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Observations of the "Rodentator" Device for Controlling Black-Tailed Prairie Dogs

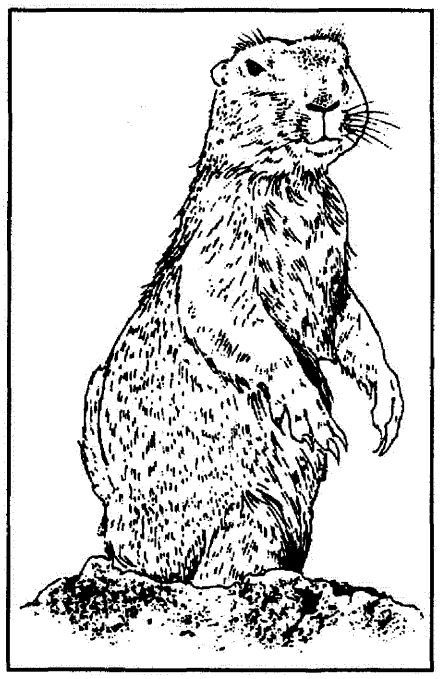
Monty Sullins, Vertebrate Pest Specialist, Montana Department of Agriculture

ABSTRACT

A field trial was conducted to observe and record the results of a propane/oxygen activating device called "Rodenator" used to control black-tailed prairie dogs. Ignition of the gas mixture resulted in a reduction in activity by 85.4% and 86% on two test plots. Data on application time and cost of materials are also presented.

INTRODUCTION

The use of concussion by electronically activating a mixture of propane and oxygen has been used in recent years as an alternative control method for burrowing rodents. Several technical reports by the Montana Department of Agriculture (Sullins and Sullivan 1991,1992,1993) reported on the field observations of devices such as Rodent Torch and Rodex 4000. Results were often shown to be labor intensive and yielded poor efficacy. Another device called the "Rodenator"[1] has recently been developed by Meyer Industries of Midvale, Idaho. This device was reportedly heavier duty, more reliable and more efficacious. Communications with Ed Meyer resulted in an agreement to conduct a field trial to observe the operation and results of using the "Rodentator" to control Black-tailed Prairie Dogs (*Cynomys ludovicianus*). The purpose of this report is to summarize the data and observations of that field trial.



STUDY AREA

The treated plots used in this field trial were located on privately owned land near Dean, Montana, in the foothills of the Absaroka Mountains in south central Montana. The principle agricultural use of the area is livestock production with rangeland, pasture, alfalfa, and small grains being the major crops.

METHODS AND MATERIALS

Two black-tailed prairie dog towns of approximately 20 acres each were chosen for treatment using the "Rodenator" propane/oxygen device. These towns were not in close proximity to each other and no other prairie dog towns were located nearby. One counting plot was set up on each town (plots A and B). These counting plots measured 3.5 and 7.5 acres, respective-ly. Active prairie dogs were counted on each plot using binoculars from a common vantage point for three consecutive days prior to and three consecutive days after treatment. Three counts were made each day at 5-minute intervals. An average of these nine counts pro-

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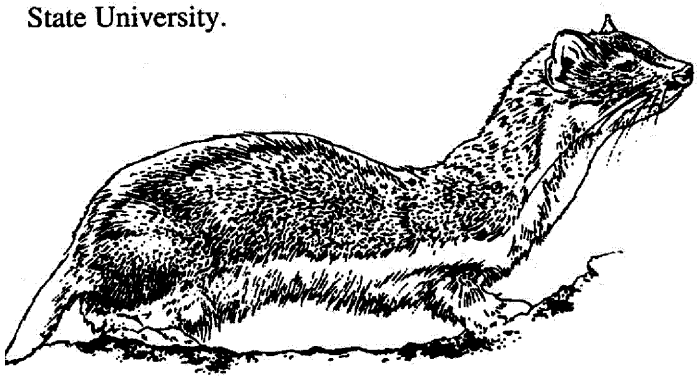
Bruggers to Head NWRC

Dr. Rick Bruggers has been selected to serve as the Director for the USDA/APHIS Wildlife Services, National Wildlife Research Center (NWRC) in Ft. Collins, CO. Rick has been with NWRC for over 25 years in a number of positions of increasing responsibility. For the last 10 years, Rick has served as the Assistant Director at the Center.

Prior to that time, Rick was the Chief, International and Special Programs Unit at NWRC. Rick received his Bachelor's degree in biology from Hope College in Michigan; his Master's degree from Bowling Green State University in Ohio, and his PhD from Bowling Green State University.



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Your contributions 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.

CALENDAR OF UPCOMING EVENTS

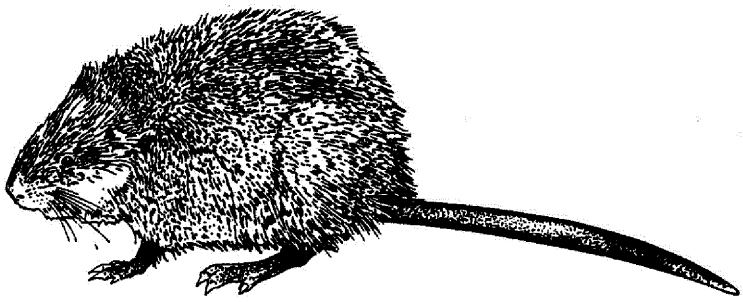
January 24-26, 2005 — 11th Annual Wildlife Control Technology Seminar, Circus Circus Hotel, Las Vegas. Co-sponsored by WCT Magazine and the National Wildlife Control Operators Assoc. Information at http://nwcoa.com/

March 8-12, 2005 - The 23rd Annual National Wildlife Rehabililtators Association Symposium, "Working Together for Wildlife," Minneapolis, MN (www.nwrawildlife.org)

March 15-16, 2005 - The Northeast Regional Community and Urban IPM Conference Radisson Hotel- Manchester, New Hampshire. Conference sessions will cover a wide range of topics, including wildlife damage management. For more information, visit the conference web site (http://nepmc.org/conference2005_index.cfm) or contact Liz Thomas (315-787-2626 egt3@cornell.edu). Opportunities remain fororganizations and businesses to exhibit at the conference, to jointhe financial sponsors, or to volunteer in conference organization.

May 17-19, 2005 - 11th Wildlife Damage Management Conference, Holiday Inn West Bay, Traverse City, Michigan. Organized by the Wildlife Damage Management Working Group of The Wildlife Society. For additional information, contact Kathleen Fagerstone at Kathleen.A.Fagerstone@aphis.usda.gov or visit the web site, http://wildlifedamagegroup.unl.edu.

August 18-25, 2005- National Trappers Association, National Convention, Elkhart County Fairgrounds, Goshen, IN. See http://www.nationaltrappers.com/



Ever Wonder?

Are rodents immune from contracting rabies?

No mammals are immune from rabies infection; however, natural rabies infection in rodents are highly exceptional. Incidents of rabies in rodent species have been reported from Eastern Europe. A reasonable explanation for the rarity of rabies developing in rodents is that the rodents do not survive the effects of the bite from the predator that gave it to them.

Source - Excerpted from ProMED-AHEAD Digest V2004 #293

The ICWDM Continues to Evolve

Stephen Vantassel, New Project Coordinator of Distance Education, University of Nebraska-Lincoln School of Natural Resources

The Internet Center for Wildlife Damage Management (ICWDM) is pleased to announce a number of improvements to the site. We trust that these changes will make the site even more useful for our visitors. The improvements fall into two different categories, namely content and organization. Under "Content", we have added 2003 and 2004 Bird Strike Conference publications. Rob Erickson, Publisher of *Wildlife Control Technology Magazine*, has graciously permitted the ICWDM to republish all six issues of the trade magazine's inaugural year. Biologists and field technicians, interested in learning about new capture techniques, should take a look at this publication. Finally, we have added more links to help visitors become aware of the best sites available relating to wildlife damage management.

The Center has also improved the organization of the content on the site. Link headings have been renamed to be better reflect the underlying content. For example, the link formerly known as "University Publications" has been changed to "Wildlife Publications". This name change is not only more descriptive but it also is more accurate because non-university publications are also included. Visitors should be pleased to know that publications are now listed by species rather than under the name of the publishing university. Don't worry, however, the university links are still there but are now listed by state. To aid visitors even further, publication titles also cite the source to help researchers find information relative to their part of the country. By the time this is published, we will have finished a top to bottom check of our links to reduce the dreaded "site not available screen". The site can be found at:

http://wildlifedamage.unl.edu.

Future plans include the creation of a photo library related to wildlife damage management. We have collected several hundred photos already and are working to make them available soon. We believe the "visual story" of wildlife damage management needs to be told and we hope you would agree. We are requesting that anyone with photos of animals, damage, feces, middens, prints, dens, control equipment, etc. consider making them available to a broader audience. If interested in more information, please contact Stephen Vantassel svantassel2@unl.edu

Of course, content will continue to be expanded with additional articles of various Proceedings. Presently we are editing almost 400 pages of documents. We hope you will stay tuned. As always, we appreciate your input, suggestions etc. We are always looking to increase the usability of the site. Perhaps you know of a site or book or photo that should be added to our site. By all means, drop me a line. I would love to hear from you.

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Wyoming Presents Grizzly Bear Management Proposal

The Wyoming Game and Fish Department (WGFD) recently began a series of public meetings to present key aspects for managing grizzly bears in northwestern Wyoming, reports the Wildlife Management Institute.

The plan's basis is to divide the region's grizzly habitat into three management areas. The habitat closest to Yellow-stone National Park, where most of Wyoming's grizzlies live, would receive the most protection. Referred to as the "primary conservation area," management decisions in this area would favor the bears. In the next or middle area, which includes most of northwestern Wyoming, including the Wind River Range, concerns for grizzlies and humans would be considered equally in management decisions. In the third or outer area, lands roughly outside a line from Cody to Lander, down to Farson and back to Pinedale and west to Kemmerer, grizzlies would be controlled through hunting seasons and by removal of nuisance bears that cause conflicts with humans and/or livestock.

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The WGFD used such environmental factors as bear denning locations, whitebark pine stands and core habitat locations to help make the area determinations. Human-use factors, such as road density, human/bear conflict areas, oil and gas development, timber harvests and livestock grazing, also were part of the determinations. Private lands, sheep allotments and high potential oil and gas development areas were particularly avoided.

The draft guidelines were developed by an internal WGFD working group, which considered an analysis of public opinion that had been gathered during drafting of the state's grizzly bear management plan in 2002. The guidelines addressed concern by reviewers of the 2002 plan that the outer boundary was too vague and included significant amounts of private property and habitats that were unsuitable for bear occupancy.

This Wyoming plan is part of the geographically broader strategy to remove the grizzly bear from the federal endangered species list. The grizzly was placed on this list more than 20 years ago, and the present number of grizzlies exceeds target recovery goals-a key factor in delisting consideration. Also for delisting to occur, the states of Wyoming, Idaho and Montana each have been required to develop draft management plans and have them approved by the US Fish and Wildlife Service. Plans for Idaho and Montana already have been approved. The Service did not approve Wyoming's 2002 plan.

The WGFD is accepting public comments online (http://gf.state.wy.us/>http://gf.state.wy.us/) or mailed to the Department headquarters at 5400 Bishop Blvd., Cheyenne, Wyoming 82006. The full draft report can be found at <http://gf.state.wy.us/wildlife/GBOccupancy/index.asp>http://gf.state.wy.us/wildlife/GBOccupancy/index.asp. It is expected that the final plan will be released in April 2005. (lhc)

Source - Outdoor News Bulletin, Vol. 58, No. 12, December 14, 2004

The editor of THE PROBE thanks contributors to this issue: Monty Sullins and Stephen Vantassel.

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"Rodentator" Device for Controlling Black-Tailed Prairie Dogs

vided pre-and post-treatment activity indices. These indices were used to calculate percent reduction in activity by using the formula:

$$\text{Percent Reduction In Activity} = \frac{\text{Pre-treatment AI - Post-treatment AI}}{\text{Pre-treatment AI}} \times 100$$

Data regarding time and cost of application materials were also recorded.

In this trial, two "Rodenator " units and 4 workers were used for the application operation.[1] Application equipment consisted of the "Rodenator" devices, oxygen and propane hoses on retractable reels, propane and oxygen regulators, and cylinders. This equipment was transported in the back of a pickup truck and on a specially designed trailer provided by Meyer Industries, which was towed by an ATV.

Applicators wore helmets and hearing protective equipment. The preset propane/oxygen mixture was injected for one minute per burrow prior to ignition. Treated holes were plugged with soil after application to help determine any post-treatment use of the burrows. A buffer zone of about 300 feet beyond the counting area was also treated with the "Rodenator" to help prevent reinvasion of prairie dogs onto the treated plots from immediate adjacent areas.

RESULTS

Results of this field trial are summarized in Table 1.

(1) Pre-treatment activity index: average of 9 counts of active prairie dogs on 3 consecutive days prior to treatment.
(2) Post-treatment activity index: average of 9 counts of active prairie dogs on 3 consecutive days after treatment.
(3) Percent reduction of activity calculated by the formula:

$$\text{Percent Reduction In Activity} = \frac{\text{Pre-treatment AI - Post-treatment AI}}{\text{Pre-treatment AI}} \times 100$$

Under the conditions of this study, prairie dog activity was reduced by 85.4 percent and 86 percent for Plots A and B, respectively. Post-treatment prairie dog activity continued to increase after treatment until a maximum of 9 and 31 active prairie dogs were counted 10 days post-treatment on Plots A and B, respectively. The application time using two "Rodenator " units and 4 workers was 12 man-hours for Plot A and 30 man-hours for Plot B. A total of 42 man-hours were required treat 11 acres. The number of burrow entrances treated was 115 for Plot A and 293 for Plot B.

DISCUSSION

The reduction in prairie dog activity by 86 percent obtained in this field trial was considerably higher than that obtained in previous studies with similar devices. This level approaches that of other control methods, such as baiting with rodenticides or usingburrow fumigants. One of the main questions that was not answered by this and previous similar studies is the increasing numbers of prairie dogs that appear a few days after treatment. Close observations using a high-powered spotting scope did not reveal any wounded or un-

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Table 1. Efficacy, application labor, and cost of materials using the "Rodenator " concussion device as a control on two Black-tailed prairie dog plots.

Plot/size (Acres)	Pre-Treat AI (1)	Post-Treat AI (2)	Percent Reduction(3)	Man-Hrs for Appl.	Cost of. Oxygen	Cost of Propane	Number of Shots
A - 3.5 acres	22.6	3.3	85.4	12	$19	$1.00	115
B - 7.5 acres	57.3	8	86	30	$66.50	$4.00	293

Vantassel Moves to the University of Nebraska

Stephen Vantassel is the New Project Coordinator of Distance Education for the University of Nebraska-Lincoln School of Natural Resources. Stephen fills the position vacated by Dallas Virchow, who moved to Wildlife Services in November of 2003. This position includes serving as the webmaster for the Internet Center for Wildlife Damage Management. (See article on this page of *THE PROBE*)

Stephen brings to the position a unique set of experiences. He achieved a B.A., Class of '87, in Biblical Studies from Gordon College in Wenham, Massachusetts and a M.A.T.S., Class of '89, in Old Testament from Gordon-Conwell Theological Seminary in S. Hamilton, Massachusetts. He worked as an Emergency Medical Technician for several summers and eventually became a Lab Instructor for the Emergency Medical Technician Class at Springfield College.

All the while, Stephen maintained his interest in the field of animal damage control. He became one of the first Problem Animal Controllers in the state of Massachusetts and one of the first nationally Certified Wildlife Control Operators. He began Wildlife Removal Service, Inc., headquartered in his hometown of Springfield, Massachusetts which he eventually sold in 1998. He also founded the Massachusetts Association of Problem Animal Controllers, which continues to this day.

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Stephen has discussed topics related to wildlife damage control on television, radio and in public settings. But his greatest impact is to be found in the area of publishing. He has articles published in a variety of magazines and newsletters including, but not limited to, ***THE PROBE***, *Fur-Fish & Game*, *Trapper & Predator Caller*, *Animal Damage Control*, etc. He is a former Assistant Editor for *Wildlife Control Technology Magazine* and remains a staff writer. He has also published two books, both of which underwent expansions, *The Wildlife Removal Handbook*, rev. ed. And the *Wildlife Damage Inspection Handbook* rev. ed. Stephen's publishing also extends beyond the printed page to the web, where he has a "Living with Wildlife" column on Suite101.com.

*...his greatest impact is to be found in the area of publishing. He has articles published in a variety of magazines and newsletters including, but not limited to, **THE PROBE**, **Fur-Fish & Game**, **Trapper & Predator Caller**, **Animal Damage Control**, etc. He is a former Assistant Editor for **Wildlife Control Technology Magazine** and remains a staff writer.*

Stephen is working towards a Doctorate in Theology where he plans to write his thesis on the Christian view of animals and the environment. He believes that his academic training coupled with "real-world" animal damage control experience provides him with a unique perspective on this controversial topic.

Stephen is excited about the opportunity to work here at the University of Nebraska. He sees it as a chance to provide appropriate animal damage control advice to an even wider audience.

Stephen is happily married to Donna Vantassel who works as a Critical Care Nurse for St. Elizabeth's Hospital in Lincoln, Nebraska. Both, along with their indoor cat "Kasper", live in Lincoln.

Continued from page 5, col. 2

"Rodentator" Device for Controlling Black-Tailed Prairie Dogs

healthy prairie dogs. This would tend to indicate that either these prairie dogs were somehow escaping the control method or they were new immigrants from adjacent areas. Prairie dogs are usually very territorial for most of the year but at the time that this field trial was conducted the young-of-the-year were nearing adult size. Immigration into the newly vacated burrows may occur quite rapidly at this time.

If this control is used on large areas and immigration becomes a factor, controlled areas may have to be retreated. To determine if immigration is a factor or if the prairie dogs are surviving the control, a smaller prairie dog town (5 or 6 acres) that is isolated from any nearby prairie dog colonies should be treated using this control method and observed for a couple of weeks post-treatment.

Application time using 4 workers and 2 Rodenator " units in this study required 12 and 30 man-hours to treat 3.5 acres and 7.5 acres on Plots A and B, respectively (42 man-hours for 11 acres combined). This may be considered labor intensive for large acreages but may be practical for small or medium acreages providing that efficacy is consistently good.

Cost of oxygen and propane used for treatment in this field trial was $20.00 for Plot A and $70.50 for Plot B. Cost per acre and per hole would be $5.71 per acre (17 cents per hole) and $9.40 per acre (24 cents per hole) for Plots A and B, respectively. Observations of the "Rodenator" in operation indicated it to be a much more reliable device than those tested in other studies. No equipment failure occurred during the field trial.

Cost for labor and materials will vary with each application depending on acreages to be treated, hole density, and private landowner or commercial application. Initial cost of the required equipment is approximately $1800.

ACKNOWLEDGEMENTS

Thanks and appreciation to Merrill Ostrum for providing the use of his property and to Meyer Industries for providing the equipment, materials, and labor used in this field trial.

REFERENCE

Sullins and Sullivan 1990. *Observations of a Gas Exploding Device for Controlling Black-Tailed Prairie Dogs*. Montana Dept. of Ag. Report 90-04. 4pp.

Sullins and Sullivan 1991. *Observations of a Gas Exploding Device for Controlling Burrowing Rodents*. Montana Dept. of Ag. Report 91-02. 5pp.

Sullins and Sullivan 1993. *Observations of a Gas Exploding Device for Controlling Pocket Gophers*. Montana Dept. of Ag. Report 93-01.5pp.

Articles Needed–
What's Happening Where You Are?

The Probe is your newsletter and needs your input! What's going on in your area? Anything new in Animal Wildlife Control? Have you read any helpful books lately? Are there seminars you would recommend?

Send your news to the editor at:

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or e-mail: sullivan@ag.arizona.edu

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