges. The bills represent a compromise between the bill's original sponsors and the Administration. The bills elevate wildlife-dependent recreation, including hunting and fishing, on the Refuge system to a priority public use. Provisions in the bills also recognize that wildlife-dependent recreation has been and is expected to continue to be generally compatible with the conservation mission of the refuge system.

Additionally, these bills create a statutory mission statement and planning structure for the national Wildlife Refuge System. Several studies in the last two decades report that refuges have suffered because they are not managed as a national system and lack centralized guidance. These bills direct the Secretary of the Interior to prepare a comprehensive conservation plan for each refuge.

Currently, hunting and fishing occur on over 90% of the nation's federal refuges, but in recent years, extremist anti-hunting groups have actively sought to limit, if not totally

ban, these activities. "America's hunters helped to by three-fourths of the lands purchased for the Refuge System, and [this legislation] protects hunting as a priority use of the Refuge System," noted Tanya Metaska, Executive Director of the National Rifle Association's Institute for Legislative Action.

This legislation is considered by many the most important public lands legislation in the 105th Congress. It received support from such groups as the Congressional Sportsmen's Caucus, the International Assoc. of Fish & Wildlife Agencies, the Wildlife Legislative Fund of America, the Izaak Walton League, the National Wildlife Federation, Safari Club International, NRA, and the Wildlife Management Institute.

## Fund for Animals Tries to Cross-Up Deer Hunting Priests

Is nothing sacred to anti-hunters? When it comes to deer hunting, not even the Catholic church is above attack from groups working toward elimination of all hunting. The latest target of the New York-based Fund for Animals is a group of Michigan priests. In addition to their commitment to Christ, these 14 men of the cloth also share a passion for hunting white-tailed deer.

Last year, after an article about the deer-hunting priests appeared in newspapers across the country, the Fund for Animals sent letters to the priests and to the Vatican, stating that hunting was cruel. Sensibly, neither the priests nor the Vatican responded. As the October 1 bowhunting season opener approached, the anti-hunting zealots were contacting Michigan media to voice their disapproval of the priests' extracurricular activities.

The priests have joked publicly about the good times they have enjoyed in their rustic hunting lodge near Alpena, Michigan, dubbed the "St. Hubert Hunt Camp" in honor of the patron saint of hunters. David Crum, religion writer for the Detroit Free Press, recently reported that the priests describe their camp as "a combination spiritual retreat, fraternal support group and a darned good spot for nailing deer." Over the last 30 years, the priests report a 64-percent success rate for bucks. "Oh of course, we pray for deer. Not only deer, but big deer," one of the priests said in the story about the camp that appeared late last year.

Norm Phelps, a program coordinator for the Fund for Animals, said he hopes to spark a debate with Catholic leaders about the morality of hunting. A spokesman for the priests said they will have no part of it. The Rev. Jack Johnson, a co-owner of the camp and priest at Blessed Sacrament Catholic Church in Midland, Michigan said "I'm not going to get into defending hunting with animal-rights groups because it's a no-win situation."

—articles taken from the *WLFA Home Page* and *newsletters*, and other sources

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## Video Review...

never seal off a hole unless they are sure that it has been abandoned by an animal. Showing the homeowner how to stuff a hole with newspaper to gauge activity would have saved a lot of future property damage.

In all I give this video a "B-". I think that overall, it does far more good than my criticisms may suggest. I think the main points of the video need to be shouted from the mountaintops. Too often the media only deals with animal damage control by making a joke out of it. This video takes the issue seriously and provides viewers with a foundation on how to begin to act on their problem in a responsible manner. I am sure that this will only be the first of many more videos focused on public education.

To obtain your copy send \$11.56 payable to "Missouri Dept. of Conservation," to Missouri Dept. of Conservation, P.O. Box 180, Jefferson City, MO 65102-0180. For further information you can also call (573)751-4115.

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## **Exclosures Around Overflow Pipes and Trees Prevent Beaver Damage**

restricted water flow at the one pond by building a dam around three sides of the barrier. After removing the beaver dam, we installed a perforated intake pipe on the bottom of the pond in front of the barrier. This pipe had an inside diameter larger than the overflow pipe. This pipe was anchored to the bottom of the pond and inserted into the front of the barrier.

Evidently, beavers no longer constructed a dam around the outside of the barrier because they could not raise the water level with the perforated intake pipe carrying water into the barrier. However, this group of beavers learned to enter the overflow pipe behind the dam, crawl up inside of the overflow pipe, and construct a dam along the inside of the barrier. After removing this dam, we constructed and installed a flapper gate on the lower end of the overflow pipe. The combination of the barrier, the perforated intake pipe on the pond bottom, and the flapper gate prevented beavers from restricting water flow through this overflow pipe during the last 5.5 years while all 3 of these devices were present. Beavers have been present at this pond every year during this period.

### **Tree Protection**

We protected 317 trees with 268 exclosures around the 7 ponds and the drainage. Eighteen species of trees were protected with exclosures. We constructed some beaver exclosures around trees each year from 1986 through 1996.

We placed beaver exclosures around trees that were located from 0 to 168 feet from the water's edge, with a mean distance of 35 feet. We used both woven and welded fence wire for beaver exclosures. Exclosure heights varied from 28 to 32 inches. Diameters of exclosures varied from 13 inches to 106 inches with a mean of 43 inches. We drove steel rods along most exclosures to provide support and to anchor exclosures. The number of rods per exclosure varied from 0 to 22 with a mean of 5 rods. We used more rods to provide extra support on large exclosures, exclosures on uneven ground, and exclosures exposed to cattle. We generally cut rods into approximately 3.5- to 4-foot lengths.

We examined trees and shrubs over 4 feet high for beaver damage during July and August 1997. We noted stumps left by beaver as well. Generally, we examined trees and shrubs within the distance from the water's edge equal to the distance of the beaver exclosure farthest from the water's edge. We examined 2,079 trees and shrubs outside the exclosures for beaver damage.

Both types of wire used to construct exclosures adequately prevented beaver damage. When fenced from cattle, both types were still functional in 1997. Rubbing and trampling by cattle usually destroyed exclosures built with welded wire.

Eight of 317 trees protected with wire exclosures were gnawed by beavers during the 11-year period that the exclosures were in use. Beavers did not kill these 8 trees; all 8

trees gnawed by beavers were bald cypress planted at water's edge. Beavers cut some lower limbs of 2 trees outside of the exclosures but did not harm the main stems. Beavers cut some roots of 4 trees outside the beaver exclosures by trenching along the exclosure but did not harm the stems. Beavers gained access inside 2 exclosures by trenching under the exclosures where they cut the main stems. We saw no beaver damage on trees protected with exclosures away from the water's edge.

Beaver cutting of roots and main stems on 5 of the 8 damaged bald cypress trees occurred several years ago during the beginning of the project. We recognized that beavers used the wet soil at water's edge to facilitate their trenching activity. No beaver trenching occurred in the drier soil away from the water's edge. To prevent additional damage, we place 2-3 rows of 6- to 12-inch rock around the bases of exclosures that were located at water's edge. Fifty-four exclosures received such rock. No additional damage to main stems or adjacent roots occurred after placement of the rock.

At the 8 sites with beaver exclosures, visible beaver damage to trees and shrubs outside the exclosures varied from 4% to 60% with a mean of 39%. These measurements of beaver damage probably underestimated the actual damage: Some beaver damage occurred every year of the project, so most of it occurred prior to the damage evaluation in 1997. Much of the older beaver damage was difficult to find due to decomposition of stumps, regrowth of stems, healing of bark, and recently grown dense thickets of greenbrier, poison ivy, and blackberry.

Using 1997 prices, material costs to build the wire exclosures in this project ranged from \$1.40 to \$43.68 per exclosure. For the average exclosure used in this project (new woven wire, diameter of 43 inches, and 5 metal rods) 1997 materials costs were \$8.93. Construction of a typical wire exclosure generally required 30-60 minutes of labor considering travel, accumulation of materials and tools, cutting of materials, and installation. Exclosures on steeply sloping ground and those requiring rock generally required more labor.

### **Conclusions**

Exclosures provide an effective means to prevent beavers from plugging pond overflow pipes and cutting individual trees. Overall, beaver gnawing was seen on only 3% of the trees protected with exclosures, while at least 39% of the trees and shrubs outside exclosures were damaged.

Properly constructed, exclosures should last 20-40 years with minimal maintenance. These exclosures require significant initial investments of time and money, but in many situations they should provide better protection and lower cost over the long term than trapping, shooting, and damage cleanup.

*Continued on page 7, col. 1*

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# Wildlife Damage in the News...

## Beaver Damage Widespread

A Waller County, Texas landowner contacted Wildlife Damage Control Specialist Denise Ruffino requesting assistance with beavers that had cut down an electrical line pole, resulting in a power outage lasting several hours. Ruffino used Conibear traps to remove three beavers from a nearby pond.

In Comanche County, Texas, beavers caused flooding at a flood prevention lake. The rodents had plugged the overflow tube at the dam, and water levels had risen to the point that the lake was about run around the spillway. The county hired a diver to unplug the drawdown tube. About 30 acres of pasture land was flooded and all the grass killed, resulting in a loss valued at \$1,000, plus the cost of the diver. Control efforts using traps were initiated in order to remove the beavers from the location so as to prevent further flooding.

## Cranes, Hogs Decimate Corn

A Zavala County, Texas cattle company requested assistance from the Texas WS program with a problem involving sandhill cranes and feral hogs. Both species had damaged the company's 800-acre corn crop in the early stages of sprouting. One field was damaged so badly that it had to be replanted. The company reported \$95,000 in damage to the corn crop last year. WS personnel lent eight propane cannons to the company, deployed during daylight hours to deter cranes and at night to scare away the hogs. The cannons provided protection for a 60-day period, sufficient for the corn to grow to a size less susceptible to damage. The owner was very pleased with the results, and felt that without the cannons, all 800 acres would have been damaged.

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*Continued from page 6, col. 2*

## Exclosures Prevent Beaver Damage

If we assume an average of 60 hours of labor per year was spent to deal with beaver damage in the early 1980s at the Noble Foundation Demonstration Farm, we constructed the existing beaver exclosures, protecting overflow pipes and trees, with the equivalent of about 5 years of this labor.

Lethal control techniques will continue to have a place in the arsenal of wildlife managers even if the use of beaver exclusion devices become more widespread. Sometimes lethal techniques are necessary to temporarily buy time and save resources while exclosures are being constructed. In situations where it is not practical to individually protect all the trees that a landowner wants protected, lethal control should continue to play an important role.

## Texas Coyotes Damage Melons

Aerial hunting by Texas WS personnel was only partially successful in alleviating damage caused to a 70-acre cantaloupe field in Reeves County. The farmer reported an estimated crop loss of \$2,000. Because the field was partially surrounded by fence, WS specialists were able to tighten up some sections of fence and then install snares. Thirty coyotes were removed in two weeks just in the cantaloupe field, and since that time, loss of melons has been minimal.

## Fox Attacks California Woman

An 86-year-old woman in Mariposa County, California, kept a gray fox at bay by hitting it with her cane, after it attacked her at her home. Upon arrival at her residence, the WS specialist was shown the cane with numerous bite marks. The specialist located the fox, which immediately attacked him, resulting in its being shot. The county health department's tests confirmed that the fox was rabid.

## Drip Irrigation Damaged by Coyotes

More than \$70,000 in damage to drip irrigation lines in Kern County, California orchards and vineyards was reported to WS personnel. Several farmers reported coyote damage to systems installed for irrigation of grapevines, citrus, prune, and apricot trees. WS specialists removed several coyotes with padded jaw leghold traps, denning, calling and shooting, and aerial hunting, in an effort to alleviate the damage.

## Wolf Conflicts Sets Record in Minnesota

To date in 1997, 47 wolf depredation complaints on livestock or poultry have been verified at 43 farms. Wildlife Services personnel have captured and removed 86 wolves this year. In comparison, 27 such complaints were verified at 24 farms and 39 wolves captured and removed during the same period in 1996. Biologists speculate that wolf depredation on livestock may be increasing because wolves are finding it more difficult to locate and kill vulnerable deer, whose numbers have been reduced by two consecutive winters of severe weather. The Minnesota wolf population is an all-time high of about 2,300 animals.

*—the above items are taken from The Trapline, the monthly newsletter of the Texas WS program.*



*The Editor thanks the following contributors to this issue: Tim Christie, Mark Collinge, Brady DeVille, John Holman, Grant Huggins, Tim Julien, Gary Nunley, Michael Porter, and Stephen Vantassel. Send your contributions to The PROBE, 4070 University Road, Hopland, CA 95449.*



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