

Moles, Voles, and Other Small Holes: What's Digging in My Yard??



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Living with Wildlife



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Living with Wildlife

- Land cover changes
- Wildlife are adaptive
- We are providing resources...



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What's Yours is Mine, Right?



- Habitat creation
 - Conservation and creation of natural areas
 - Community gardens
 - Recreational green spaces
 - Landscaping

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Steps for Managing Wildlife Damage

- 1) Identify the species responsible
- 2) Understand the species habitat needs
- 3) Make cost-effective decisions
 - Bring damage down to a tolerable level
- 4) Employ management options
 - Often involves persistence, commitment, and continual monitoring


Trapping
Hunting
Exclusion
Pesticides
Harassment
Education
Habitat Modification

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Is it a Mole or a Vole?



Mole	Vole
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- Insectivore (worms, beetles, grubs)
- 3 species in Ohio
 - Eastern mole most common
- Rodent (plant material)
- 4 species in Ohio, two are common, AKA meadow mice
 - Meadow and Woodland vole


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Which is Which??


VOLES
Blunt Nose
Front feet = back feet



MOLES
Pointed Nose
Front feet ≠ back feet



SHREWS
Pointed Nose
Front feet = back feet



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Assess the Damage & ID Responsible Species

Vole



Mole



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CFAES

Assess the Damage & ID Responsible Species

Mole



Vole



Mole



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Assess the Damage & ID Responsible Species

Vole



Squirrel



Chipmunk



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Mole Ecology

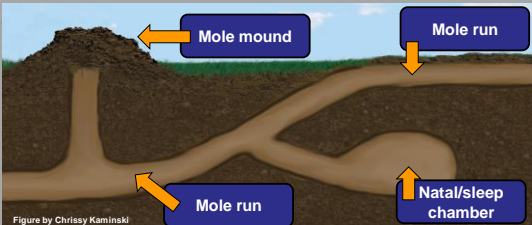


Figure by Chrissy Kaminski

- Consumes 3/4 body weight daily
 - 15 feet of tunnel/hour
- 3-5 moles/acre = average density
- Single litter in May, 4-5 young



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Vole Ecology

- Prolific breeder
 - Every 3 weeks from March- November
 - **Target populations fall-winter**
 - 4-6 young/litter (up to 11)
 - Sexual maturity after 25-40 days
- Densities of 10-100/acre
 - Cyclic populations
 - **Population monitoring**

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Don't Get Your Critters Confused




Voles DO NOT make mounds of dirt. **Voles** WILL sometimes use mole tunnels to get to plants.
Moles DO NOT eat plants.

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Management Options for Moles




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Management Options for Moles

- Trapping
- Pesticides
 - **Poison baits**
 - ~~Repellents~~
 - ~~Gas cartridges~~
 - ~~Fumigation~~
- ~~Harassment~~
 - ~~Ultrasonic devices~~






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Identifying Mole Damage

- Travel runs and feeding runs
 - Just below soil surface
- Volcanic-like mounds of soil
 - From excavation of deeper runs and burrows





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Trapping Moles

- Several types of traps
 - Harpoon, choker loop, scissor jaw, No Mole, Moleinator, Victor Out O' Sight
- All are lethal and effective.


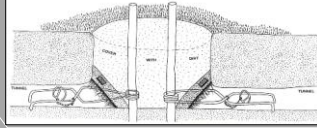
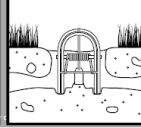
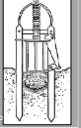
Use multiple traps and trap active, straight feeding runs near soil surface.

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Dig Down to Find the Tunnel

- Follow specific directions for each trap type
 - NoMole & Moleinator placed inside runs
- Straddle the run
 - Harpoon & Victor
- Cover the hole to keep light out

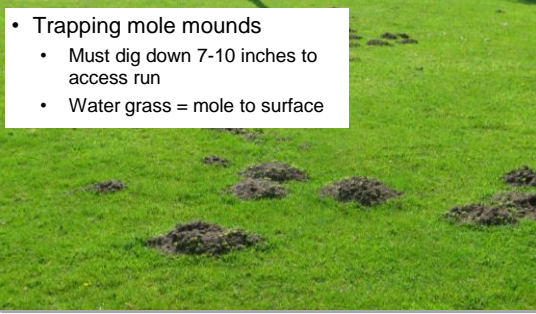
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Mole Trapping Recommendations

- Trapping mole mounds
 - Must dig down 7-10 inches to access run
 - Water grass = mole to surface




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Mole Pesticides – Poison Baits

- Granular/pellet baits
 - Zinc phosphide, diphacinone
 - Not preferred food choice
 - **Limited effectiveness**
- Gel bait
 - eg. *Kaput Mole Gel Bait*
- Worm/Grub-shaped bait
 - Bromethalin
 - *Talpirid, Victor Moleworms*
 - Bait in the form of worm or grub
 - **Anecdotal reports of success**
- **Secondary toxicity concerns**




“Dogs, cats, and other predatory and scavenging mammals and birds might be poisoned if they feed up on animals that have eaten this bait.”

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Is it a Mole or a Vole?



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Quick Quiz!

Is this a vole? **No.**

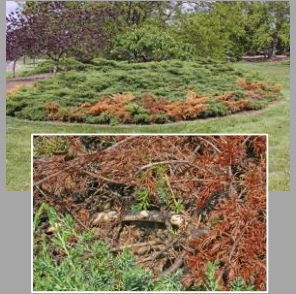


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Management Options for Voles



- Habitat Modification
- Exclusion
- Trapping
- Pesticides
 - Repellents
 - Poison baits

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Vole Habitat Modification



- Reduce/eliminate ground cover
 - Landscape grasses
 - Mulch
 - Grass/weeds around orchard/nursery trees
 - Grasses cut short into fall
 - **Increases predator access**
- Remove attractive cover & food sources
 - Straw bales, boards, etc.
 - Bird feeders
 - Fruit drop (especially if using poison baits)

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Management Option for Voles

Exclusion

- Hardware cloth cylinders
 - ¼ - 1/8 inch mesh 12" tall
- Use on young trees with grass/weed control

Repellents

- Hot pepper, predator urine
 - Short term protection



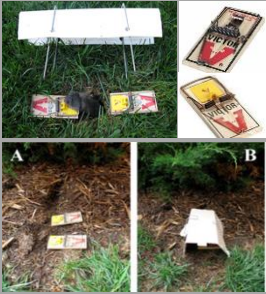
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Trapping Voles

- ID active areas
 - Cut grass in runs/around holes
- Snap traps – expanded trigger (use dozens) or multiple catch traps
 - Hit population hard = longer recovery time**
 - Use many traps at once!
- Place directly inline with vole runs or on either side of hole
 - Covered with 1 gallon plastic plant pots with entrance hole
 - Stake the traps to the ground



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Trapping Voles

- Good bait = peanut butter and oatmeal
 - No bait if covered successfully
- Past success = future success
 - Odor attracts other voles
- Most effective for smaller areas **or** in conjunction with toxic baiting






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Voles Pesticides – Poison Baits

- No toxic baits are available for use in edible gardens or crops
- Active ingredient - Warafin
 - Anticoagulant
 - Must be used within 50-100 of building/residence with a bait station
- Application best in fall
 - After breeding season
 - Gather food for winter


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Voles Pesticides – Poison Baits

- Other toxic baits:
 - Zinc phosphide
 - Additional anticoagulants
- Most are restricted use
 - Require pesticide applicator permit!
 - Specific site restrictions
 - Special care must be taken to avoid non-target species exposure




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Remember to be Safe!

- Wear appropriate safety equipment
 - Glove when handling traps or pesticides
- Wash hands after handling traps
- Avoid setting traps in areas with high pet and human traffic
- Don't set traps unless you can check them daily.
- READ THE LABEL.**




DO YOU ALSO EAT THESE WITH THAT MASK ON?!

seppo.net

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Things to remember:

- Target control to where moles/voles are active.
- Use many traps (esp. with voles).
- Do your homework on mole trap operation to avoid error.
- Consider modifying attractive vole habitat.
- Read labels on pesticides to make sure site matches and safety protocols are followed.

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Another Quick Quiz!

Name the animal.

Mole



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Identifying _____ Damage



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Not to be confused with...



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The Eastern Chipmunk



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Chipmunk Tunnel Entrances



- Roughly 2 inches in diameter
 - Neat, clean edges and no mound of dug-out soil
- Often near buildings, garages, or objects, such as stumps, wood or rock piles



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The Chipmunk Burrow System

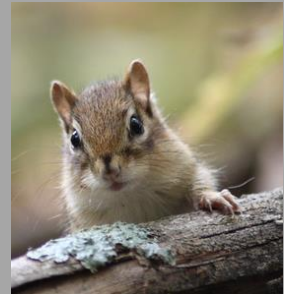
- Extensive burrows
 - 2" in diameter
 - 20-30' long
- Home range = 0.5 ac
 - Defends 50' around burrow entrance
 - Home ranges overlap
 - 10+ animals/ac
- In burrows from late fall – March
 - May emerge on warm days during winter



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Management Options for Chipmunks

- Pesticides
- Trapping
- Habitat Modification



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Managing Chipmunks - Pesticides

No toxic baits labeled for use on chipmunks

- Chipmunks cache food = stored poison

Repellents

- Short-term use with multiple applications
 - Hot pepper



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Trapping Chipmunks

- Most active early morning and late afternoon
- Use several traps
 - Rat snap traps or cage traps
 - Cage trap size
 - 5 x 5 x 18-inch
- Set at burrows or along runways
 - Secure to prevent movement
- Pre-bait traps for 2-3 days
 - Bait - oatmeal & peanut butter



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Habitat Modification

- Avoid plantings that connect woods to home
- Remove wood piles, rocks, and other debris near foundations
- Place bird feeders 15-30' away from home
- Keep grass cut short around buildings



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Take-Away Messages:

- 1) Identify the species responsible and understand the species habitat needs
- 2) Make cost-effective decisions to bring damage down to a tolerable level
- 3) Coexistence is key – must find your own happy place.
- 4) Be persistence, committed, and patient.
- 5) Don't let it get you down. Use your resources.

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Additional Resources - Publications

- Managing Voles in New Hampshire Orchards and Highbush Blueberries – NH Extension
- Understanding Vole Problems in Direct Seeding: Strategies for Management
- Attracting Wildlife for Pest Control on Farmland
- Vole Control in Lawns and Landscapes – Kansas State Extension
- Managing Voles in Colorado – Colorado Extension
- Voles [*Microtus* sp.] – Utah State University Extension
- Living with Wildlife: Moles – Washington U Extension

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All Resources Posted at:



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Don't let the negative experiences outweigh the positive.



Urban spaces and backyards are where many people gain first-hand experience with wildlife.



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Thank you!

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"Our little mole problem is getting worse."

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