

First, determine if you have moles or voles! They are very different creatures!

- Are there tunnels through your yard? Moles create extensive underground burrows.
- Are bulbs, roots or base of plants chewed up, or do you see quarter-sized holes in yard? You may have voles.
- Moles primarily eat insects and voles eat plant material.

Second, we encourage tolerance, not eradication of wildlife. Properly identify the problem and work to identify the least toxic methods of improving the situation.

## Moles

- Moles (eastern, hairy-tailed, and star-nosed moles) are seldom seen above ground, but you can see tunnels.
- Diet includes worms, insects, other invertebrates, but can sometimes include vegetation.

### **Non-lethal Management Recommendations:**

- Reduce food supply - apply milky spore to kill grubs. Chemical insecticides labeled for grub control are very toxic and not recommended. Use of repellents is not very effective - See [www.kellysolutions.com/nc](http://www.kellysolutions.com/nc) for options.
- Consider physical barriers for small areas. Place 24 inch hardware cloth fence at ground surface and bury to it to a depth of at least 12 inches bent out at a 90° angle.
- Cultural methods include packing soil with a roller and reducing soil moisture.

### **Lethal Management Options:**

- Moles may be shot during the act of causing property damage (local ordinances may prohibit the discharge of firearms, please check for restrictions. *Not allowed in city limits*)
- Moles causing property damage may be trapped by the homeowner under a depredation permit issued by the NC Wildlife Resources Commission. A depredation permit must be obtained prior to setting traps. To obtain a free depredation permit, contact a Wildlife District Biologist or a Wildlife Enforcement Officer in your county. Find a list online at [www.ncwildlife.org/Have-A-Problem](http://www.ncwildlife.org/Have-A-Problem) or call (919) 707-0050.
- Certified Wildlife Damage Control Agents can be hired to help resolve mole issues. These agents can assess damage and issue depredation permits if needed. For A list of Wildlife Damage Control Agents by county visit [www.ncwildlife.org/Have-A-Problem](http://www.ncwildlife.org/Have-A-Problem). The direct link to agents is <http://www.ncwildlife.org/Trapping/WildlifeDamageControlAgent.aspx>, search by county)
- The NC Pesticide Board has declared two species of moles, eastern mole and hairy-tailed mole, as pests when tunneling in managed turf in residential, commercial and government properties (excluding federal and state parks). This declaration means property owners may use appropriate pesticides to kill these two moles without a depredation permit from the NC Wildlife Resources Commission. (However, the star-nosed mole is considered “non-game” and cannot be harmed.) Pesticides used to control moles must be registered and applied in specific protected bait stations to minimize the hazards to non-target species. A pesticide license is not required to apply non-restricted chemicals; however, a pesticide license is required to buy and use restricted use chemicals. Registered pesticides can be found at [www.kellysolutions.com/nc](http://www.kellysolutions.com/nc) by searching for “eastern mole” or “hairy-tailed mole.” To determine if a chemical is restricted use or non-restricted use click on the chemical’s name.

## Voles

- Voles (meadow and pine voles) are a type of rodent that eat primarily green vegetation and cause damage to orchards and horticultural plantings.
- Voles eat flower bulbs, stems of woody plants, and roots. Careful observation beneath damaged vegetation may reveal a network of tunnels and feces.
- Testing for voles includes the apple-sign test (put shingle/small board over tunnel and after a couple days, put an apple piece in the tunnel – if it’s gone, it’s a vole not a mole)

### **Non-lethal Management Recommendations:**

- Cultural methods include the removal of mulch and thatch.

- Encourage predators (snakes, hawks), or provide physical barriers like cloth cylinders, hardware cloth cages or permatill worked into the soil around the roots or at planting.

#### **Lethal Management Options:**

- Voles may be shot during the act of causing property damage (local ordinances may prohibit the discharge of firearms, please check for restrictions. *Not allowed inside city limits*).
- Voles causing property damage may be trapped by the homeowner under a depredation permit issued by the NC Wildlife Resources Commission. The depredation permit must be obtained prior to setting traps. To obtain a free depredation permit, contact a Wildlife District Biologist or a Wildlife Enforcement Officer in your county. Find a list online at [www.ncwildlife.org/Have-A-Problem](http://www.ncwildlife.org/Have-A-Problem) or call (919) 707-0050.
- Certified Wildlife Damage Control Agents can be hired to help resolve vole issues. These agents can assess damage and issue depredation permits if needed. For A list of Wildlife Damage Control Agents by county visit [www.ncwildlife.org/Have-A-Problem](http://www.ncwildlife.org/Have-A-Problem). The direct link to agents is <http://www.ncwildlife.org/Trapping/WildlifeDamageControlAgent.aspx>, search by county)
- Two types of voles, meadow and pine vole, have been declared pests in NC and registered rodenticides may be used for their control. This declaration means property owners may use appropriate pesticides to kill voles without a depredation permit from the NC Wildlife Resources Commission. These chemicals are very toxic and should be used with caution! Go to [www.kellysolutions.com/nc](http://www.kellysolutions.com/nc) and follow directions provided in mole section above and search for pine vole or meadow vole.

#### **Trapping and Releasing: Moles and Voles**

You may trap and release moles and voles to another property only if you have written permission from the landowner of the property where you want to release the animal. This includes any public properties. You must also have a depredation permit to trap the moles and voles.

#### References:

NC Cooperative Extension Service Publication: AG472-4 Wildlife Damage Control  
NC Wildlife Resources Commission [www.ncwildlife.org](http://www.ncwildlife.org)