Concepts of Vertebrate Pest Management

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Resources...

- Vertebrate Pest Control Handbook
- Prevention and Control of Wildlife Damage

Internet resources:
- Federal/State agencies
- Universities
- Commercial sites

Who gets involved?...

- Extension
- Colorado Department of Agriculture
- USDA APHIS Wildlife Services
- Colorado Parks and Wildlife
- Environmental Protection Agency
- US Fish and Wildlife Service

Public involvement....

People for the Ethical Treatment of Animals • Wild Horse and Burro Freedom Alliance • Activists for Animals • American Horse Defense Fund • American Mustang and Burro Association • Animal Legal Defense Fund • Animal Protection Institute • Animal Welfare Institute • Colorado Wild Horse & Burro Coalition • Front Range Equine Rescue • The Fund for Animals • Hheved Animal Humane Society • Humane Society of the United States • Project Equus • Wild Horse Spirit • Animal Liberation Front • American Society for the Prevention of Cruelty to Animals • Animal Rights Coalition, Inc. • Animal Rights, Inc. • Animal Rights Mobilization • Animal Rights Network, Inc. • Animal Political Action Committee (ANPAC) • Center for Respect of Life and Environment • Coalition of Municipalities to Ban Animal Trafficking • Coalition to Protect Animals in Parks & Refuges • Committee to Abolish Sport Hunting • Dairy Day Animal League • Focus on Animals • The Marian Rosenthal Koch Fund • Friends of Animals, Inc. • Fund For Animals • The Fund for Animals, Inc. • International Fund for Animal Welfare (IFAW) • International Society for Animal Rights, Inc. • Jews for Animal Rights • Ministry for Animals • National Society of Musicians to Animals • Psychologists for the Ethical Treatment of Animals • Respect of Animals Rights (RAAR) • Society for Animal Protective Legislation • United Action for Animals, Inc. • World Society for the Protection of Animals... Etc etc.....

What is a Pest?...

pest. n
1. An annoying person or thing: a nuisance.
2. An injurious plant or animal, especially one harmful to human beings.

Factors that influence definition...

- Economics
- Health
- Aesthetics
- Human perceptions and values
Crossing the line

Approaches:

Identify damage
Apply control method
Dead pest = Successful control??

Control applied when damage becomes significant:

Population density over time:
- Without control
- 60% population removed

Colonization
Breeding
Mortality
Juvenile recruitment

Goal:

to keep damage to a tolerable level.
Know the damage potential
- Modify habitat to make it less favorable to the pest species
- Monitor for pest species and damage
- Apply appropriate control method to keep pest population and damage low
- Avoid damage = successful program

Control applied prior to damage becoming significant:
- Without control
- 80% population removed

Importance of Scale
- Potential for invasion

Economic Thresholds...

Choosing a control method...
- Species
- Time of year
- Location
- Non-target hazards
- Is it legal?
- Does it work?
**Identification of the Animal**
- Visual
- Signs (e.g., scat, footprints, burrows, damage)

**Understand the Biology and Behavior of the Species**

**Animal Biology**
- Reproductive cues
- Reproductive rates
- Mortality rates

**Animal Behavior**
- Adaptability
- Neophobia
- Territoriality
- Dispersal
- Food preferences

**Location**
- Local laws and regulations
- Visibility of control program
- Private vs public land
- Safety

**Non-target hazards**
Other non-targets...

Is it Legal?
- Colorado Department of Agriculture and Food
- Colorado Extension Service
- Colorado Parks and Wildlife
- US Fish and Wildlife Service

Does it work?
Beware the "environmentally-friendly" label.

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Burrow exploders

Does it work?
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Burrow exploders

PROVEN EFFECTIVE
High-tech sonic sounds repel burrowing rodents in a clean, humane way. The complex, variable frequency sounds are directed through the tube to penetrate the tunnel system. Sounds impact rodents' nervous systems; they cannot adapt, so they leave for good. Independent laboratory and university testing have proven the effectiveness of Bird-X critter control technology.

- TWO TUBES, ONE FLEXIBLE, ONE SOLID, TO FIT ANY SITUATION:
  Flexible tube bends easily to conform to the rodent tunnel.
  Solid tube stays firmly where placed.

- SOLAR PANEL BUILT IN:
  Assists power to prolong battery life up to 8 months.

Burrow exploders

Other non-targets...

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Burrow exploders
Habitat Requirements

- Food
- Water
- Space
- Shelter

- Cultivation
- Weed control
- Irrigation
- "Resistant" plants
- Trap crops

Exclusion
- Burrow Fumigants
- Fertility Control
- Repellents/Scaring
- Cultural Techniques
- Habitat Modification
- Rodenticides
- Traps
- Predators/Disease
- Shooting

Exclusion...
- Local scale
- Broad scale

Repellents...
Products that repel by:
- Smell
- Taste
- Smell and taste

*These & Others: Deer, Racoon, Woodchuck, Squirrels & Others Critters...*
Pest Management Workshop 2013
Mossmer, Outdoor Vertebrates

Scaring...
Must be Saturday night again...

Trapping...
- Live traps vs kill traps
- Disposal
- Public perceptions

Shooting...
- State laws
- Local ordinances
- Effectiveness?

Rodenticides...
- Toxicants:
  - Single feed, Multiple feed
- Application methods:
  - Spot/broadcast, Bait stations

Factors affecting effectiveness...
- Food preferences
- Neophobia
- Bait shyness
Fumigants
- Aluminum phosphide
- Gas Cartridges
- Acrolein (Magnicide H)

Predators...

The last great act of defiance...

Many limitations:
- delivery methods
- high cost
- non-target effects
- poor understanding of ecological effects
Population Monitoring is Essential.....

**Good vertebrate pest management**

- Know the potential problems
- Alter the habitat (if possible) to minimize the damage potential
- Monitor for the pest species and damage
- Take cost-effective action if necessary
- Follow-up evaluation
- Continue monitoring