Wildlife Damage Control on Rangelands

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Major Range Pests in Montana

Prairie dogs

Ground squirrel

Wolves

Deer

Elk
Prairie Dogs
Control Methods

- Shooting
- Trapping
- Fumigants
- Toxicants
Control Methods

- Shooting
- Trapping
- Fumigants
- Toxicants
Shooting

- Expensive or free?
- FUN!
- When will it work?
- May be dangerous near houses, livestock
- CREATES HOMES FOR JUVENILE PRAIRIE DOGS!
Control Methods

- Shooting
- Trapping
- Fumigants
- Toxicants
Control Methods

- Shooting
- Trapping
- Fumigants
- Toxicants
Fumigants

- Expensive ($ and time)
- Deadly
- General or Restricted Use
Fumigants

- Phostoxin
- Must put in tunnel system
Control Methods

- Shooting
- Trapping
- Fumigants
- Toxicants
Zinc Phosphide

- Restricted use
- Single, lethal dose
- Converts to phosphine gas when moist
For best results:

- Apply during dry periods or BEFORE green-up.
For best results:

- Apply during dry periods or BEFORE green-up.
- **Prebait** with clean rolled oats and establish bait acceptance
- Apply 1 teaspoon **near** each burrow—DON’T pile and DON’T scatter!
- ZP does not taste good to prairie dogs!
- **Follow all label directions!**
USE RESTRICTIONS
This product may only be used to control black-tailed prairie dogs (Cynomys ludovicianus) and white-tailed prairie dogs (C. leucurus) on rangelands and pasturelands in the States of Kansas, Montana, Nebraska, North Dakota, South Dakota, and Wyoming only during the period from July of one year to February of the next year. Only one application within this period is permitted. One additional application within this period is permitted only if the treated area has been re-infested by prairie dogs from neighboring lands. Do not exceed the application rate. Apply only to rangeland with less than 50% ground cover. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. Keep all other persons out of the treated area during application.
Montana, Nebraska, North Dakota, South Dakota, and Wyoming only during the period from July of one year to February of the next year. Only one application

Montana has an exception!
ROZOL Prairie Dog Bait

- Now allowed in Montana.
- Restricted use.
- Severe label limitations.
- Anti-coagulant
- Tastes good to prairie dogs!
PRECAUTIONARY STATEMENTS
Hazard to Humans and Domestic Animals

CAUTION: Harmful if swallowed or absorbed through the skin because it may reduce the clotheability of blood and cause bleeding. Keep away from children, domestic animals and pets. Do not get in eyes or on skin. Do not breathe dust. Wash hands after handling and before eating, drinking, chewing gum, using tobacco or with other contact. If contact occurs, wash immediately with soap and water. Do not eat, drink or smoke while handling this product.

USER SAFETY REQUIREMENTS: Follow manufacturer's instructions for cleaning. Do not wash PPE separately from other laundry. Remove PPE immediately after handling this product. Wash the outside of gloves before taking off. As soon as possible, wash hands thoroughly after applying bait and before eating, drinking, chewing gum, using tobacco or with other contact. If contact occurs, wash immediately with soap and water. Do not eat, drink or smoke while handling this product.

TREATMENT FOR PET POISONING: If animal eats bait, call veterinarian at once.

NOTE TO PHYSICIAN OR VETERINARIAN: Contains chlorohydrin, an anticoagulant. If swallowed, this material may reduce the clotting ability of the blood and cause bleeding. For humans or for dogs that have ingested this product and/or have been exposed to symptoms (bleeding or prolonged prothrombin times), give vitamin K1, intravenously or orally.

ENVIRONMENTAL HAZARDS: This product is toxic to fish and wildlife. Dogs and other predators exposed to raloxifene may be poisoned. If exposed upon animals that have eaten this bait. Do not apply directly to water, or to areas near surface water. Do not contaminate water, food, or feed by disposing of in the area.谤球Toxic to aquatic organisms in water adjacent to treated areas.

RESTRICTED USE PESTICIDE
DUE TO HAZARD TO NONTARGET ORGANISMS
For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's Certification.

DIRECTIONS FOR USE
It is a violation of Federal law to use this product in a manner inconsistent with its labeling. READ THIS LABEL and follow all use directions and precautions. Only for use in the United States, and the applications specified on this label. The following restrictions are in addition to those specified on the label:

1. This product is not for use in a location out of reach of children, pets, or other nontarget animals to reduce hazards. To help prevent accidents:
   a. Hang the label in a prominent location.
   b. Place the bait out of the reach of children or pets.
   c. Use in an area where the baited containers can be monitored.
   d. Keep the baited containers away from water sources where wildlife may enter.
2. Dispose of product container, unused, spilled, and unused bait as specified on this label. Use restrictions may only be used as follows:
   a. Site/Pest: Black-Tailed Prairie Dog (Cynomys ludovicianus) on rangeland and adjacent livestock areas.
   b. States: Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Ohio, South Dakota, Texas, and Wyoming. Do not apply this product within the exterior boundaries of the Crow Reservation or the Blackfoot Reservation in Montana.
   c. Application Method: Apply bait by hand or mechanical equipment application with application equipment that is designed, constructed and operated in a manner that ensures that bait is not used below the prairie dog burrows. This product may only be used in underground burrows. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply bait on or above ground level. Do not apply ba
**ROZOL label restrictions:**

- Bait must be placed at least 6 inches down the prairie dog burrows.
- Not allowed on reservations.
- Must establish carcass search procedures.
- Exclude livestock grazing for 14 days.
- Apply between October 1\textsuperscript{st} and \textbf{March 15th}
Why bother?

- Another tool to control prairie dogs.
- May loosen restrictions at a later time.
- Rozol is a VERY palatable bait.
Other prairie dog control methods:

- Rodenator !!
Other prairie dog control methods:

- **Vacuums!!**
Other prairie dog control methods:

- Slurry pump
Ground squirrels VS Pocket Gophers
Ground Squirrel

- 7.5-9.5”
- Diurnal and visible
- Hibernate during winter
- Mounds/occupied areas not as visible as prairie dog’s
Damage potential:

- Little quantified information on rangelands.
- Average 22% reduction in alfalfa production.
Control Methods

- Shooting
- Trapping
- Fumigants
- Toxicants
Ground Squirrels in Montana

- **March**: Males emerge
- **April**: Females emerge and breeding occurs
- **May**:
  - Young are born
- **June**:
  - Young emerge
  - Indicated breeding period, and optimal time to employ control methods
- **July**:
  - Young disperse
- **August**:
  - Enter hibernation
  - After emergence of young, control methods are less effective
Control Methods

- Shooting
- Trapping
- Fumigants
- Toxicants
Shooting

- Expensive or free?
- FUN!
- When will it work?
- May be dangerous near houses, livestock
- Creates homes for juvenile ground squirrels!
Ground Squirrels in Montana

- Males emerge in March.
- Females emerge and breeding occurs in April.
- Young are born in May.
- Young emerge in June.
- Young disperse in July.
- Enter hibernation in August.

Indicates breeding period, and optimal time to employ control methods.

After emergence of young, control methods are less effective.
Ground Squirrels in Montana

March
Males emerge

April
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Indicates breeding period, and optimal time to employ control methods
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Enter hibernation

After emergence of young, control methods are less effective
Control Methods

- Shooting
- Trapping
- Fumigants
- Toxicants
Trapping

- Time consuming
- Excellent capture/kill rate
- Non-target hazard
  - Watch out for cats (and dogs)!
Control Methods

- Shooting
- Trapping
- Fumigants
- Toxicants
Fumigants

- Expensive ($ and time)
- Deadly

- General or Restricted Use
  - Gas cartridges
  - Phostoxin
Control Methods

- Shooting
- Trapping
- Fumigants
- Toxicants
STRYCNINE IS ILLEGAL FOR GROUND SQUIRREL CONTROL !!!
DON’T USE STRYCHNINE!

- No longer labeled for use except UNDERGROUND on pocket gophers

- Toxicants labeled for use on ground squirrels include:
  - Zinc Phosphide, Diphacinone (Ramik), Chlorophacinone (RoZol)
Toxicants

- Usually most cost-effective
- Watch out for non-target species!
If applying toxic bait...

- Remove livestock

- Apply in Spring
  - Population at lowest
  - Lower cost/acre
  - Less bait
  - Lower non-target hazard
Ground Squirrels in Montana

- **March**: Males emerge
- **April**: Females emerge and breeding occurs
- **May**: Young are born
- **June**: Young emerge
- **July**: Young disperse
- **August**: Enter hibernation

Indicates breeding period, and optimal time to employ control methods.

After emergence of young, control methods are less effective.
Zinc Phosphide

- Restricted use

- Single, lethal dose

- 85-95% effective, if used properly
  - Bait shyness can occur otherwise
  - Bitter taste

- Converts to phosphine gas when moist
For best results:

- Apply before Spring green-up
- Prebait with clean rolled oats and establish bait acceptance
- Apply 1 teaspoon near each burrow
- Follow all label directions!
RoZol

- Restricted Use
- Anti-coagulant
- 2 doses needed
- Pre-bait recommended, not necessary
- Can now be used in bait stations in Montana
Ramik-Green

- General Use
- Delivered via bait station
- Low maintenance
- Maximum spacing 200 feet (1 per acre)
- 1-2 weeks for familiarization
- 5-10 days until death
Inverted "T" Bait Station

PLASTIC CAP

SAND END TO A SLIP FIT

(36" to 50") INCHES

UPRIGHT

CUT

(18"

ARM

CUT

20"

20"

45"

PVC (4") T

(4")
MSU’s Ground Squirrel Control Demonstration
Other Methods of Ground Squirrel Control
OTHER CONSIDERATIONS

- Encourage predators
Ground Squirrel Predators

- Predators should be encouraged! BUT....
- Predators will NEVER control rodents!
- Coyotes, fox, weasels, owls, hawks, eagles, badgers, skunks, snakes
OTHER CONSIDERATIONS

- Encourage predators
- Reclamation
OTHER CONSIDERATIONS

- Encourage predators
- Reclamation
- Rodentator!!!
OTHER CONSIDERATIONS

- Encourage predators
- Reclamation
- Rodentator!!!
- Gumballs!!
OTHER CONSIDERATIONS

- Encourage predators
- Reclamations
- Rodentator!!!
- Gumballs!!
- Exclusion
OTHER CONSIDERATIONS

- Encourage predators
- Reclamation
- Rodentator!!!
- Gumballs!!
- Exclusion
- Slurry machine
OTHER CONSIDERATIONS

- Encourage predators
- Reclamation
- Rodentator!!!
- Gumballs!!
- Exclusion
- Slurry machine
- Cultural Methods
Cultural Methods of Ground Squirrel Control

- Tall grass
- Flood irrigation
- Frequent crop rotation
- Tillage
- Eliminate old holes
- Coordinate with neighbors
DEER AND ELK CONTROL
Deer and Elk Control

- Repellents
- Exclusion
- Population Reduction
“Area” repellents or “Contact” repellents
Area repellents are usually not effective

- Human hair
- Bloodmeal
- Soaps
- Urine
- Ultrasonic devices
Deer and Elk Control

- Repellents
- Exclusion
- Population Reduction
Electric Fences work best if:

- 6 feet high
- At least 3000 volts.
- Timely maintenance
- At least 6 strands
  - (3 hot + 3 ground)
- Peanut butter coat
Poly Fences
Fence designs to repel deer and elk from high value pastures. (Knight and Fenster 2005)
Permanent solution is net-wire fence

- 6 feet high
  - 4 ft + 2 ft is easiest
More economical solution is to extend the height of existing fences

- $3500 per mile
Elk and Deer-Proof Fence at $3500/ mile

- Potential solution to brucellosis exposure?
- Potential solution to excessive private land grazing by deer and elk?
Deer Control

- Repellents
- Exclusion
- Population Reduction
But to use hunting to reduce a deer herd, remember....
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- Killing a buck removes one buck from the herd.
But to use hunting to **reduce** a deer herd, remember....

- Killing a buck removes one buck from the herd.
- Killing a doe removes One doe from the herd.
But to use hunting to reduce a deer herd, remember....

- **Killing a buck removes**
  - one buck from the herd.

- **Killing a doe removes**
  - One doe from the herd
  - PLUS her future offspring
But to use hunting to reduce a deer herd, remember....

- Killing a buck removes one buck from the herd.

- Killing a doe removes
  - One doe from the herd
  - PLUS her offspring
  - PLUS her offspring's offspring
Wolves in Montana
Current Status of Wolves in Montana

- **End of 2012**
  - 625 wolves
  - 147 packs
  - 37 breeding pairs

- **Wolf count decreased over 4% in 2012**
  - Does not include the 95 wolves taken by hunters and trappers between Jan. 1 and Feb. 28, 2013
  - 15% increase in 2011
  - 8% increase in 2010.
175 wolves taken by hunters and trappers in 2012.

121 taken by hunters in 2011.

95 wolves harvested by hunters and trappers so far in 2013.
Livestock Depredation from Wolves in 2012

- 67 cattle, 37 sheep, one dog, two horses and one llama in 2012.
- Cattle losses (67) lowest recorded in six years.
New Legislation Passed

- Will allow hunters to purchase up to three wolf license (was 1).
- Lowers the price of a nonresident wolf license to $50 (was $350).
- Allows for wolf hunters to use their license 24-hours after purchase (was 5-day wait).
- Authorizes the use of electronic calls.
- Removes the requirement for wolf hunters to wear hunter-orange clothing after the general deer and elk hunting seasons have ended.
Some Factors That Will Influence Wolf Dispersal and Population Growth

- Prey base
- Mortalities
- Resumption of natural dominance hierarchy mechanisms
- Human conflicts
- Impacts on hunting
- Dispersal of elk
- Disease
Wolves being managed by the states provides significant benefits:

- Local concerns and priorities included in decisions.
- State political forces receptive to Montanans.
- Management decisions can take other game populations into account.
- More difficult to use wolves as a tool to support other agendas…
Environmental extremists were using wolves as a tool.

- To enhance funding.
- To control public land management.
- To effect livestock grazing.
- To effect bison management.
- To control logging.
- To remove snowmobiles.
- To influence mining.
- To effect recreation.
- To eliminate predator control.
- To eliminate hunting and trapping.
Wolves—What can a rancher do?

- Wolves can be shot if they are in the “act of attacking, killing, or threatening to kill livestock”.
  - “Physical evidence of the wolf attack or that an attack was imminent is required”

- Wolves may be opportunistically hazed or harassed in a non-injurious manner anytime.
  - “Should” report this to FWP.
Wolves—What can a rancher do?

- If you find a suspected wolf kill:
  - You should do what you can to preserve the evidence of predation.
  - Call USDA Wildlife Services

  John E. Steuber,
  USDA Montana Wildlife Services State Director

Phone: (406) 657-6464
Preserving the evidence

- ASAP !!
- Take pictures or videos
- Watch where you step.
- Put cans or buckets over tracks
- Tracks may be visible only on thin dust
- Put tarp or plastic cover over carcass
- Write down notes (time, dates, witnesses, observations, numbers, colors, etc.)
Identifying Wolf predation