VOLE IDENTIFICATION & DAMAGE IN BLUEBERRY FIELDS

Considerations	
• **What Are Voles?**	• **How Do You Identify Vole Damage?**
• **What Are Signs of Vole Activity?**	• **What Could Influence Vole Abundance?**

What Are Voles?

- Townsend's voles (field voles; *Microtus townsendii*) typically reside in moist grassy fields and sedge meadows.
- Townsend's voles are large compared to other small mammals found in blueberry fields. The other small mammals are deer mice, shrews and moles but only voles cause damage to blueberries plants. Usually, the most abundant small mammal in blueberry fields are deer mice.
- A vole's diet consists primarily of grasses, sedges, and forbs. However, these voles will feed extensively on woody shrubs and tree seedlings, particularly during winter months. Voles can cause significant damage in blueberry fields.

Townsend's Vole

Characteristics

- Weight: 45 to 90 g.
- Small ears (hidden by fur).
- Chocolate brown.
- Large: 11 to 14 cm long (not including tail).
- Short tails: 4 to 7 cm (less than ½ body length).
- Run on the ground.

Deer Mouse

Characteristics

- Weight: 15 to 25 g.
- Large ears (stick well above fur).
- Light brown to grey.
- Small body: 7 to 10 cm long (not including tail).
- Tail equal to body length.
- Hop along the ground.

Shrew

Mole

- Shrews and moles are common in fields, but rarely seen.
- Never cause damage to blueberry plants, they eat insects (shrews) or worms (moles).

What Are Signs of Vole Activity?

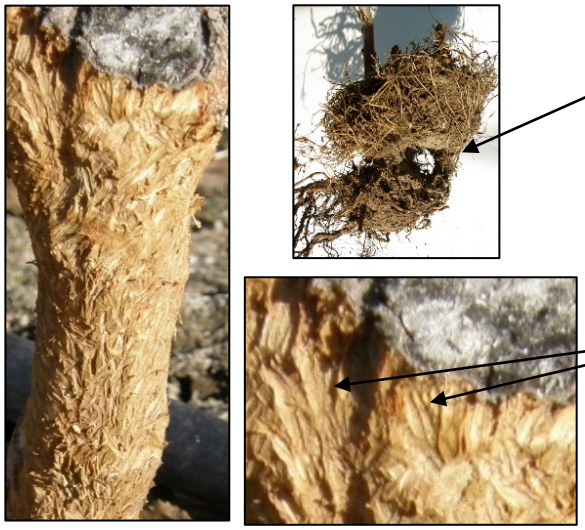
Vole Signs

- Voles leave obvious holes: ~ 5 cm wide.
- Deer mice make holes, but are less than 2.5 cm wide.
- No dirt piles.
- Runways or tunnels lead to holes.
- Runways are easily seen after snow melts.
- Voles prefer grassy fields.
- Highest vole densities occur in fall & winter.
- Damage usually happens in winter.

Mole Mounds

- Moles are common in blueberry fields.
- They consume earthworms.
- They leave large dirt piles.
- They do not eat blueberry bushes nor cause damage.
- One species is listed as Endangered in Canada and Red-listed in B.C.

How Do You Identify Vole Damage?



Vole Damage

- Typically, Townsend's voles burrow along rows of blueberry bushes. They often leave tunnels through the root system. This may be accompanied by minimal girdling damage of the roots.
- They can cause significant damage when they feed on roots and stems of blueberry bushes.
- Characteristic signs:
  - Parallel grooves made by front teeth.
  - Resembles many scratches in different directions.
  - Can be above ground or below ground on blueberry plants.
  - Accompanied by tunnels and runways.

Weevil Damage

- Weevil larvae also feed on and girdle the roots of blueberry plants.
- Weevil girdling may appear like vole girdling; however, weevil girdling lacks the characteristic obvious parallel grooves left by the vole teeth. Weevil tracks may appear as just random grooves.
- Look around plant roots for white larvae and on the leaves for 'notches' left by adult weevils during feeding.
- Remember, vole damage should also be accompanied by obvious runways and tunnels.

What Could Influence Vole Abundance?

Low Vole Abundance

High Vole Abundance

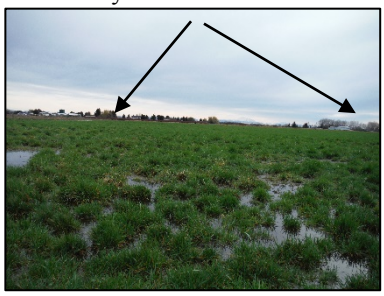
Contributing Factors

- Monitoring has shown that fields with less vegetation have less voles.
- Fields with short vegetation have fewer voles.
- Mowing/cultivating fields may reduce abundance of voles.

High Vole Abundance

- Fields that flood in winter have low vole abundance.
- Fields that are well drained may provide vole habitat throughout the year.

Blueberry fields in back and side.



- Blueberry fields adjacent to optimal grassy habitats may experience higher vole abundance than fields beside poor vole habitat.
- Voles may move into dry blueberry fields if adjacent optimal habitats flood.

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