

Apple IPM Intensive Workshop

IPM for Wildlife Damage & rate your learning

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Integrated Wildlife Management

Deer

Voles

Rabbits

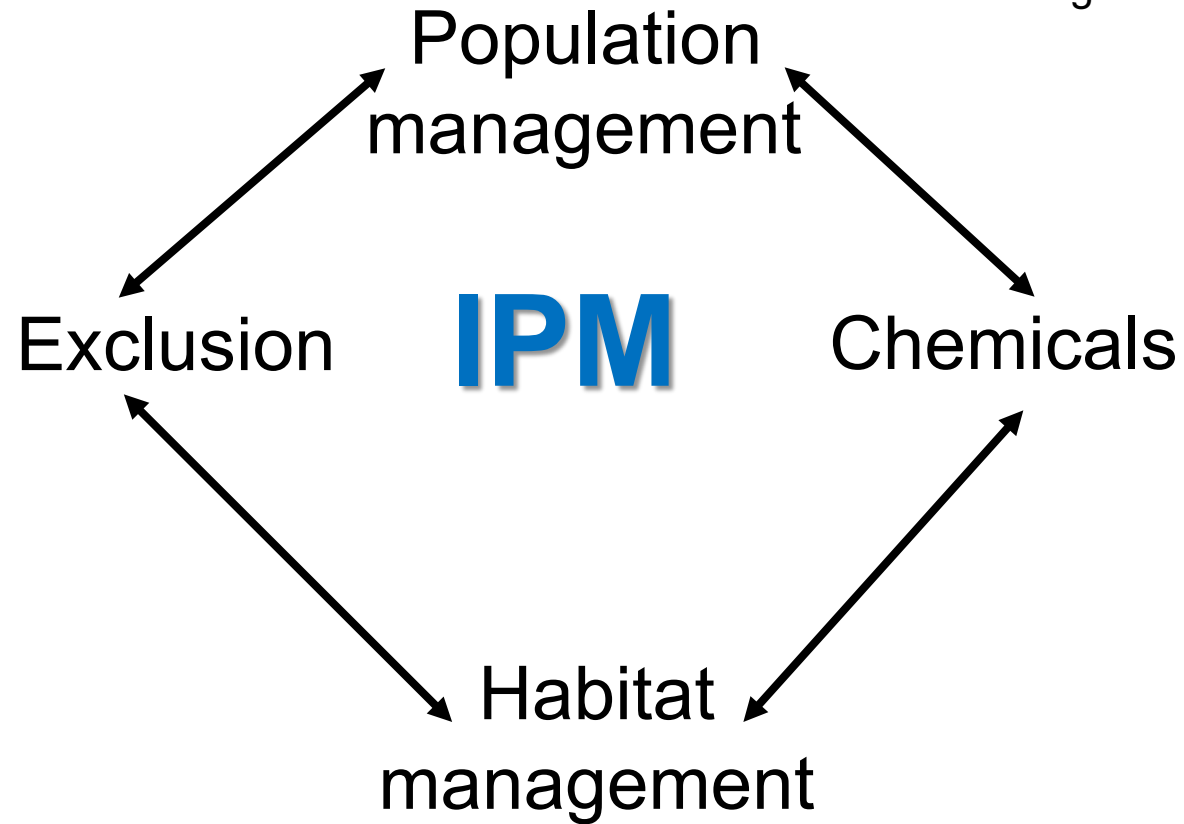
Woodchucks

Others not covered
in this workshop

- Assess all considerations and options
 - What species is causing damage?
 - What type of crops are being affected?
 - How many acres?
 - Housing density on surrounding properties?
 - Select a combination of appropriate techniques
- Re-assess
 - If things don't work, why not?
 - Other options?

Management Options

Hunting is cheap & provides quick results.



...Bullets!



8-foot woven-wire fences.



Deer browse on an apple shoot.

Factors Influencing Deer Feeding Pressure

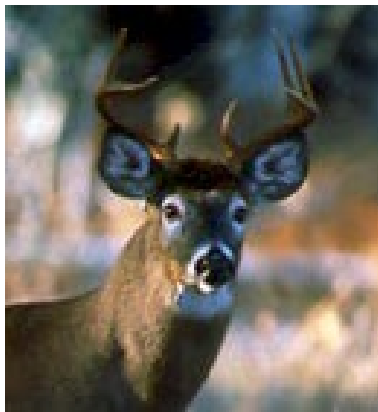
- Deer population density
- Food & cover sources
- Travel corridors
- Alternative foods
- Season & weather
- Deer nutrition
- Palatability
- Previous experience



The Landowner has Control of Hunting on Their Property



OR

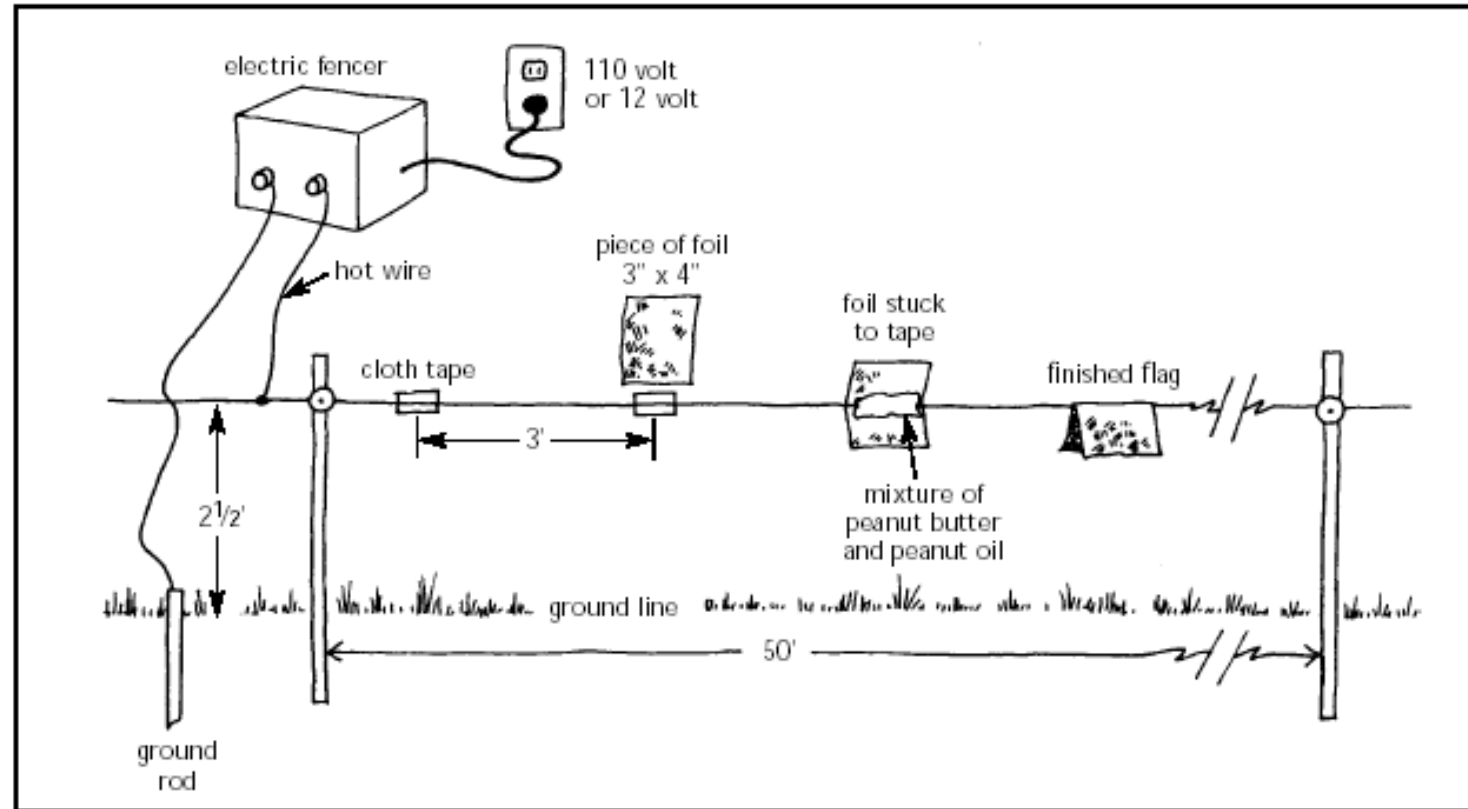


- Tailor it to meet your local needs
- Restrictions on who, when, where & how
- Marksmanship requirements
- Must check local town and village discharge ordinances
- Manage deer on a landscape scale
- Sex, age, and number of deer to be taken
- Use DEC DMAP or DDP permits on farms with high damage
- Harvesting females (does) should be encouraged
- Most growers consider hunting somewhat effective

Baited Electric Deer Fence

Fencing provides the best long-term solution to deer management.

- Exclusion, before prior experience
- Avoid travel corridors
- 8-ft height, minimum
- Can use diagonal design
- Electrified & baited



Invisible Fencing and Dogs

- Dogs and invisible fences had a positive economic return. *However...*

Be aware of food safety restrictions and GAP certification.

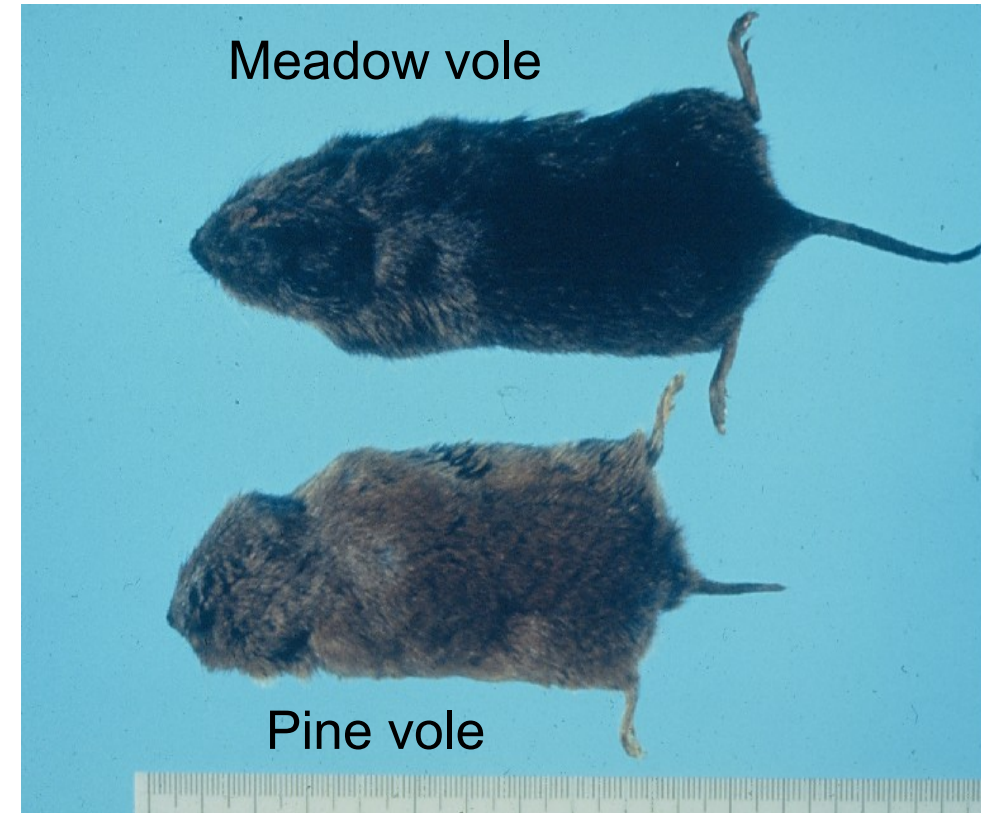
Dogs may need to be kept out of the orchard area.



Meadow & Pine Voles in Orchards



VOLE ECOLOGY		
	PINE VOLE	MEADOW VOLE
HABITAT	MOIST, WELL-DRAINED LOOSE SOIL WITH LOW GROUND COVER	DENSE COVER OF GRASS AND WEEDS
HABITS	FOSSORIAL; DIGS SUB-SURFACE TUNNELS UNDER DRIP-LINE OF TREE	USES SURFACE RUNS IN DENSE COVER; MAY USE SHALLOW PINE VOLE TUNNELS
DIET	GRASS, ROOTS, SEEDS, FRUIT, TUBERS, BARK	GRASS, FRUIT, HERBS, BARK (WINTER)
NESTS	SUB-SURFACE; WELL-FORMED WITH A GRASSY LINING	SURFACE; WELL-MADE, GRASSY; OFTEN FOUND IN GRASS CLUMPS
GESTATION	24-25 DAYS	21 DAYS
LITTER SIZE	2-3, OCCASIONALLY 4 OR MORE	3-5, OCCASIONALLY 6-7





Voles require ground cover
for tunneling and nesting.

Use this to your advantage
and manage your orchard
to eliminate their habitat.



Vole Damage Management Alternatives

Management Alternatives

- Cultural practices
 - mowing
 - bare ground in tree row
- Exclusion
 - tree vole guards
- Chemicals
 - herbicides
 - rodenticides
- Trapping

IPM Program

- Ground cover management is important
- Vole guards are essential
- Prudent use of rodenticides is sometimes needed
- Trap-out is possible on small areas, but plan for reinvasion



Orchard ground cover habitat management

- Mowing row middles
- Herbicides in tree row

Vole guard around trunk



T-tube bait station

- Rodenticides, post harvest or early spring



Covering traps and bait stations is important



Rabbits & Woodchucks in Orchards

Cottontail Rabbits – plant damage



Deer vs. Rabbit Damage



Woodchucks – burrows



Managing Rabbits & Woodchucks

Rabbit IPM

- Exclusion
 - Fencing
 - Tree guards
- Population management
 - Hunting
 - Live trapping (DEC permit)
- Chemicals
 - Repellents

Woodchuck IPM

- Population management
 - Shooting
 - Trapping
 - Gas cartridges (lethal)
- Exclusion
 - Add electric wire at 5-6 inch height to deer fence.
- Habitat management
 - Remove brush or rock cover
 - Mow fields and ditch banks



Rate Your Learning

On IPM for wildlife damage in apple orchards
with Poll Everywhere





What provides the best long-term solution to deer management in orchards?

Hunting **A**

Fencing **B**

Repellents **C**



Meadow vole populations can be managed as part of the orchard weed and ground cover management program.

True

False