Wildlife Damage Management Around the Home & Garden

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Regional Agent - Natural Resources

Introduction

- General goal: maximize the value, enjoyment, and safety of the home/garden
  - Depends on personal preference
    - Aesthetics
    - Food production
    - Recreation
    - Safety
- Wildlife can BOTH positively and negatively affect these goals

We Manage Wildlife to Increase Its Value

- Positive values of wildlife (tangible):
  - Physical utility
    - Food, clothing, survival, pest mgt.
  - Monetary
    - Harvesting, renting land, pest mgt.
  - Recreational
    - Bird watching, hunting, etc.

What is wildlife damage?

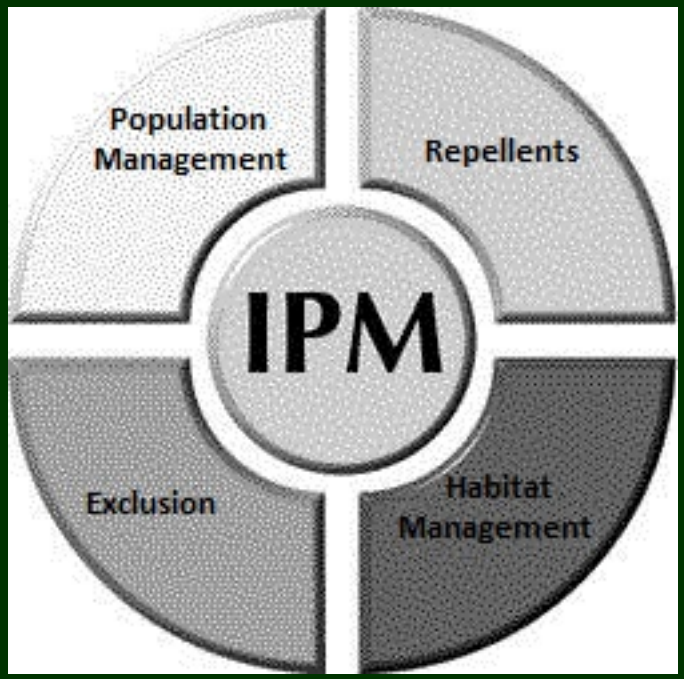
- When people & wildlife “butt heads”
  - When wildlife negatively effects someone’s quality of life

- Wildlife Damage Management (WDM)
  - The science and practice of increasing the value of wildlife resources by decreasing the negative values of wildlife

Five Components of a WDM Program

1. Prevention
2. Define the problem
3. Life history/ecology of problem species
4. Application of control methods (IPM)
5. Evaluation of control

Integrated Pest Management



Often the key to successful WDM programs

Prevention – Home & Garden

- Basic variables to consider: the necessities
  - Food
    - Other available sources
      - Distraction crops
      - Landscaping plant palatability
  - Water
    - Nearby water sources = wildlife
  - Shelter
    - Proximity to favorable wildlife habitat
      - woods, fallow fields, swamps, and water bodies
      - Landscaping materials (rock piles, timbers, etc.)
      - Open structures, failed materials
    - Garden shape & size
      - More edge, smaller size = more damage/impact

Food

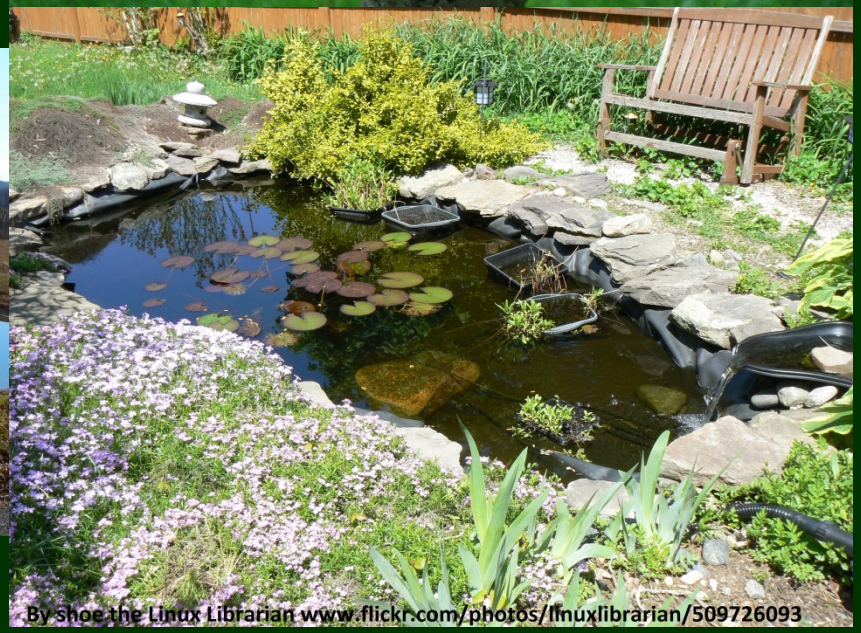
– target species, seasonal availability, natural vs. artificial

Water

- location, depth, aquatic plants


By Chris Canipe http://www.flickr.com/photos/chris_canipe/4589651133


By Cindy Seigle www.flickr.com/photos/57038667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Shelter

- Nesting, resting, hiding and predator protection

- Corridors - travel and safety

IPM - Managing Habitat

- Habitat management deters multiple species
- Remove or reduce:
  - den trees & snags
  - edge vegetation
  - overhead cover
  - rock & brush piles
  - forest fragmentation (reduces edge & corridors/travel routes for wildlife)
- Increasing space between woods and field edges (reduces security for many species)

IPM - Exclusion

- Exclusion methods can deter multiple species
- Fencing & Netting
  - Permanent or temporary
  - Can be disassembled to help access fields
  - Mobile: move between most vulnerable sites
  - Conducted on Fine scale (base of trees, at edges, on ripened crops, etc.)
  - Can be very effective but costly

  - Electrical fencing can be a very effective for deer, bear, hogs, and raccoons

Electric Fencing

- 3-4 strand, 4 ft. Braided wire can reduce most mammal damage (8’ for deer)
- Flagging increases visibility and avoidance
- Foil & peanut butter shorten learning curve
- Solar units allows for electric fencing almost anywhere

Electric Fencing Cost Analysis

Fence Type	Deer Pressure	Labor and Material Cost per Foot	Material Cost per Foot
8' woven wire	High	$5 to $7	$2 to $4
7.5' plastic mesh	High	$1 to $1.50	$0.65
Slanted 7-wire	High	$1.75 to $2.25	$1.50 to $2
Vertical 7-wire	Moderate-high	$1.50 to $2	$0.75 to $1.50
Spider Fence 5-wire	Moderate-high	$0.70 to $0.80	$0.35 to $0.40
Peanut butter	Low-moderate	$0.30	$0.10
2-strand polywire	Low-moderate	$0.35	$0.18

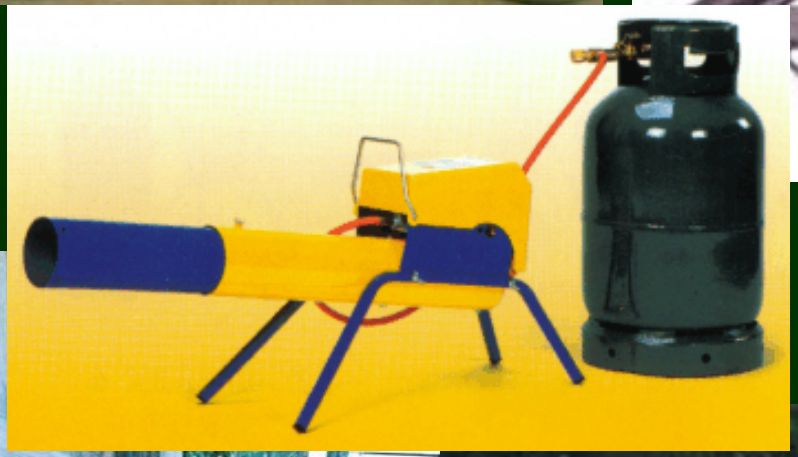
IPM – Harassment & Repellents: Auditory, Visual, Olfactory

- Harassment effective during peak windows
- Some methods require your presence and time but remote harassment devices available
- Effective for birds, where most management methods are not as effective or legal
- Wildlife can become acclimated noise making devices
- Combining noise, light, & motion deterrents can be more effective


The Bird-B-Gone
Hawk
"The Natural Predator of Birds & Rodents!"


100% PURE
RED FOX URINE
COYOTE URINE
WILDCAT URINE


Bird Buster




OBI

Keys to Harassment

- **Key to harassment is effort & dedication**
- One time is rarely effective
- Consider noise impacts on neighbors
- Must move noise & visual devices to increase effectiveness
- Combine with other management methods (IPM)
  - Lethal control
  - Multiple harassment methods
  - exclusion

Population Management

- Effective method to control most mammals
  - Hunting
  - Trapping
  - Shooting
  - Toxicants
- Most damage caused by animals that live close to or on the property
- Removing problem individuals can have significant results
- Limited utility for avian issues (#’s & legality)


VINEYARD 3
DANGER PELIGRO
PESTICIDES PESTICIDAS
KEEP OUT
NO ENTRE

Population Management: Mammals

- Use hunters/trappers to your advantage
- Target problem species or individuals
  - Make sure sportsmen are helping…
  - i.e. doe for population control, bucks for rubbing
  - Trapping for fox when you have a coon problem
- Use species specific trap types & sets
- Management during specific seasons can solve problems during other times of the year

Population Management: Birds

- Numerous trap types, very species specific
  - crow, starling, & pigeon
- Traps for individuals or larger groups
- Seasonal effectiveness
- Contact a professional for specifics on trapping

Chemical Applications: Mammals

- Fumigating Burrows
  - CO_2 Gas cartridge applications
    - widely available, no permit required
    - The burrows need to be covered, animals asphyxiate
  - Aluminum Phosphide
    - Restricted use pesticide, applicators license required
    - Major threat to human health **Poisoning**
    - Pellets inserted into burrows, animals are poisoned
    - The burrows need to be covered
    - Requires moisture levels to be right to release gas

Chemical Applications: Mammals

- **Numerous toxicants for rodents can be used**
  - **Many formulations, active ingredients, and delivery methods**
  - **Species identification is key**
  - **Non-targets are a MAJOR consideration**

Contact a rodent control specialist or USDA Wildlife Services

Chemical Application: Birds

- Limited chemical options for nuisance bird control
- Methyl Anthranilate – bird nerve irritant
  - Natural compound in grape flavoring
  - Fogged or sprayed - causes dispersal and avoidance, does not affect other wildlife
  - Deteriorates 2-4 weeks (repeated application required)
  - Numerous commercially available forms
- DRC -1339: Restricted Use Pesticide
  - Selective broadcast poison (starlings, pigeons, crows)
  - Ensuring good bait acceptance key to bird control

Contact USDA-Wildlife Services for more info

Permits for Lethal Control

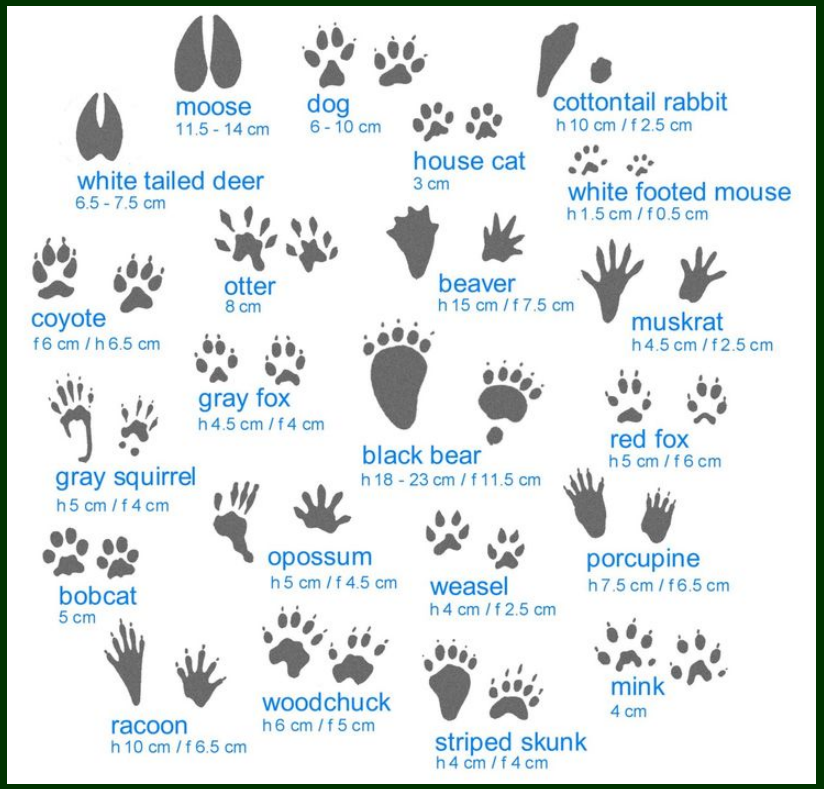
- Depredation permits
  - Available for almost any species except eagles & endangered species
  - Important to know problem species
  - Issued by USFWS and State Wildlife Agency
  - USDA-Wildlife Services provides recommendations on take and methods
  - $100 Annual renewable permit
  - USDA-Wildlife Services starts the process
  - Migratory bird application: http://www.fws.gov/forms/3-200-13.pdf

Bonus Method – Biological Control

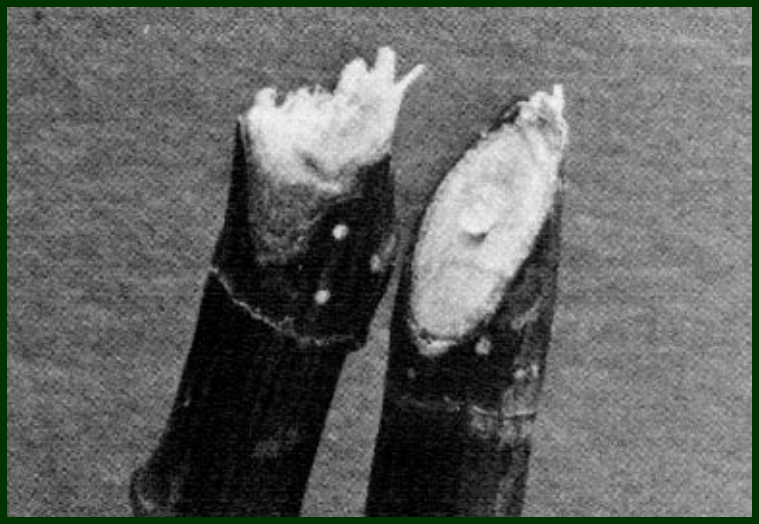
- Predators can be beneficial
  - Raptors
    - can be attracted with nest boxes (kestrels) and perch devices (hawks, owls, kestrels)
    - CHEAP long term help with control
  - Mammal predators (foxes)
    - Naturally use orchards and rasily managed with select removal
    - Dogs enhance harassment methods and are GREAT for guarding at sensitive times of the year

Identify the Damage

- Direct observation is best but we are often only left with the evidence :
  - Tracks, scat, damaged crop



Define the Problem: Identify the Damage



Check Legalities

The majority of wildlife is protected

U.S. Fish and Wildlife Service

USDA - APHIS Wildlife Services

ADCNR Wildlife and Freshwater Fisheries

ADCNR District 1: 256-353-2634

Alabama Cooperative Extension System

Target the Offending Animal

Target the Offending Animal

American Crow
Corvus brachyrhynchos

Crow damage is identified by the characteristic beak indention marks (➨) and the lack of gnaw marks. Rarely is the whole pecan meat removed by a bird, but ants often clean out any remaining meat. Birds are not major depredators until after shuck split. Crows prefer large cultivar nuts, if available, to natives.

Eastern Fox Squirrel
Sciurus niger

Fox squirrels produce a jagged, chipped entrance hole with few gnaw marks, usually with less than half of the shell remaining intact. In southern Oklahoma, the peak of fox squirrel damage occurs in September during the "dough" stage of pecan development just prior to shuck split.

Learn the Life History of the Species

Reproduction

Migration patterns

Home Range

Tools of the Trade

When trapping…

…be CAREFUL!!!

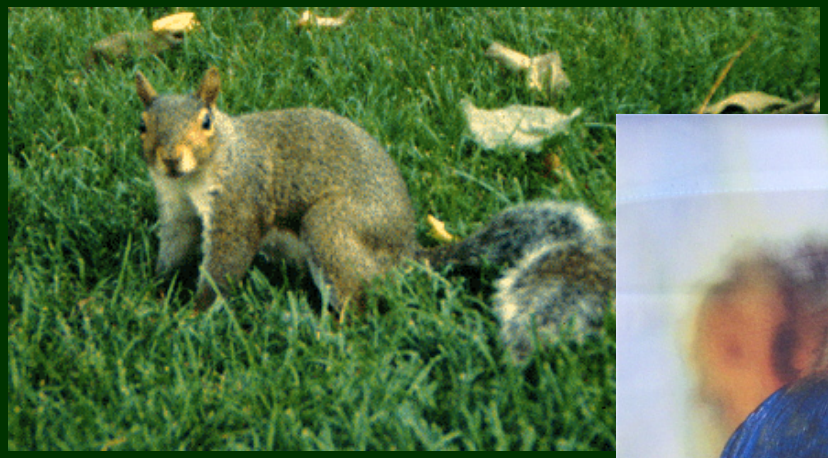
Evaluate Control

- Has the damage stopped or reduced to an acceptable level?
  - If so, begin and maintain prevention
  - I not, consider IPM model & increase control measures and incorporate others
    - Re-evaluate

Frequent Home & Garden Guests

Welcome additions or nuisance?

Squirrels



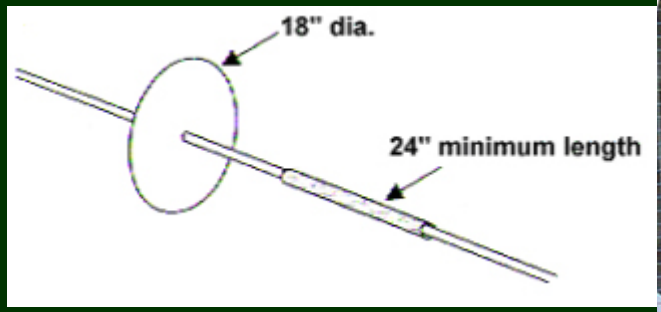

Feed
the Birds.

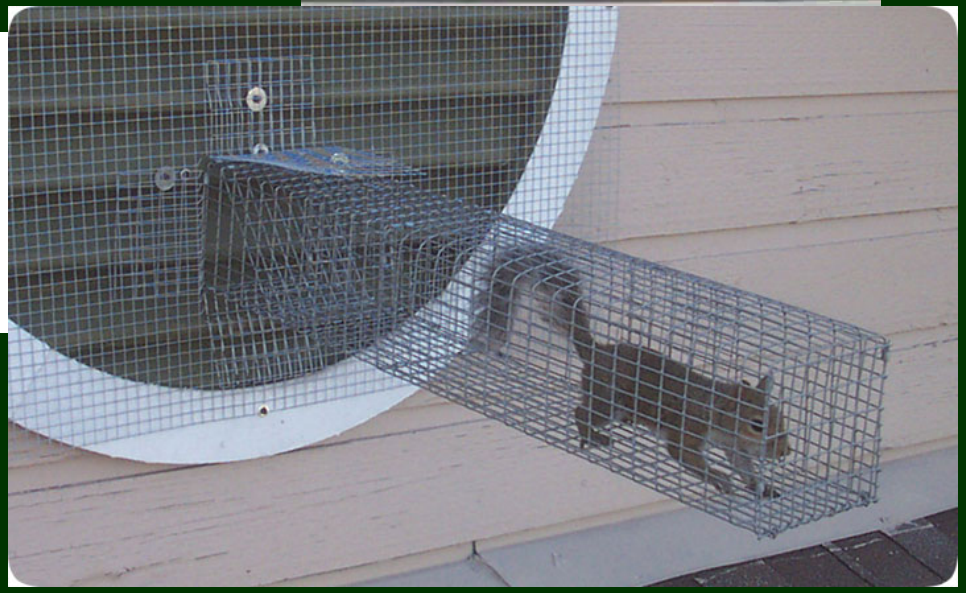

Not ripe yet
This one
is ready
to eat
Immature
fruit
Not ripe
yet



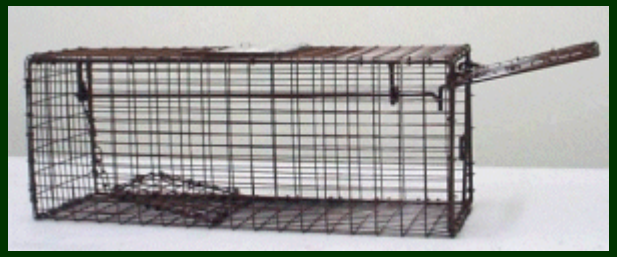



Squirrel Control





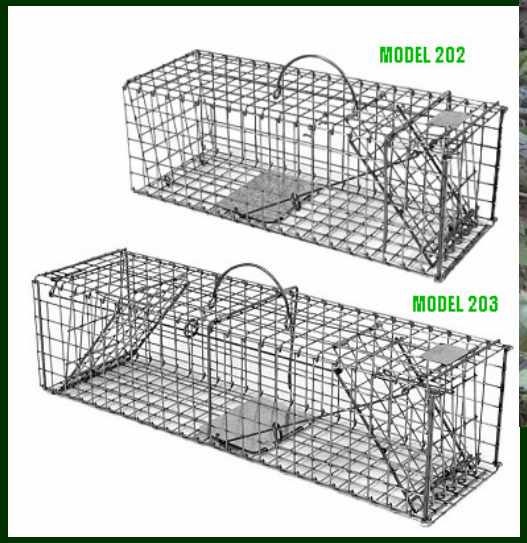
Chipmunks

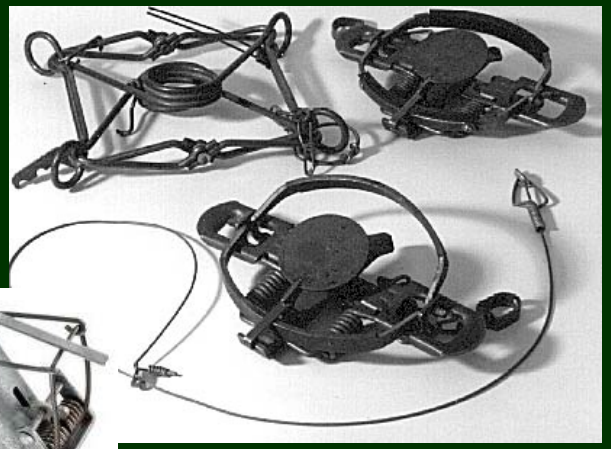


Raccoons & Opossums

Raccoons & Opossums

- Control
  - Trapping
    - No. 160 Conibear, No. 1 or 1.5 Leghold
    - Live traps baited with corn, sardines, or cat/dog food
    - DP Coon Trap baited with a marsh mellow





Rabbits

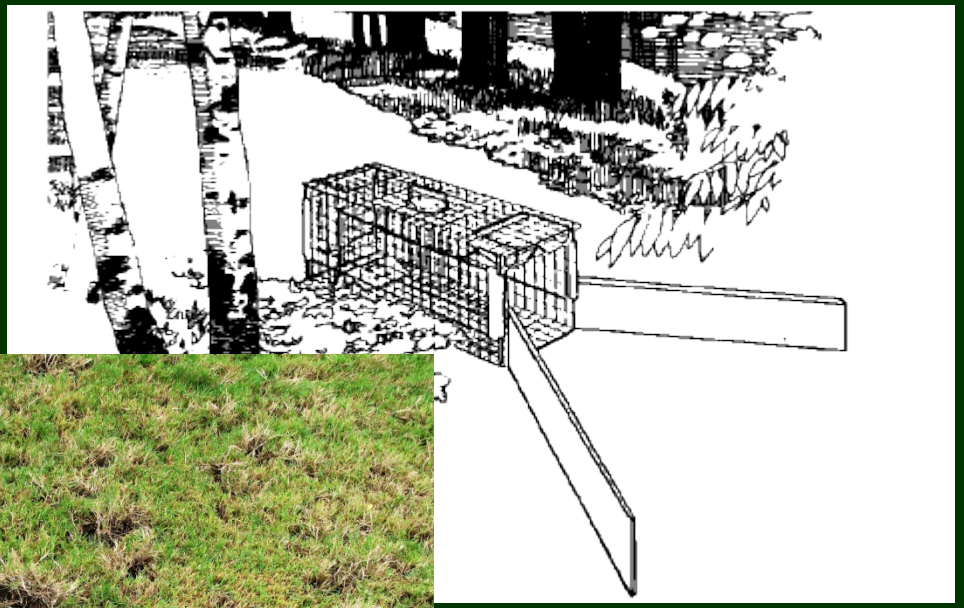

05.20.2005

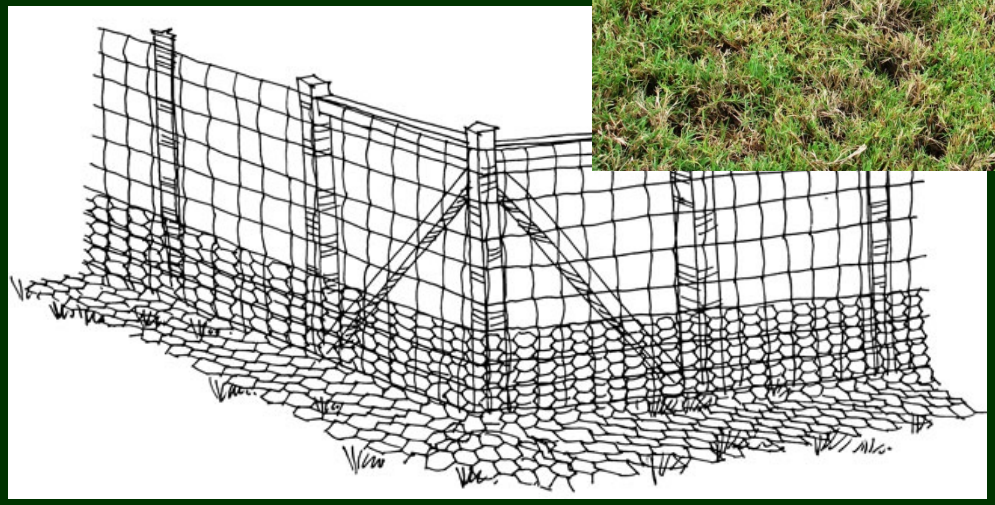
Groundhogs

Also known as gophers…

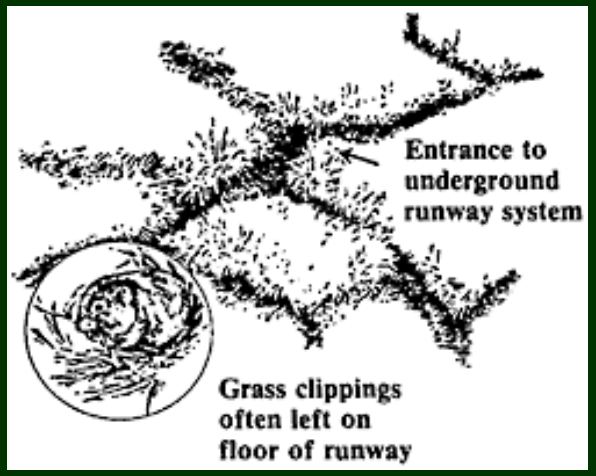
Groundhogs

Armadillo





Voles / Orchard Mice

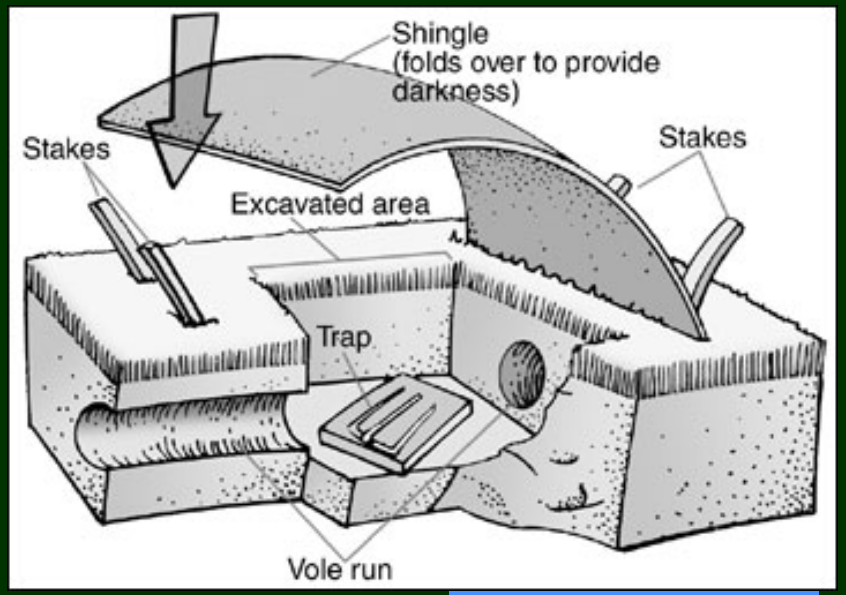


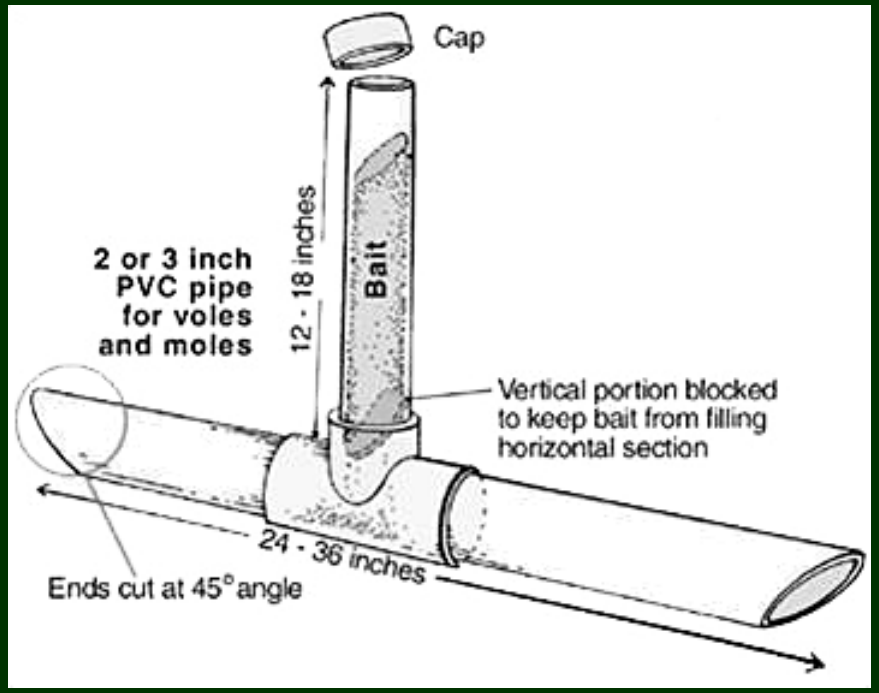
Trapping & zinc phosphide poisoning

Monitor with Apple sign test

A mowed orchard with a clean herbicide strip will have lower mouse populations than a grassy or weedy orchard.

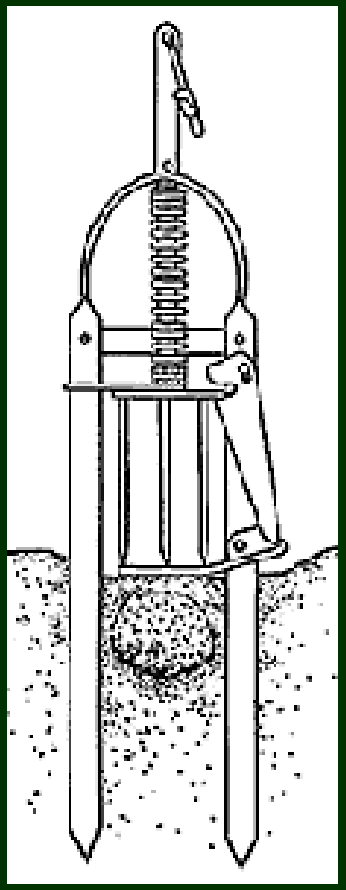
Eliminate as many areas of rodent refuge as possible vegetation cover, weeds around buildings, vacant areas, and drive rows.

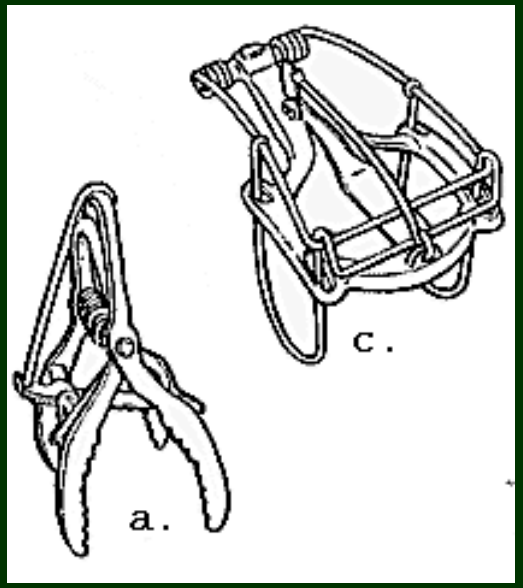



Cap
2 or 3 inch
PVC pipe
for voles
and moles
12 - 18 inches
Bait
Vertical portion blocked
to keep bait from filling
horizontal section
24 - 36 inches
Ends cut at 45° angle

Moles


Photo by V. Jedlicka

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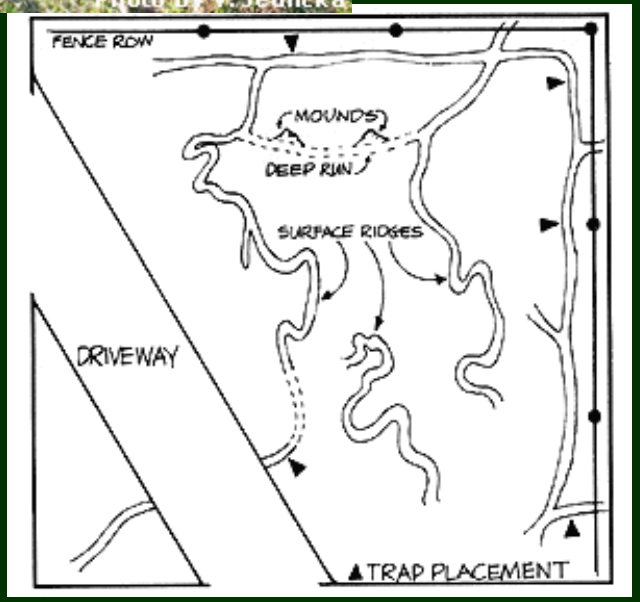
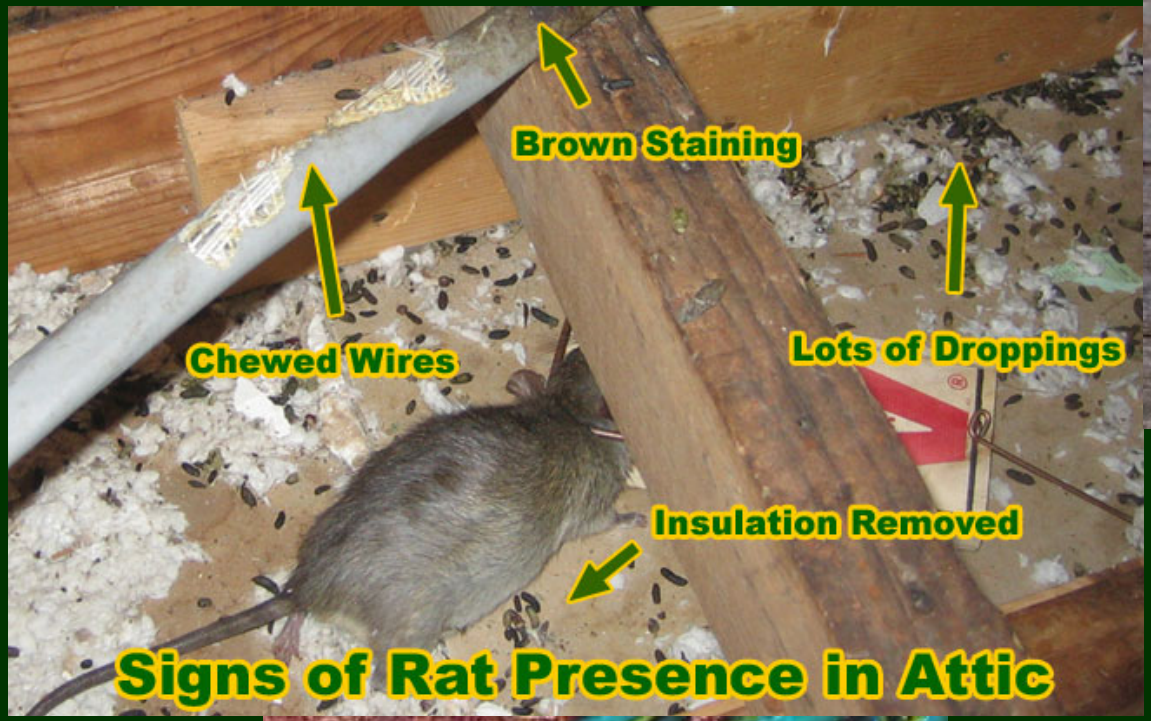

FENCE ROW
MOUNDS
DEEP RUN
SURFACE RIDGES
DRIVEWAY
TRAP PLACEMENT

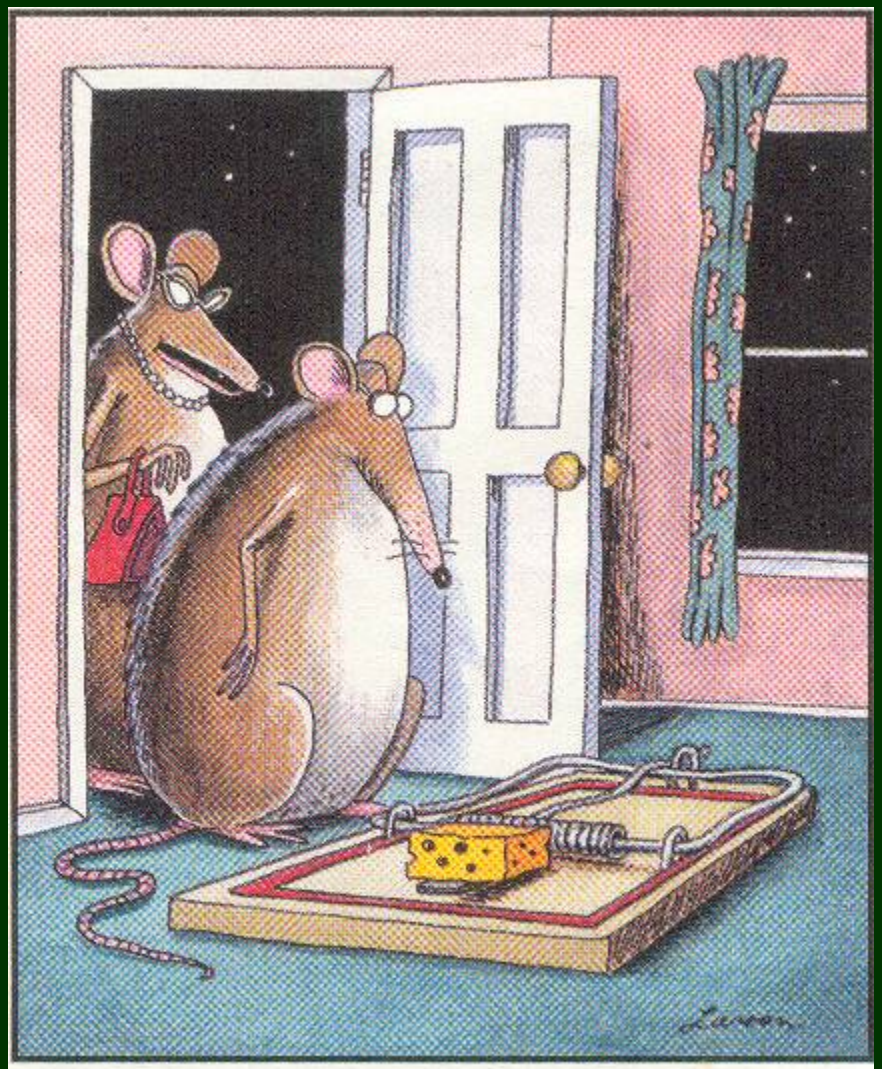
Commensal Rodents


Brown Staining
Chewed Wires
Lots of Droppings
Insulation Removed
Signs of Rat Presence in Attic

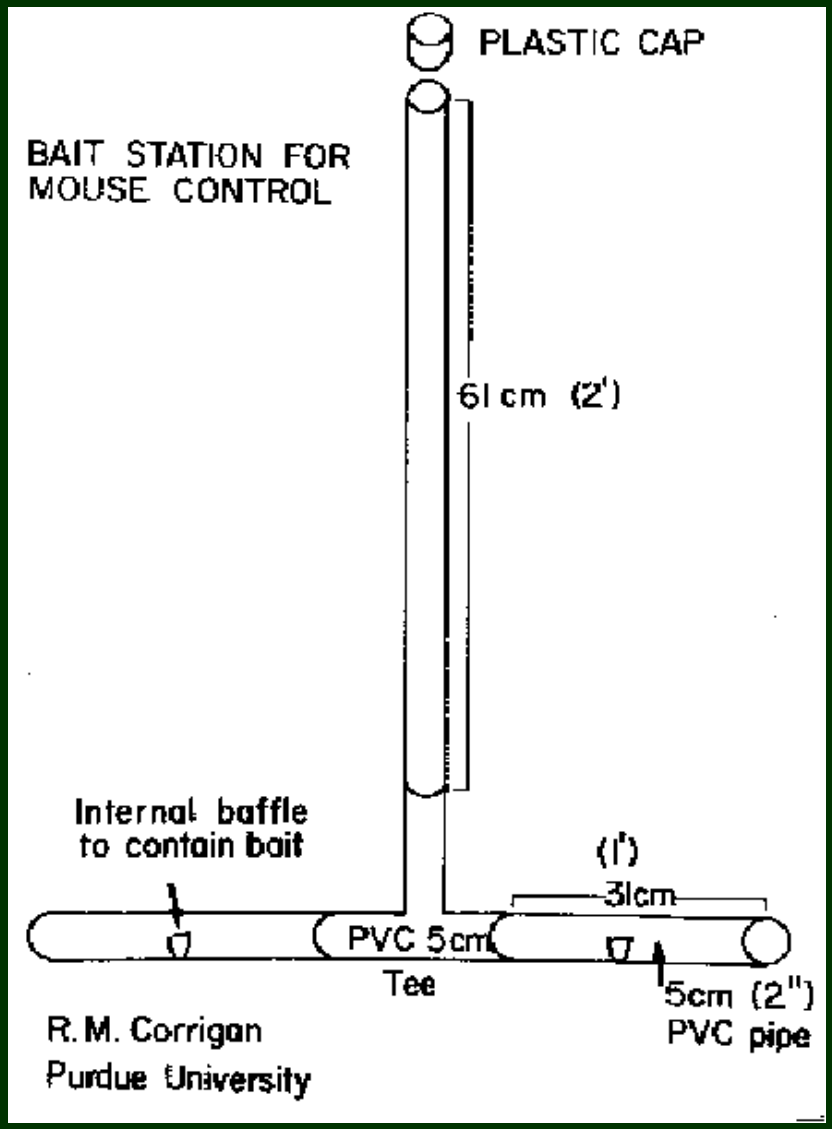

© CSIRO Rodent Research Group

Rodent Control

- Exclusion
- Sanitation
- Population reduction



"Well, heaven knows what it is or where it came from—just get rid of it. But save that cheese first."

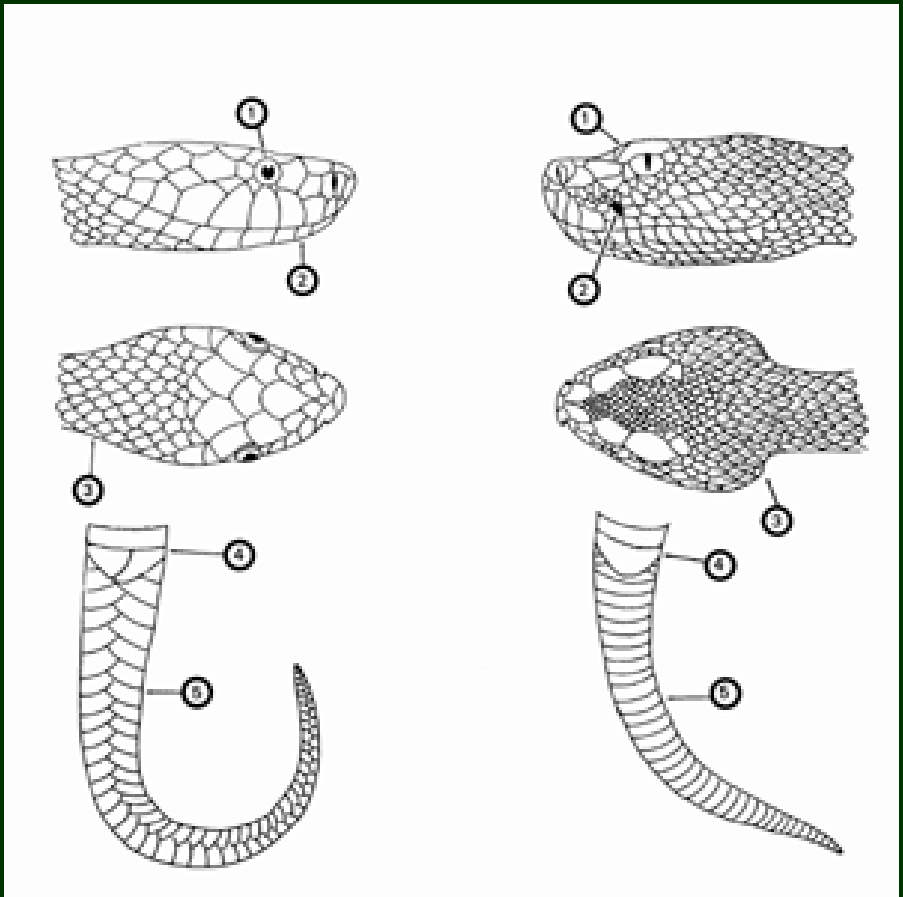

PLASTIC CAP
BAIT STATION FOR
MOUSE CONTROL
61 cm (2')
Internal baffle
to contain bait
(1')
3lcm
PVC 5cm
Tee
5cm (2")
PVC pipe
R. M. Corrigan
Purdue University

Snakes

- 49 species in Alabama
- 6 are venomous

- Problems
  - Danger associated with venomous species
  - The heebie-jeebies

Non-venomous vs. Venomous



Gray Rat Snake

Eastern Diamondback Rattler

Timber Rattler

Hognose Snake

Pigmy Rattler

Hognose Snake

Copperhead

Midland Water Snake

Corn Snake

Red-bellied Water Snake

Cottonmouth

Brown Water Snake

Coral Snake

Scarlet Snake

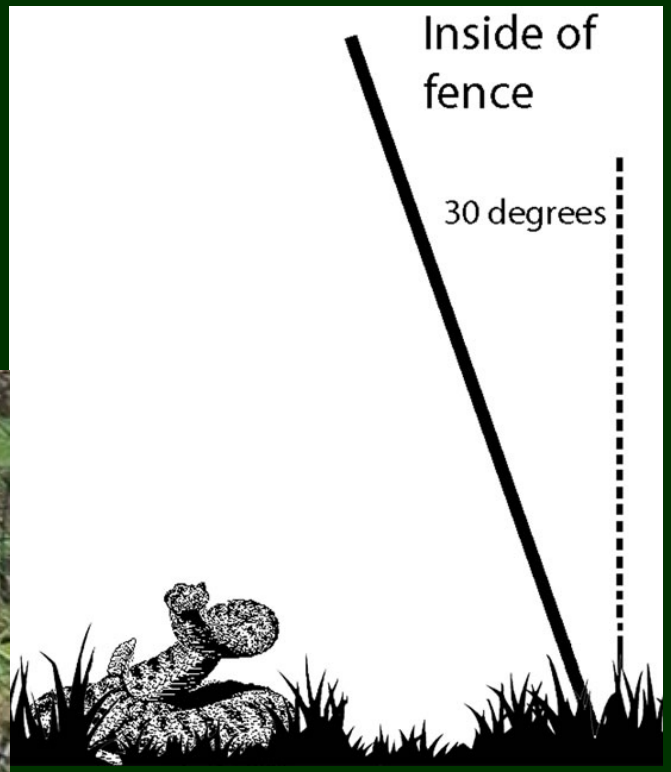
Scarlet Kingsnake

What do you expect when…

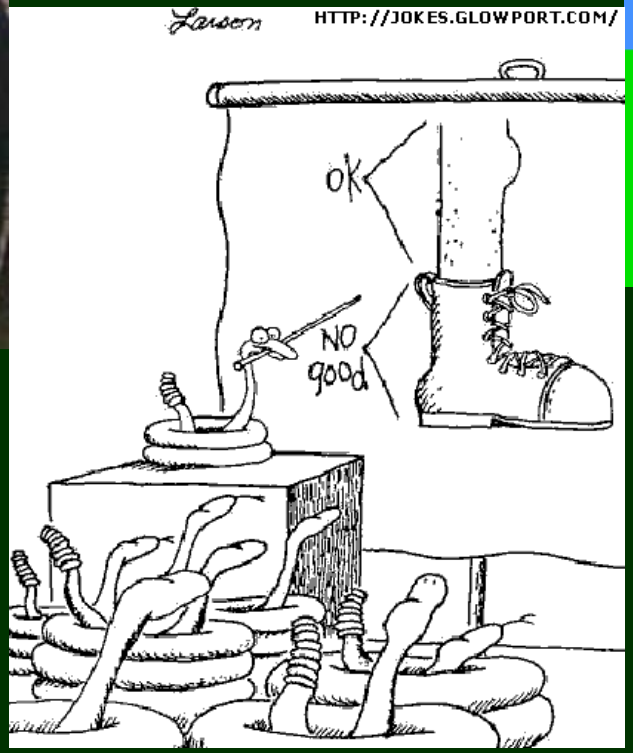
So, what should you expect when…

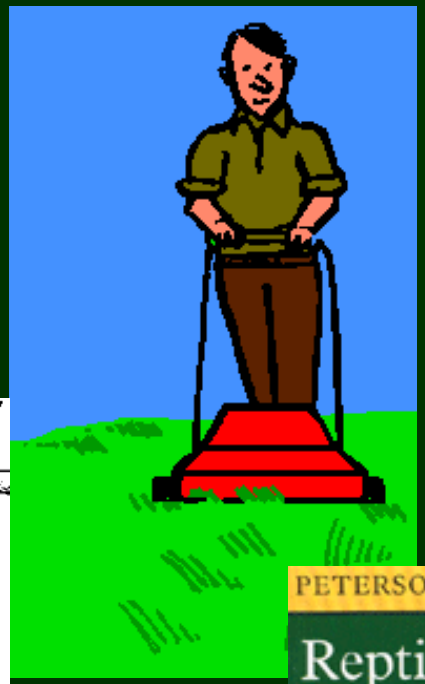
Snakes

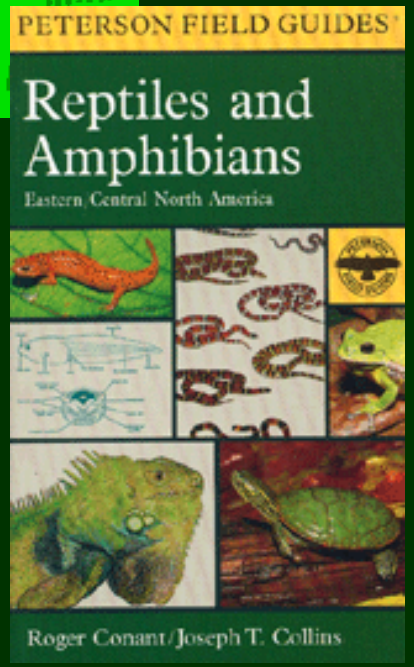
- Prevention = Control
  - Eliminate habitat
    - shade, wood piles, tall grass, and brush and rock piles
  - Exclusion
    - Snake fencing



4 steps


Larson
HTTP://JOKES.GLOWPORT.COM/
OK
NO good




PETERSON FIELD GUIDES
Reptiles and Amphibians
Eastern Central North America
Roger Conant/Joseph T. Collins

Bats

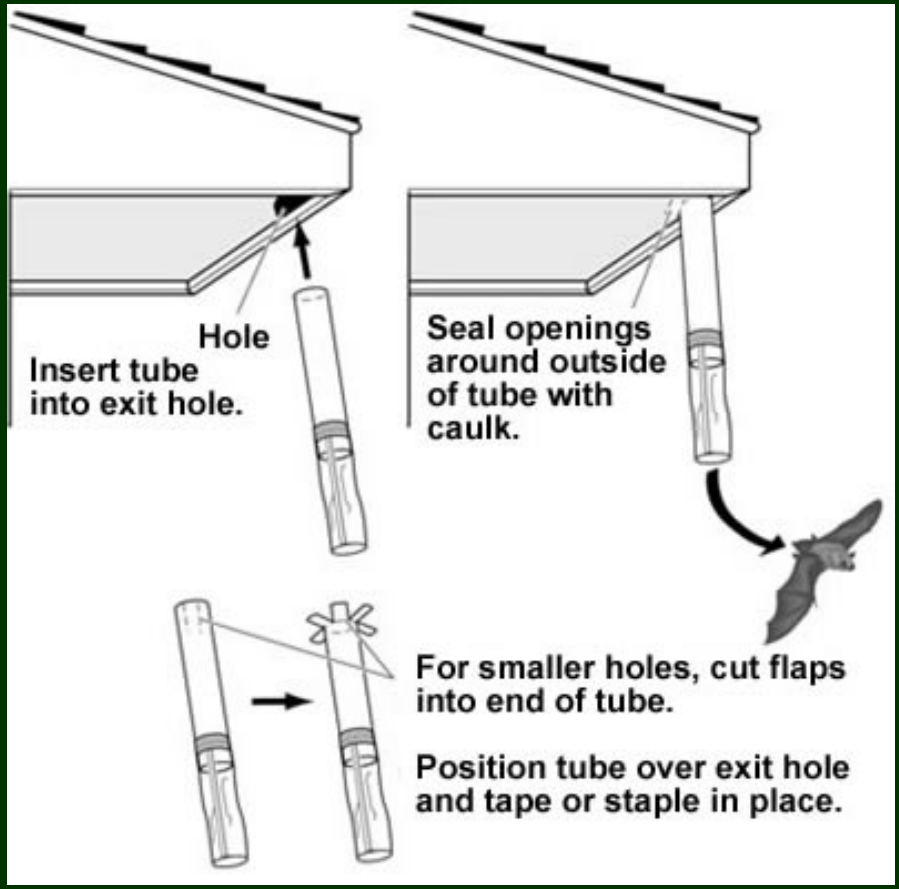
- 16 species in Alabama
- ALL are protected
- VERY beneficial insectivores
  - 3,000+ insect per night
- High Conservation Concern
  - White-nosed disease
- Problems
  - Roosting in attics/barns
  - Rabies <0.5%
  - Mess - histoplasmosis

Repelling Bats

- Inside
  - Naphthalene crystals (mothballs)
    - Useful in repelling bats in areas with little air circulation (attics, b/w walls, crawl spaces, etc.)
      - Not effective outside or where there is adequate ventilation.
    - Vapors are heavier than air - hang or place high in baseball-size clumps in mesh bags or panty hose
    - Prolonged inhalation vapors may be harmful to humans
      - Don’t put them where you frequent
  - Illumination
    - Lights strung throughout the attic during the daytime may cause bats to leave
    - Installing windows in attics for increased light during the daytime will reduce the attractiveness for roosting
  - Air movement
    - Bats do not like to colonize areas with a lot of air movement.
    - Create drafts with fans or open windows

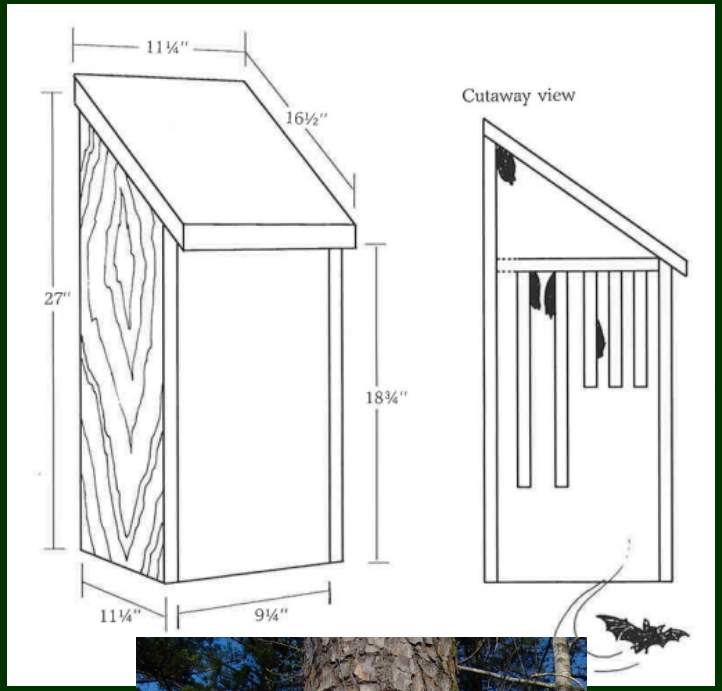
Bats

- Control
  - Secure/enclose buildings (any opening >3/8”)
  - Attract/deter them to another area
    - Bat houses
  - Cleaning Mess
    - Hire a professional
    - Histoplasmosis infection



Bats

- Bat houses
  - Rough inner surfaces for the bats to climb (rough-sawn cedar/cypress is best)
  - DON’T PAINT, STAIN, or FINISH
  - Fasten to a tree trunk or side of building 12 to 15 feet above ground
  - Locate in morning sun & evening shade (the east side of a tree/pole)



Birds

- Problems
  - Crop damage
  - Noise
  - Mess

- Prevention and Control
  - Habitat - Reduce roost structure
  - Harassment
    - Visual &Auditory
      - Effigy
      - Pyrotechnics
      - Cannons
  - Physical
    - Motion sprinkler
    - Dogs
  - Exclusion / barriers
    - Grids, nets, and fence
  - Chemical
    - Irritants & lethal for select species or by permit

Crows & Starlings

- Lethal
  - NO closed season on crows, starlings, blackbirds
  - Aforementioned chemical controls

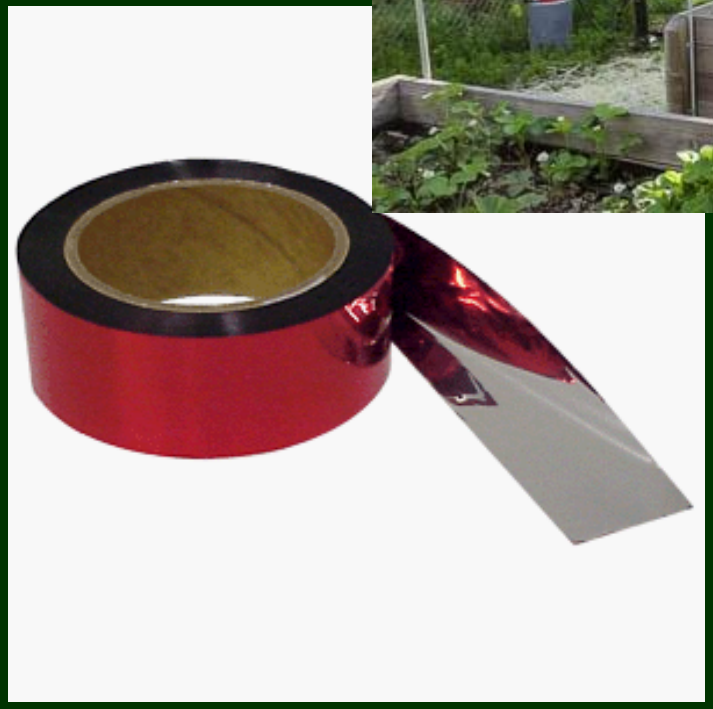
Blue jays

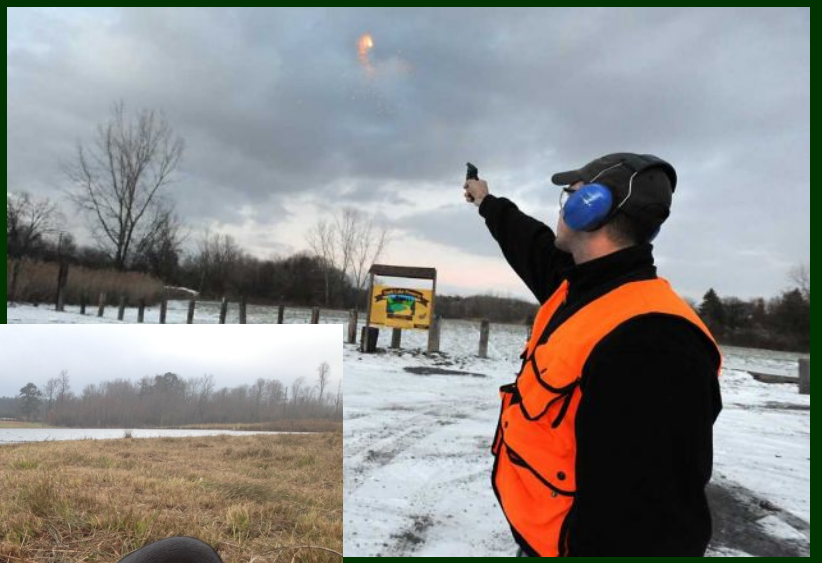
Blue Jay
Cyanocitta cristata

Blue jay damage is similar to that of crows, but blue jays prefer the smaller native pecans and are only minor depredators of the larger cultivar nuts.

Woodpeckers

- Red-headed, Red-bellied, Yellow-Bellied Sapsucker
  - Holes can be entry points for fungi and bacteria
  - Wrap tree trunks (burlap)
  - Hazing
  - Tactile repellents discourage landing upon the trunk



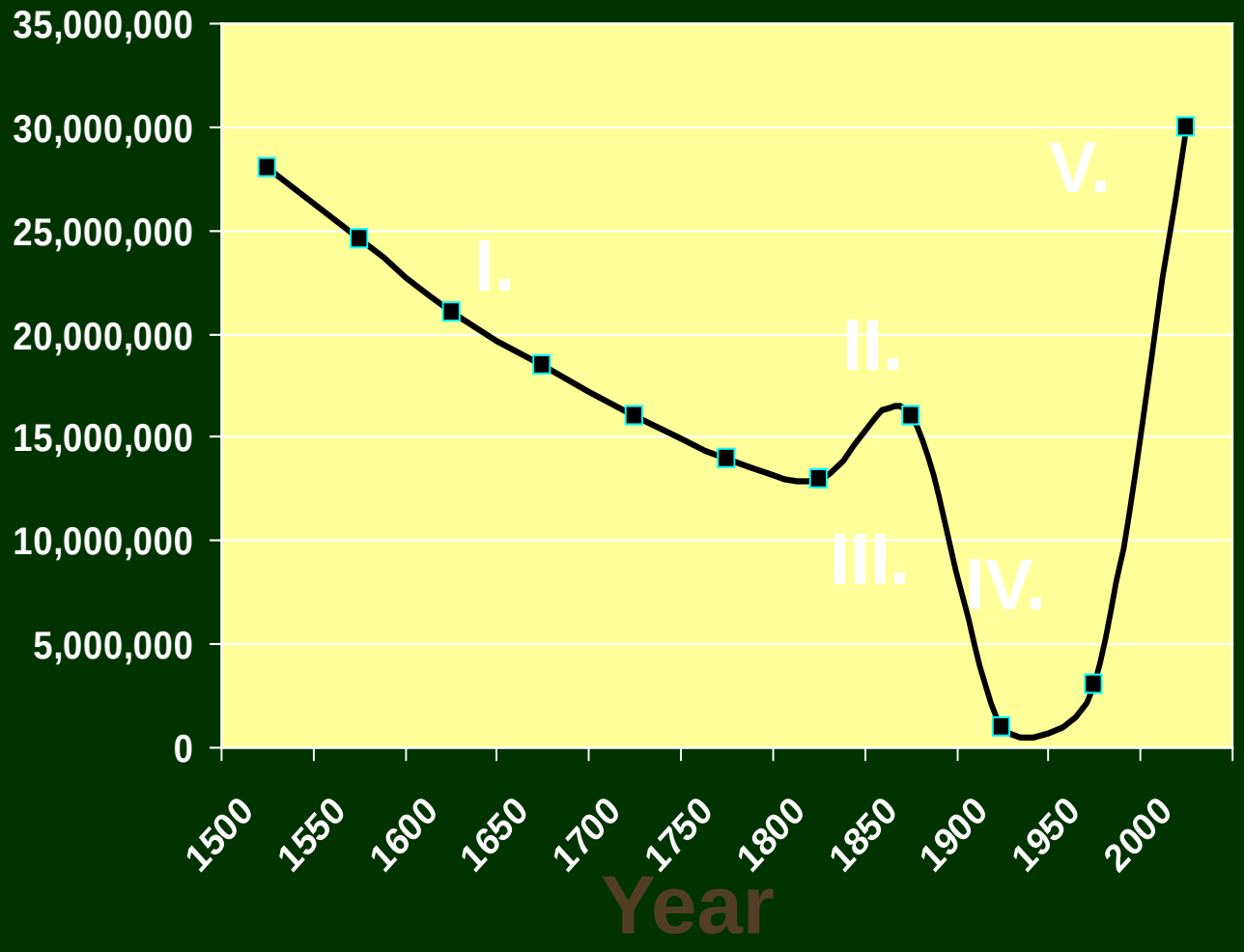


Carpenter Bee Chambers
in Dead White Pine Limb

White-tailed Deer

- $2 billion in damage nationwide
  (vehicle, ag., forestry, homegrounds)

White-tail Population 1500-2000

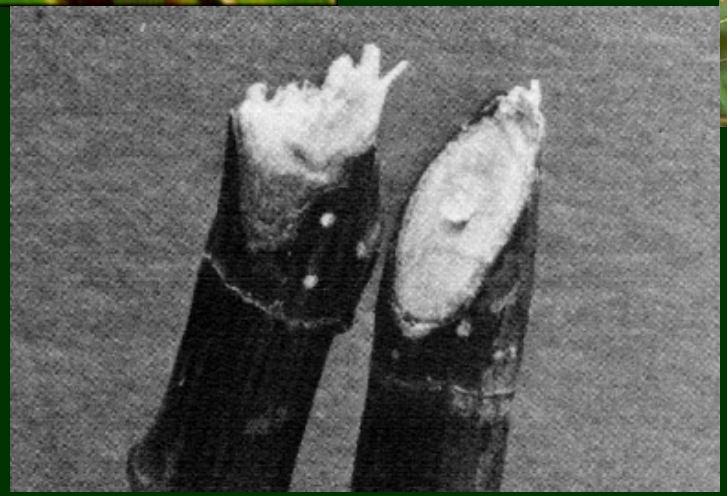


White-tailed Deer

- Problems
  - Ornamental
  - Agricultural
  - Human Safety
  - Disease


UGA2733037

Ag. & Forestry Damage



Damage Control

- DOGS
- Fencing
  - 8’ high
  - $180-600/A depending on type & site conditions
  - maintenance required
  - aesthetics
- Repellents
  - taste & odor
    - $10-400/acre for chemicals; labor?
- Frightening
  - Auditory – fireworks, propane cannons, etc.
  - Visual – scarecrow
- Did I mention DOGS?!?

Exclusion - Fencing

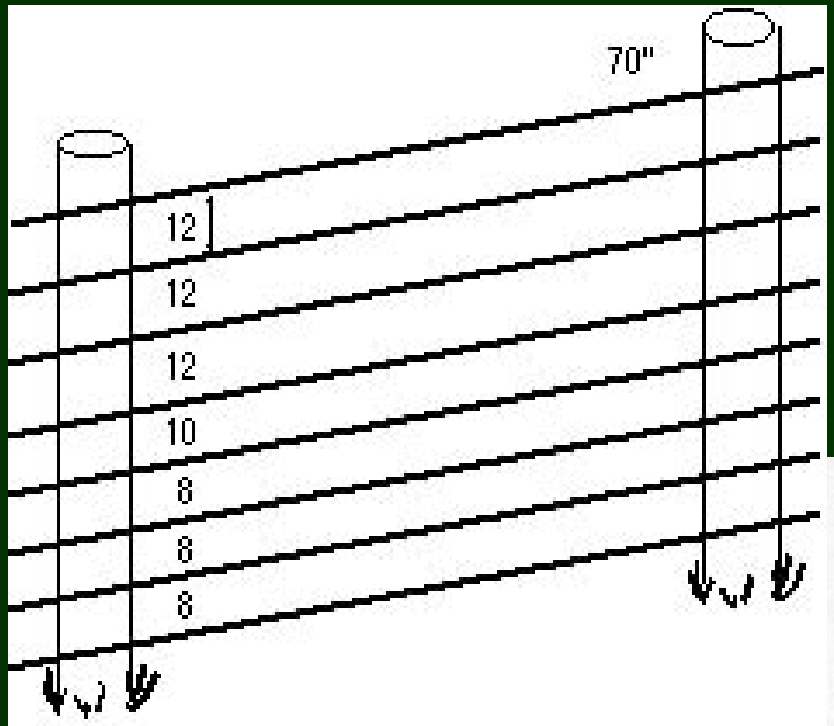
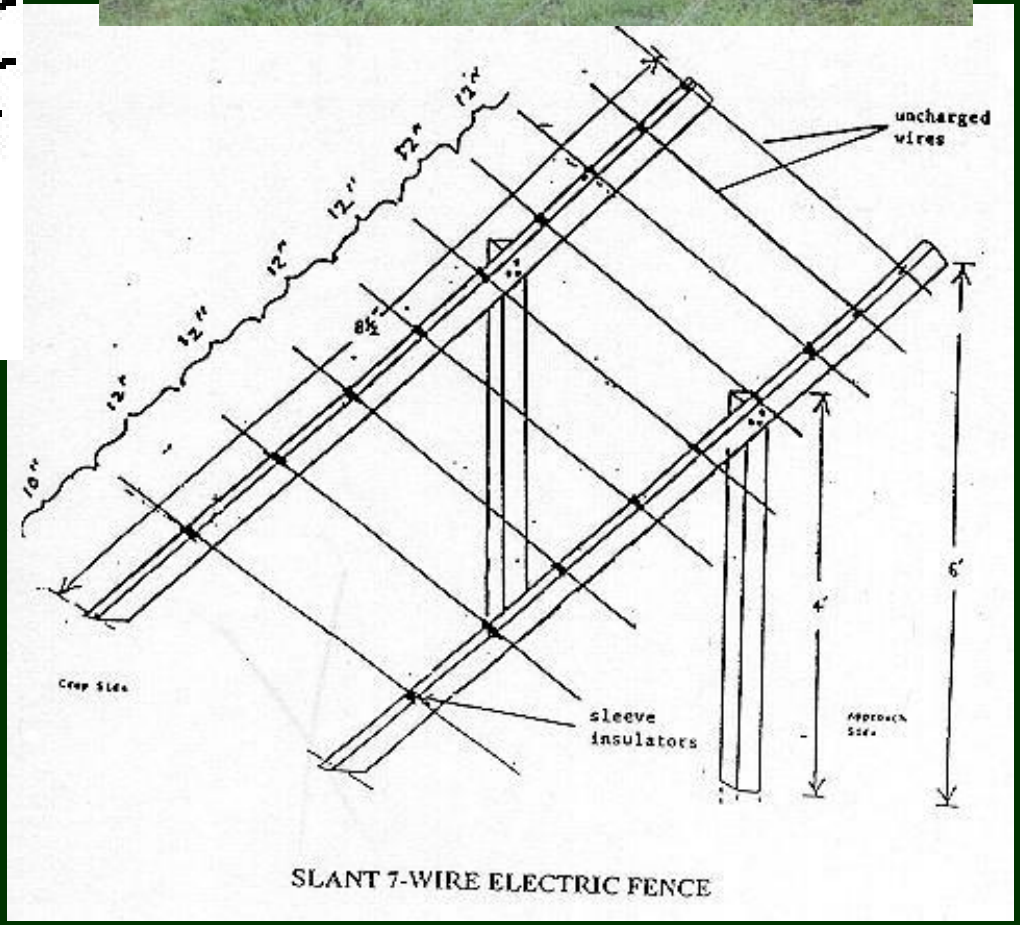
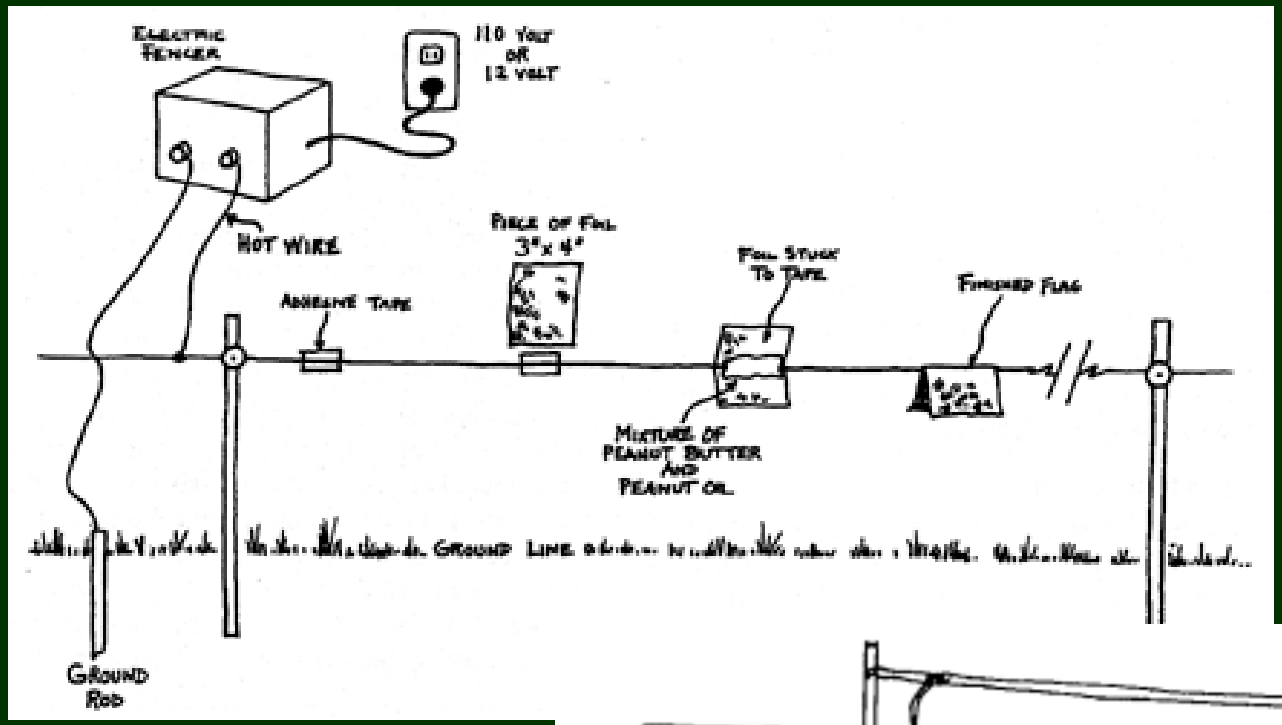


Figure 1. Multi-wire fence

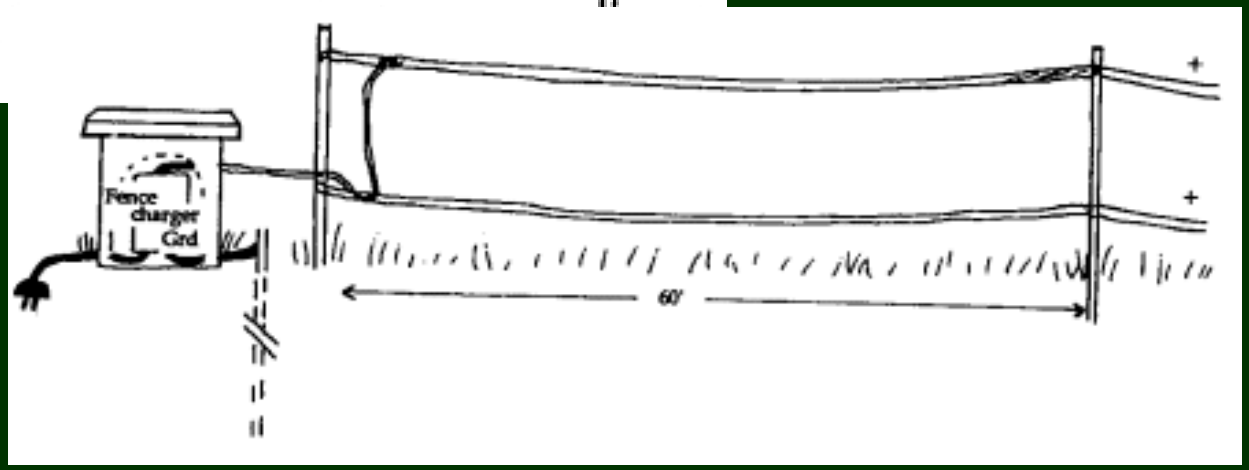


SLANT 7-WIRE ELECTRIC FENCE

Poly Tape Fence



- Put them up early and keep them HOT!



Repellents

Frightening

Lethal Methods

- Alter regulations, sharp-shooters, etc.
  - Bait and shoot
- Contraception
- Predator introduction hunting

Predator Introduction…yea right!

Lethal Methods

- Alter regulations, sharp-shooters, etc.
  - Bait and shoot
- Contraception
- Predator introduction hunting
- Traditional Hunting

Traditional Lethal Control

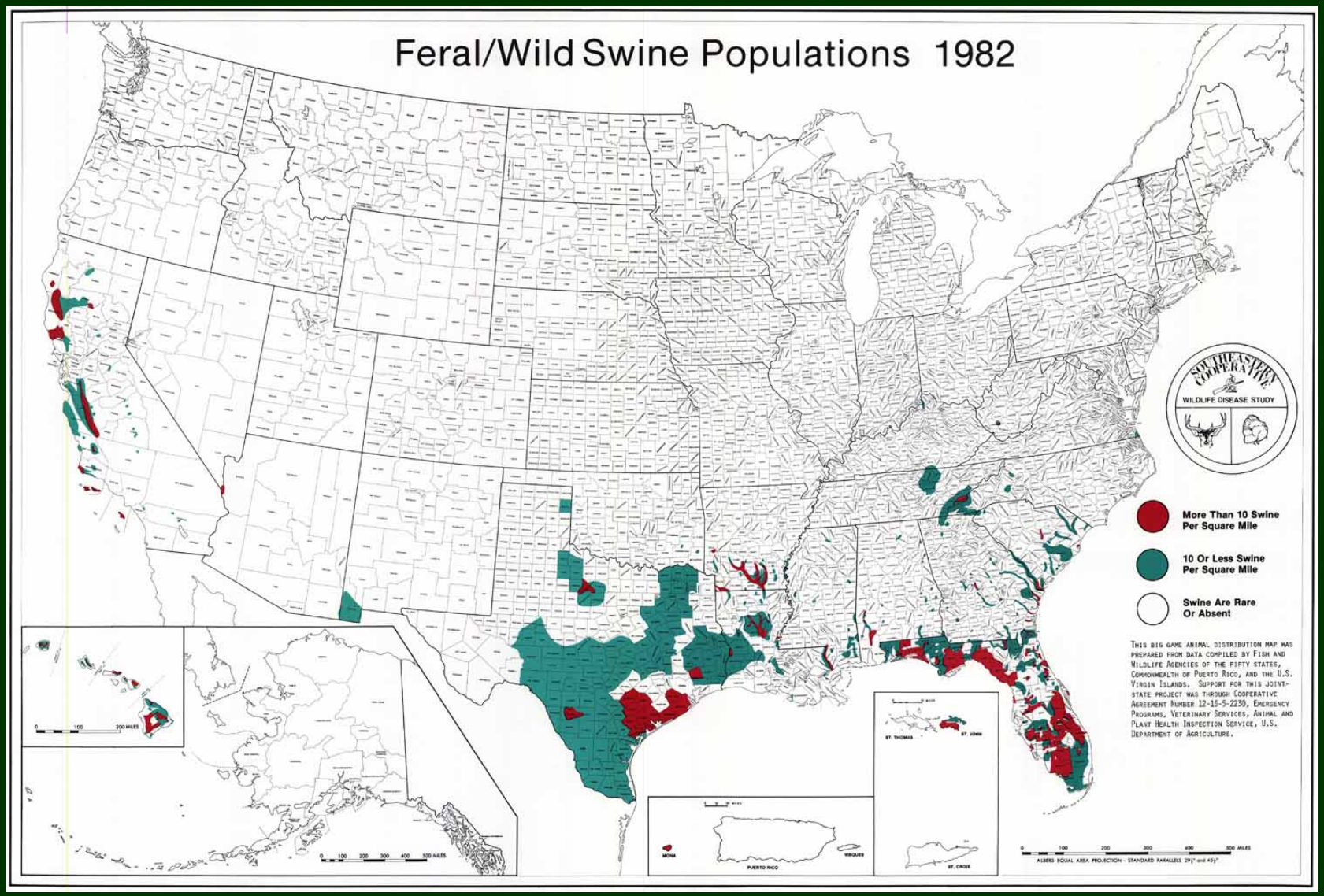
- Legal Harvest & Depredation Permits

Allow Ethical and Respectful Hunters to Help

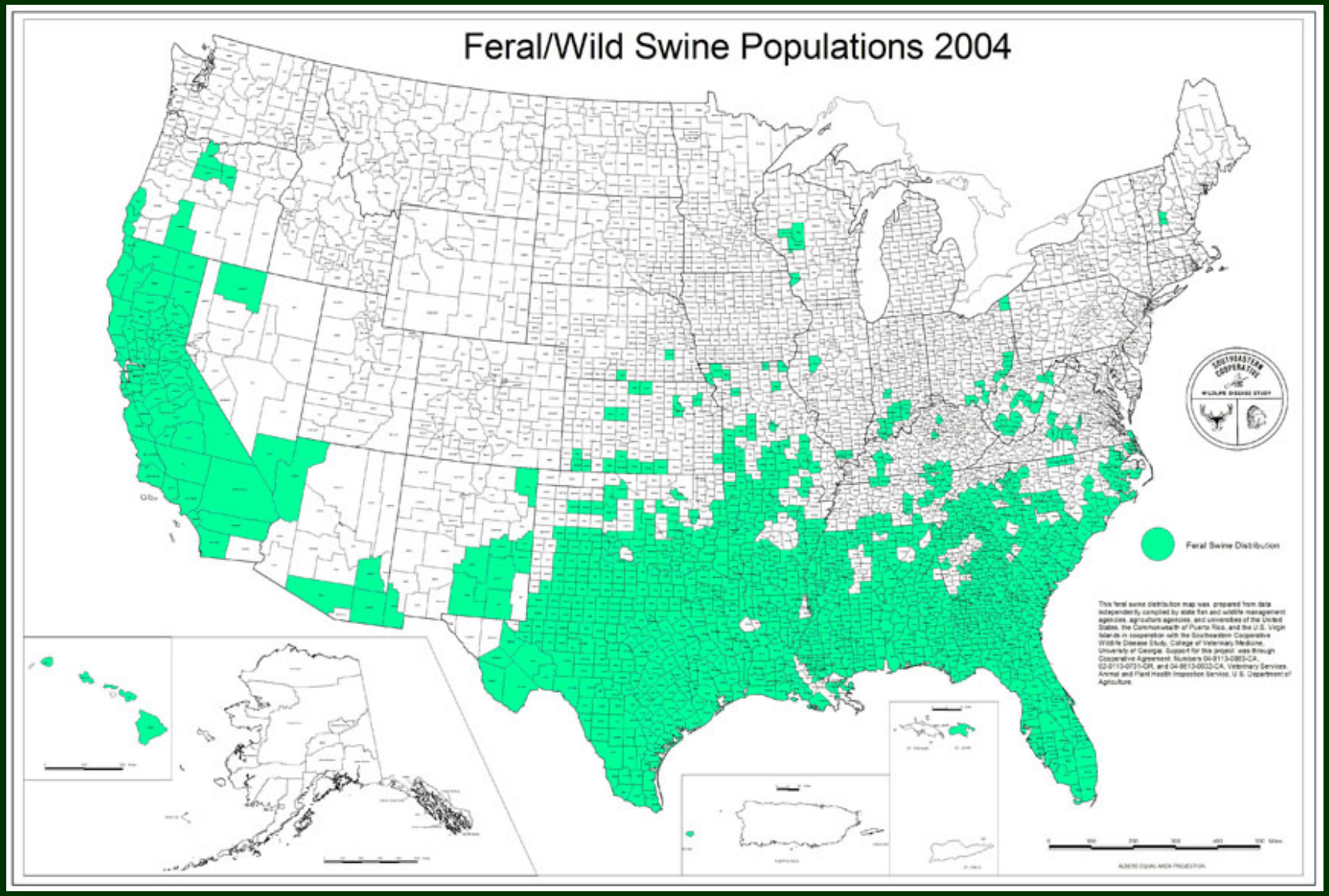
1. Control population growth and density.
2. Balance the sex ratio
3. A hunted herd is a healthy herd

Feral Hog

Range


Feral/Wild Swine Populations 1982
SOUTHEASTERN COOPERATIVE
WILDLIFE DISEASE STUDY
More Than 10 Swine Per Square Mile
10 Or Less Swine Per Square Mile
Swine Are Rare Or Absent
THIS BIG GAME ANIMAL DISTRIBUTION MAP WAS PREPARED FROM DATA COMPILED BY FISH AND WILDLIFE AGENCIES OF THE FIFTY STATES, COMMONWEALTH OF PUERTO RICO, AND THE U.S. VIRGIN ISLANDS. SUPPORT FOR THIS JOINT-STATE PROJECT WAS THROUGH COOPERATIVE AGREEMENT NUMBER 12-16-5-2230, EMERGENCY PROGRAMS, VETERINARY SERVICES, ANIMAL AND PLANT HEALTH INSPECTION SERVICE, U.S. DEPARTMENT OF AGRICULTURE.
ST. THOMAS
ST. JOHN
MONA
PUERTO RICO
VIEQUES
ST. CROIX
ALBERS EQUAL AREA PROJECTION - STANDARD PARALLELS 29½° and 45½°

Range


Feral/Wild Swine Populations 2004
Feral Swine Distribution

Why have they expanded?

- Trapped, transported, and released
- Escaped from domestic & hunting operations
- Dispersal from established populations
- Generalist omnivores
  - Animals, carrion, plant matter, ag. crops
- High reproductive potential & success
  - Mature 6-8 months + 115 day gestation + 4-8 piglets + 3 litters/year = lots of hogs in a hurry (~18 piglets/ yr. + ~18 piglets from initial offspring)
  - A pair of hogs turns into ~38 in 365 days!

Agricultural Damage

- Agricultural crops
  - Hay, grains, corn, peanuts, veg., melons, soybeans, cotton, seedling trees
    - Consumption
    - Rooting
    - Trampling
    - Digging
- Equipment/facilities
- Livestock predation
- Roads

Damage to Equipment/Facilities

- Fencing
- Watering facilities
- Secondary damage to farm machinery

Disease

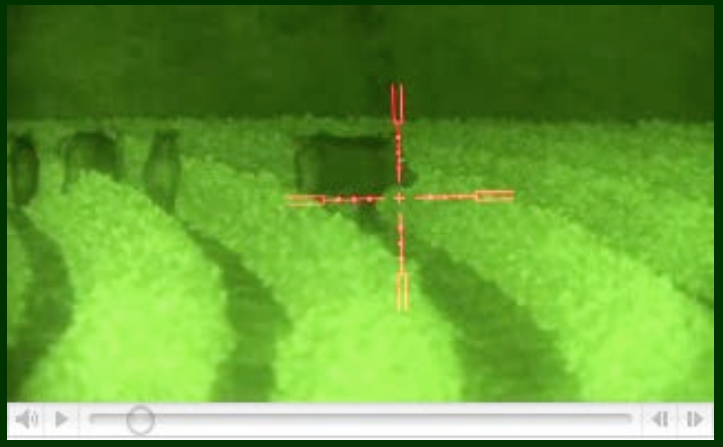
- Feral hogs are reservoirs for disease
  - Brucellosis
    - affects domestic swine and HUMANS
    - spread through handling reproductive organs
  - Pseudorabies
    - humans not effected
    - spread by nasal and venereal secretions

Damage to Wildlife

- Disease vector
- Ground nesting birds (quail, turkey)
- Predation
- Competition with wildlife
  - Food
  - Space

Control Methods

- Exclusion/Fencing
- ~~Aerial gunning~~
- ?Poisoning?
- ~~Snares~~
- ~~Hunting with dogs~~
- ~~Shooting/Hunting~~
- ?Contraceptives?
- ~~Feeding~~
- Trapping

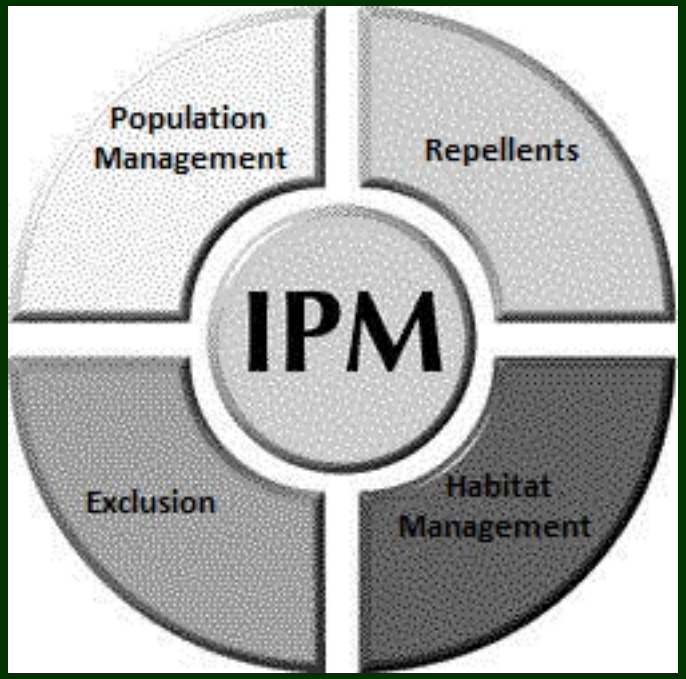


Trapping

- Sounder removal
  - Pre-baiting & surveillance is KEY!
  - Late winter when natural foods are scarce
  - Don’t educate your pigs. Call your extension office from the start.

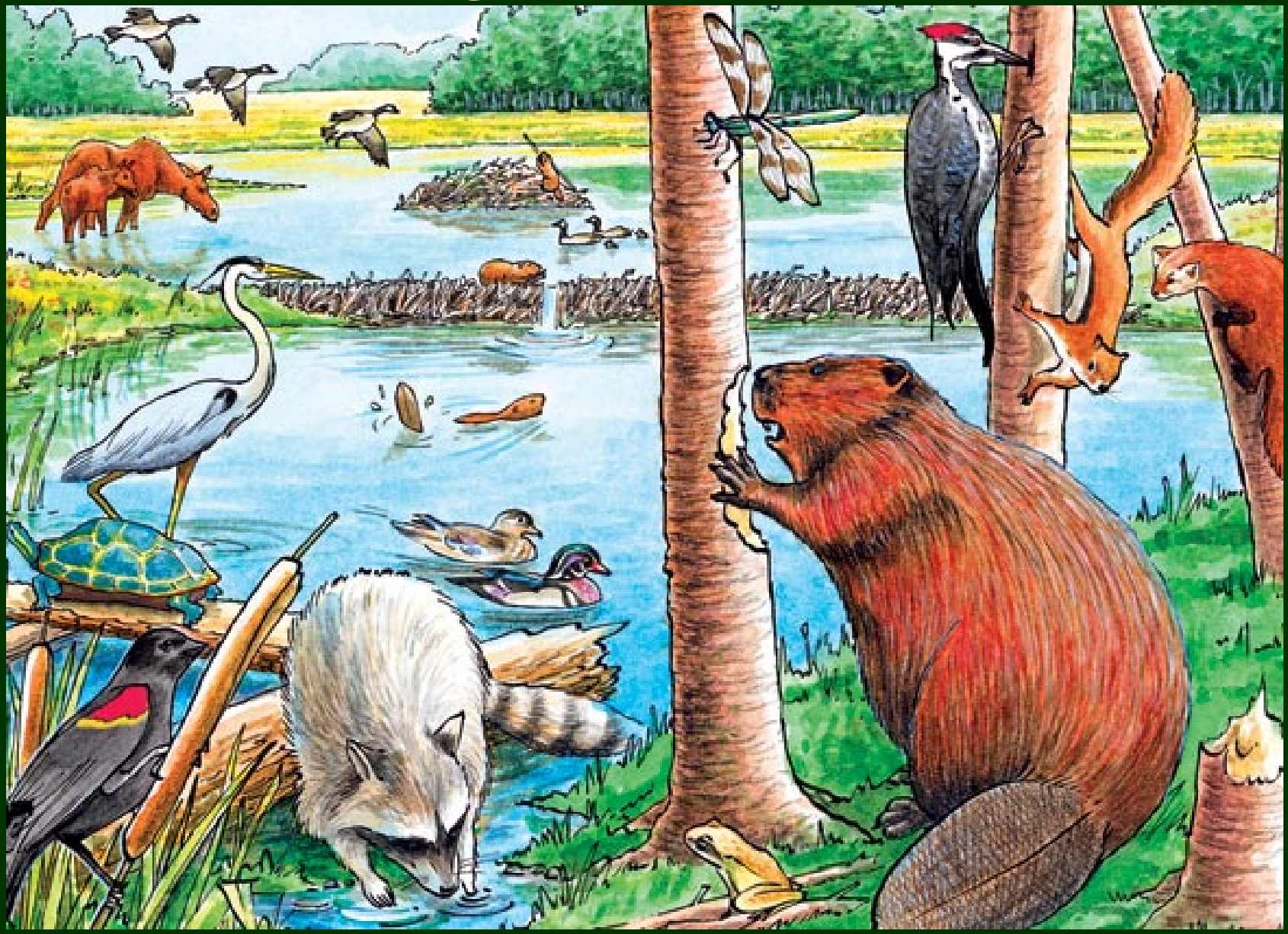
Remember: No Magic Solution

Remember:
Integrated Pest Management



Don’t get discouraged!

Questions?



Thank You

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