



DEALING WITH NUISANCE WILDLIFE

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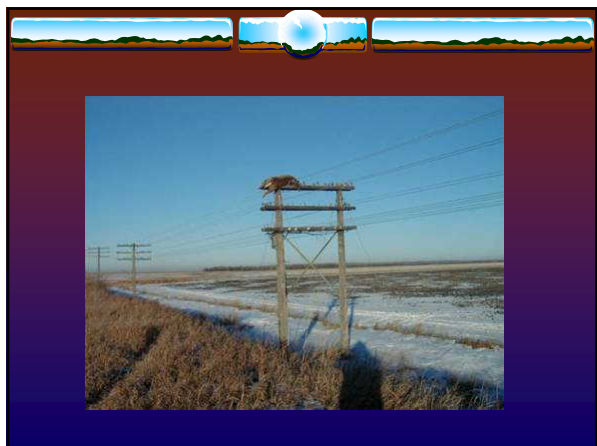
Learning objectives

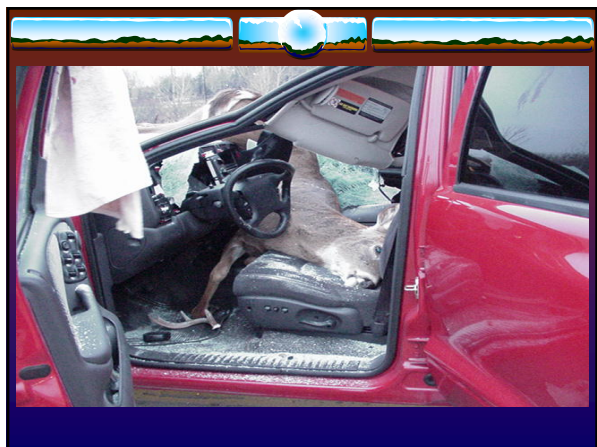
- ❖ Common perceptions and myths related to wildlife control
- ❖ State laws relating to wildlife control
- ❖ Common nuisance wildlife



Learning objectives

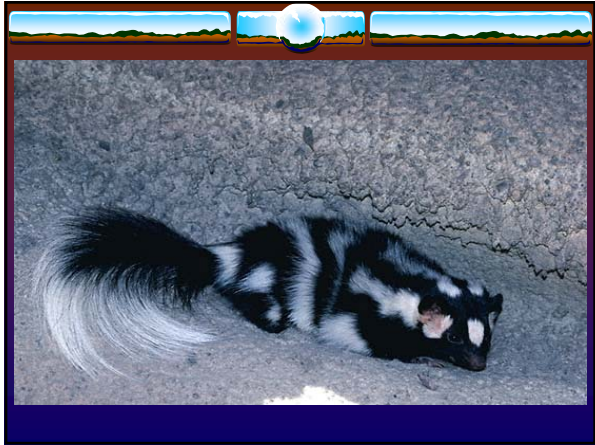
- ❖ Why some animals become nuisance pests
- ❖ Discourage wildlife damage to home, landscape and gardens
- ❖ Basic guidelines for dealing with nuisance wildlife in and around the home and garden

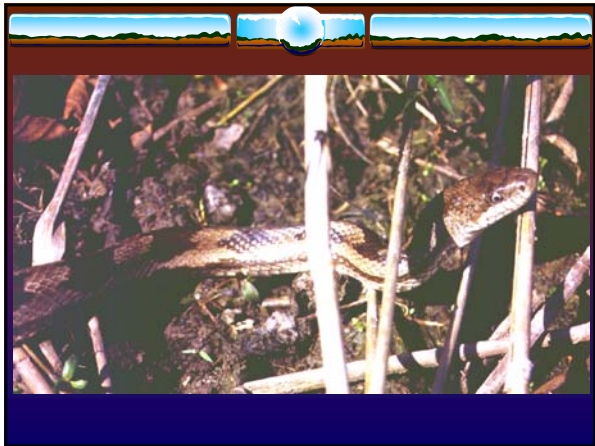















Outline

- ❖ Definitions – Discussion of Problem
- ❖ Role of Government – Legal Issues
- ❖ Decision Model - HERL
- ❖ Review a few species



Wildlife

- ❖ Positive values
 - ❖ Utility – sport, food
 - ❖ Monetary – fur, lease, tourism
 - ❖ Food
 - ❖ Ecological – intrinsic value
 - ❖ Recreational – bird watching, photography



Wildlife

- ❖ Negative values
 - ❖ Crop damage
 - ❖ Damage to buildings
 - ❖ Disease
 - ❖ Vehicle collision
 - ❖ Predation

Wildlife Management

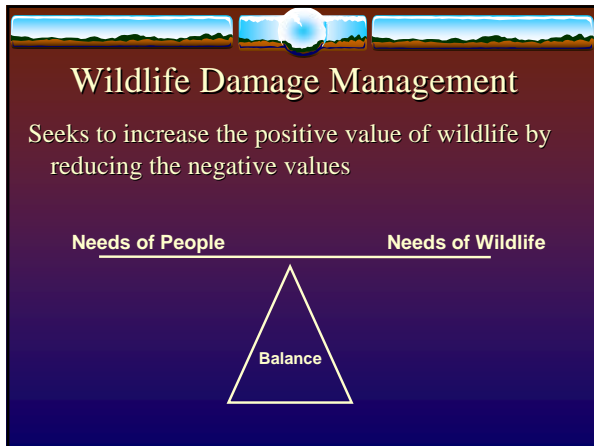
- ❖ Wildlife management – scientific discipline that deals with animals whose movement and behaviors are not controlled by humans.
- ❖ Wildlife damage management – sub-discipline of wildlife management

Wildlife Management

- ❖ Traditional wildlife management has been concerned with increasing game species for hunters
- ❖ Overabundant wildlife are often the result of good game management gone too far
 - ❖ Canada Geese
 - ❖ Deer
 - ❖ Beaver

Nuisance Wildlife

- ❖ Wildlife that occurs in a place where it is unwanted
- ❖ Wildlife that causes damage to valuable plants or structures

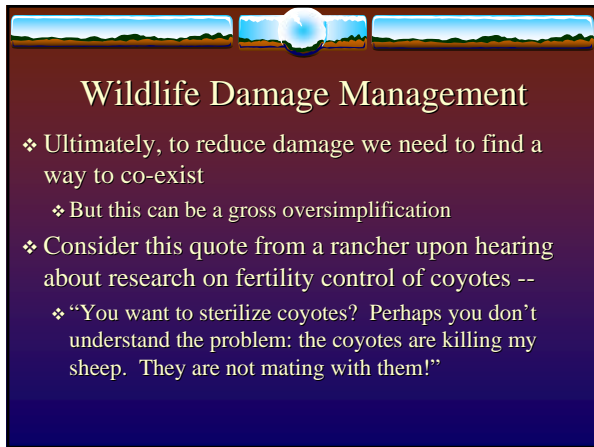


Wildlife Damage Management

Seeks to increase the positive value of wildlife by reducing the negative values

Needs of People Needs of Wildlife

Balance




Wildlife Damage Management

- ❖ Ultimately, to reduce damage we need to find a way to co-exist
 - ❖ But this can be a gross oversimplification
- ❖ Consider this quote from a rancher upon hearing about research on fertility control of coyotes --
 - ❖ “You want to sterilize coyotes? Perhaps you don’t understand the problem: the coyotes are killing my sheep. They are not mating with them!”




Wildlife Damage Management

- ❖ Wildlife damage management has been a part of wildlife management from the beginning
 - ❖ Office of Economic Ornithology
 - ❖ Predator Control – varmints; bounty system
- ❖ Today – overabundant human population is often the problem
 - ❖ Humans encroach on wildlife; move to wildlife habitat; create habitat attractive to wildlife; we need to balance needs of wildlife and humans
 - ❖ Neither one is going to disappear



Role of Government

- ❖ Wildlife is common property “owned” by society.
- ❖ Can not be controlled by one person for their sole benefit.
- ❖ Individuals/corporations own land and can restrict access.




Wildlife Law

- ❖ 27-1-3 – Georgia Code
- ❖ (b) The ownership of, jurisdiction over, and control of all wildlife, as defined in this title, are declared to be in the State of Georgia, in its sovereign capacity, to be controlled, regulated, and disposed of in accordance with this title. Wildlife is held in trust by the state for the benefit of its citizens and shall not be reduced to private ownership except as specifically provided for in this title. All wildlife of the State of Georgia is declared to be within the custody of the department for purposes of management and regulation in accordance with this title. However, the State of Georgia, the department, and the board shall be immune from suit and shall not be liable for any damage to life, person, or property caused directly or indirectly by any wildlife.




Wildlife Law

- ❖ 27-1-28. Georgia Code
- ❖ (a) Except as otherwise provided by law, rule, or regulation, it shall be unlawful to hunt, trap, fish, take, possess, or transport any nongame species of wildlife, except that the following species may be taken by any method except those specifically prohibited by law or regulation:
 - (1) Rats;
 - (2) Mice;
 - (3) Coyotes;
 - (4) Armadillos;
 - (5) Groundhogs;
 - (6) Beaver;
 - (7) Fresh-water turtles;
 - (8) Poisonous snakes;
 - (9) Frogs;
 - (10) Spring lizards;
 - (11) Fiddler crabs;
 - (12) Fresh-water crayfish;
 - (13) Fresh-water mussels; and
 - (14) Nutria.
- (b) The nongame species enumerated in subsection (a) of this Code section may be taken by any method except those specifically prohibited by law or regulation.
- (c) Nothing in this Code section shall be construed to authorize the taking of any species which is protected under the federal Endangered Species Act of 1973, P.L. 93-205, as amended, or under any state law which has as its purpose the protection of endangered or threatened species.



Wildlife Law

- ❖ Birds – All birds (except 3) are federally protected
 - ❖ Migratory Bird Treaty Act
 - ❖ <http://laws.fws.gov/lawsdigest/migtrea.html>
- ❖ Strict liability law
 - ❖ No need to prove “intent”
 - ❖ Enforcement is absolute and not discretionary
- ❖ May not pursue, hunt, take, capture, kill or possess at any time any bird, any part, nest or egg.




WDM - Sources of information

- ❖ Extension Service
 - ❖ Provides advice and technical assistance
 - ❖ Lend traps
 - ❖ Provide printed material
 - ❖ Provide workshops or training




WDM - Sources of information

- ❖ Georgia Department of Natural Resources
- ❖ Wildlife Resources Division
 - ❖ <http://www.georgiawildlife.com/>
 - ❖ Permits Office – Scott Frazier
 - ❖ 770-761-3044
 - ❖ Social Circle, GA




WDM - Sources of information

- ❖ USDA APHIS WS – 706-546-2020
 - ❖ Technical Advice – instruction; printed material; rent/loan traps or other devices
 - ❖ Operation Control – contract for their biologists to conduct management operations; \$\$\$
- ❖ USDA National Wildlife Research Center
 - ❖ Ft. Collins, CO
 - ❖ <http://www.aphis.usda.gov/ws/nwrc/>



WDM - Sources of information

- ❖ Nuisance Wildlife Control Operators (NWCO)
 - ❖ Pronounced – “new · co”
 - ❖ NOT termite control or county “dog catcher” (Animal Control Officer)
 - ❖ For profit business



Rules of Thumb

- ❖ RULE #1
 - ❖ When dealing with wild animals there are no rules
- ❖ RULE #2
 - ❖ Animals can't read
- ❖ RULE #3
 - ❖ There is no 'magic powder' or 'magic bullet' or magic. Just hard work and perseverance.
- ❖ RULE #4
 - ❖ If it sounds too good to be true --- IT IS!

Rules of Thumb

- ❖ Wildlife need
 - ❖ FOOD WATER SHELTER
- ❖ Remove any one of these and offending animal will go somewhere else.
- ❖ RULE #5
 - ❖ **TREAT THE PROBLEM – NOT THE SYMPTOM**

Example No. 1




Photo Courtesy of The Wildlife Services Image Collection <http://images.fws.gov/>

Example No. 2


Example 2: Moles digging up your yard

Wrong answer: Trap the mole. Kills one mole

Right Answer:


- Treat yard for grubs
- Trap mole
- Reduce watering

- Learn the biology of the animal; moles eat insects and earthworms
- Solution may require several weeks of effort!




Animal Sign

- ❖ To diagnose problem – look for sign
 - ❖ Droppings
 - ❖ Fresh ones are black, shiny and moist
 - ❖ Old ones are dry, brown, gray
 - ❖ Black and white
 - ❖ Size matters
 - ❖ Rats, mice, toads, chipmunk
 - ❖ Rabbit
 - ❖ Deer



Animal Sign

- ❖ Digging
 - ❖ Dirt mound present
 - ❖ Woodchuck, turtle, armadillo, coyote, dog
 - ❖ No dirt mound
 - ❖ Chipmunk, skunk, mole, vole
 - ❖ Tunnels near surface
 - ❖ Mole, Vole



Apple Test

- ❖ Moles eat insects, grubs, earthworms
- ❖ Voles eat plants, tubers, bark, roots, bulbs.
- ❖ Apple Test
 - ❖ Piece of apple in tunnel
 - ❖ Wait
 - ❖ If apple is eaten – VOLE
 - ❖ If apple not eaten - MOLE


MOLE

- ❖ Dark brown – black
- ❖ Naked snout
- ❖ Broad feet
- ❖ Large claws
- ❖ Nearly invisible eyes/ears



VOLE

- ❖ Rich brown
- ❖ Mouse-like feet
- ❖ Tail $\frac{3}{4}$ to 1 $\frac{1}{2}$ inches
- ❖ Ears very small
- ❖ Eyes visible
- ❖ Furry nose




Animal Sign

- ❖ Gnawing
 - ❖ Deer lack upper incisor
 - ❖ Plants have ragged end
 - ❖ Plants clipped clean
 - ❖ Vole, chipmunk, squirrel, beaver, rabbit, woodrat
 - ❖ Branches are cut
 - ❖ Squirrel, rabbit
- ❖ Height
 - ❖ 4 $\frac{1}{2}$ to 6 feet – deer; rabbits, woodchuck ~ 1 foot
 - ❖ Close to ground - vole




Animal Sign

- ❖ Noise
 - ❖ Inside wall – mice
 - ❖ Attic or crawl space – mice, bats, squirrels, raccoons, skunk, opossum, birds
 - ❖ Chimney – squirrel, raccoon, birds, bats
 - ❖ Attic noise at night – mice, bats, flying squirrel
 - ❖ Attic noise during day – gray squirrel



Animal Sign

- ❖ Time of Day
 - ❖ Nocturnal (night active)
 - ❖ Woodrat, raccoon, skunk, opossum, deer
 - ❖ Causes holes, gnawing to appear overnight
 - ❖ Diurnal (day active)
 - ❖ Squirrel, chipmunk, woodchuck, crow,
 - ❖ Either
 - ❖ Dog, cat, armadillo



CITIZEN OPTIONS FOR NUISANCE WILDLIFE ISSUES

ACTION MODEL

❖ **H-E-R-L**

- ❖ H – Habitat Modification
- ❖ E – Exclusion
- ❖ R – Removal or Repellent
- ❖ L – Lethal Control

H – Habitat Modification



Habitat Modification

- ❖ Activities to make habitat unattractive are opposite actions taken to create backyard habitat.
- ❖ Difficult or impossible to create habitat for some species and remove habitat to discourage wildlife.
 - ❖ They can't read; they can't tell the difference!
- ❖ Wildlife needs habitat
 - ❖ NO COVER = NO MICE = NO SNAKES
 - ❖ NO COVER = NO BIRDS!




Habitat Modification – Homeowner remedies

- ❖ Mow tall grass
 - ❖ Pest species like mice prefer weedy areas; this attracts predators like snakes, hawks, owls
- ❖ Remove piles
 - ❖ Brush piles
 - ❖ Log piles
 - ❖ Firewood piles
 - ❖ Rock piles
 - ❖ Debris and Trash – bricks, stone, concrete, buckets, cars, toys, tires.





Habitat Modification – Homeowner remedies

- ❖ Spray Herbicide
 - ❖ Remove tall weeds, briars, vines
 - ❖ Roundup®, Spectricide®, Weed-B-Gone®
 - ❖ Follow label restrictions
- ❖ Cut dead limbs and trees
 - ❖ Eliminates roosting places for bats, flying squirrels, woodpeckers
 - ❖ Removes food for woodpeckers




E – Exclusion






Exclusion – Homeowner remedies

- ❖ Use fencing or other solid material to create physical barrier
- ❖ Large animals
 - ❖ Hog wire – 2” x 4” mesh; 48” – 60” tall
 - ❖ Eight to ten feet tall for deer
 - ❖ Chain link
 - ❖ Stake to ground



Exclusion – Homeowner remedies

- ❖ Small animals
 - ❖ Bury to discourage burrowers
 - ❖ Use chicken wire, hardware cloth or electric fence
 - ❖ Chicken wire – 2’ tall; bury 6-12” for rabbits, skunks, opossums, armadillos
 - ❖ Hardware cloth – ¼” to ½” mesh; bury for chipmunks, voles, moles
 - ❖ Electric fence – hot wire; battery or solar; peanut butter to attract and deliver mild shock



Exclusion – Homeowner remedies

- ❖ Chimney
 - ❖ Capped to exclude raccoons, bats, squirrels, birds
- ❖ Soffit vents
 - ❖ Good repair; entry for insects, bats, flying squirrels
- ❖ Gable
 - ❖ Good repair; hardware cloth; entry for bats, flying squirrels, many birds

Exclusion – Homeowner remedies


- ❖ Windows/doors
 - ❖ Close, seal, repair screens
- ❖ Dryer vents
 - ❖ Screen
 - ❖ CAUTION – clean lint regularly to prevent fire
 - ❖ Seal around opening with expanding foam
- ❖ Pipes, wire, cable
 - ❖ Seal around opening with expanding foam
 - ❖ Snakes, mice can enter through dime size opening

R – Removal or Repellent





Removal or Repellent

- ❖ Removal – trap offending animal and move ½ to 5 miles away.
 - ❖ Permission
 - ❖ Safety of trapper
 - ❖ Disease
 - ❖ Legality?
- ❖ Addresses symptom – does not solve problem




Removal or Repellent

- ❖ Better to solve problem using a humane but lethal trap.
- ❖ If choosing live trapping several traps are available
 - ❖ Hav-A-Hart
 - ❖ Tomahawk
 - ❖ Glue boards – release technique
 - ❖ Box traps



Removal or Repellent

- ❖ **DO NOT HANDLE OR CAPTURE SNAKES** unless you can positively identify the animal
- ❖ Place a bucket over the animal and slide cardboard under bucket; turn over and secure for transport
- ❖ Net for frogs, birds, small animals from garden ponds




Removal or Repellent

- ❖ **REPELLENTS**
 - ❖ “If it sounds too good to be true, IT IS!”
- ❖ Snakes can’t smell – sulphur powder, moth balls, garlic does not work
 - ❖ Snakes do “taste” the air with their tongue and some products may not “taste” good so snake avoids the area
 - ❖ Snakes can’t hear – sonic repellents are useless




Removal or Repellent

- ❖ Effective repellents work with fear, taste, odor
 - ❖ Taste repellents render a plant unpalatable
 - ❖ Fear stimuli elicit instinctual response
 - ❖ Odor repellents smell bad
- ❖ Many repellents work in some situation and not other; may work for short term; may work sometimes and not others
- ❖ Fertilized plants or young plants are damaged more



Removal or Repellent

- ❖ FEAR
 - ❖ Plantskydd® - tree seedlings; reapply frequently
 - ❖ Hinder® - edible fruit/veggies; water soluble; cheap
 - ❖ BGR® - egg solids; do not use on food crops
- ❖ These products mimic the smell of a predator and are reported to scare the animal.



Removal or Repellent

- ❖ TASTE
 - ❖ Ropel® - systemic; do not use on edible crops
 - ❖ Deer Stopper® - egg and oils; do not use on edible crops
 - ❖ This-1-Works-Bitrix®; woody plants; weather resistant
 - ❖ Goose Chase – derivative of Concord grapes; water soluble

Removal or Repellent

❖ **ODOR**

- ❖ Deer-Off® - use on food crops; insoluble
- ❖ Milorganite® - processed sewage sludge; mild fertilizer; very promising; inexpensive
- ❖ Numbers in this table show the % of plants eaten by deer

DAY	0	4	7	10	13	17
Control	18	49	58	92	96	98
Treatment	0	1	1	1	1	2

Removal or Repellent


❖ **BARRIER**

- ❖ Nix-A-Lite – metal spikes to deter perching pigeons
- ❖ Bird Netting – fine mesh to protect berries, shrubs
- ❖ Bird Repellent – sticky, non-toxic to repel birds
- ❖ Electric fence – solar, portable, Hot-Tape

Removal or Repellent

❖ **OTHER**

- ❖ Tactile – water spray →
- ❖ Light – motion activated; strobe and lasers
- ❖ Scare – eye balloon; Mylar tape; silhouette on window; pyrotechnics



L – Lethal Control

A photograph showing a person in a field, possibly a farmer or worker, standing next to a large log. The field appears to be a mix of dry grass and some green vegetation, suggesting a rural or agricultural setting.

Lethal Control

- ❖ “Last step”
- ❖ Be realistic


Lethal Control

- ❖ If lethal control is indicated or is the last resort, then...
- ❖ Remember, trapping is NOT recommended for homeowners due to danger of being bitten, exposure to disease (rabies), injury to animal or non-target species
- ❖ Species like raccoons, cats, coyotes, dogs, snakes
 - ❖ Contract with a licensed NWCO
- ❖ For mice, chipmunks, rabbits, moles, voles




Lethal Control

- ❖ Trap placement
 - ❖ Place near burrow entrance
 - ❖ Face into opening
 - ❖ Cover the trap with a box
 - ❖ Protect from children and pets

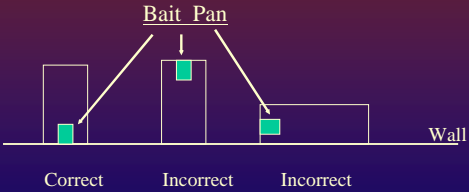


Lethal Control

- ❖ Bait
 - ❖ Use simple bait or natural foods
 - ❖ No acorns for squirrels in autumn
 - ❖ Peanut butter, sliced apples, sardines, PB/oatmeal balls, pecans, banana slices.
- ❖ Mouse and Rat Traps
 - ❖ PB (better than cheese)
 - ❖ Place perpendicular to the wall




Mice travel along the wall – use this behavior to improve trap success.



Bait Pan


Wall

Correct Incorrect Incorrect



Lethal Control

- ❖ Multi-catch traps for mice, pigeons
- ❖ Place mouse traps in shoe box with 2 holes cut in it
 - mice prefer to move in dark spaces
- ❖ Caution: Use of Poison Baits
 - ❖ Children, pets; Do Not Use near children or pets
 - ❖ Poisoned animals may die behind a wall or in other inaccessible space and stink.
 - ❖ Use only outside the home.



Resources

- ❖ <http://www.ces.uga.edu>
- ❖ <http://wildlifedamage.unl.edu>
- ❖ Other State Extension web pages
 - ❖ NC State <http://www.ces.ncsu.edu/nreos/wild/wildlife/>
 - ❖ Cornell <http://www.dnr.cornell.edu/ext/wildlifedamage/>




Resources

- ❖ Adler, B. 1992. *Outwitting Critters: A Humane Guide for Confronting Devious Animals and Winning*. The Lyons Press. New York.
- ❖ California Center for Wildlife. 1994. *Living With Wildlife*. Sierra Club Books, San Francisco.
- ❖ Harrison, K. and G. Harrison. 1985. *America's Favorite Backyard Wildlife*. Simon and Schuster, Inc., New York.
- ❖ Humane Society of the United States. 1997. *Wild Neighbors: The Humane Approach to Living with Wildlife*. Fulcrum Publishing, Golden, Colorado.
- ❖ Logsdon, G. 1999. *Wildlife in the Garden*. Indiana University Press, Bloomington, IN.
- ❖ *Prevention and Control of Wildlife Damage*. 1994. Third Edition. Cooperative Extension Service, University of Nebraska. Lincoln, Nebraska




Species Recommendations




Squirrels

- ❖ May damage forest or landscape trees by chewing bark or cutting branches
- ❖ May damage pecan orchards and nut crop
- ❖ May enter house and nest in attics
- ❖ Eat from bird feeder
- ❖ Live trap and relocate
- ❖ Predator guard; slick pole; cut back branches




Squirrels

- ❖ Exclusion
 - ❖ 18-24 inch metal collar around poles and trees
 - ❖ Trim trees to prevent access to roof
 - ❖ Wires – install 2-foot sections of lightweight pipe
 - ❖ Close openings with heavy ½ inch hardware cloth




Squirrels

- ❖ Repellents – Thiram painted on trees
- ❖ Toxicants – Zinc phosphide 5% tracking gel (**RUP**)
- ❖ Fumigants – None registered
- ❖ Traps – Leg hold, box, cage, conibear
- ❖ Shooting – where legal; BB or .22-cal w/ rat shot
- ❖ Squirrels cycle – efforts in some years with high density may prove futile




Chipmunks

- ❖ Burrow under walls, driveway, sidewalk
- ❖ Clog downspouts
- ❖ Dig flower beds
- ❖ Eat bulbs, tubers, bird seed, nuts, cat/dog food




Chipmunks

- ❖ Exclusion
 - ❖ ¼ inch hardware cloth around (and buried) gardens and flower beds
 - ❖ Cover down spouts
- ❖ Habitat modification
 - ❖ Wood piles, mulch, plants located away from structures



Chipmunks

- ❖ Repellents
 - ❖ Taste – Thiram, Bitrex, ammonium soaps of higher fatty acids
 - ❖ Naphthalene – 4-5 lbs/2000 sq. ft.; cabins-unoccupied
- ❖ Toxicants – none registered
- ❖ Fumigants – not practical
- ❖ Trapping – rat traps, cage traps (Tomahawk)
- ❖ Shooting – BB gun, .22-cal with rat shot



Moles

- ❖ Exclusion
 - ❖ not practical except garden; bury 1/4" mesh hardware cloth
 - ❖ reduce soil moisture and use insecticide to kill grubs
- ❖ Frightening – not effective
- ❖ Repellents – none registered
- ❖ Toxicants – Strychnine alkaloid
- ❖ Shooting – not practical



Moles

<http://www.deerbusters.com/>





- Poison Bait with multiple applications
- Controls Eastern, Southern and Hairy moles
- Toxic to earth burrowing animals
- Use on lawns, golf courses and other well-landed green areas
- Treats up to 10,000 sq. ft.

KEEP OFF GRASS
CAUTION
See Moletox I.P.C. II



Summary



Questions?
