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From Seedlings to Crowns: These Species Cover It All

BY WENDY M. ARJO

Damage to trees in the Pacific Northwest ecosystems can occur at any point in a tree's development.

Of the three genera of voles, *Microtus* is the largest and most destructive to western forest ecosystems. Voles, like many small rodent species, have the ability to produce numerous litters in a single year and females are mature 30-40 days after they are born. Average litter size is three pups, and females can produce a litter every 21 days. With this type of reproductive capability, it is easy to see why vole populations can rapidly expand in ideal habitats.

Voles can be a large problem especially on small tree farms where the understory is mostly comprised of grasses. Small holes and runways through grassy areas often signify vole presence. Voles feed on young tree roots, usually stripping them and leaving pointed tips. In addition, they will also feed on stems and cause some girdling of seedlings. Circular marks on girdled seedlings are characteristic of vole damage. Barriers around trees and rodenticides have



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Snowshoe hares are widely distributed in the Pacific Northwest and leave large angular toothmarks (45°) in seedlings.



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Pikas are usually found in eastern Washington.

been used to reduce vole damage. However, with rodenticides it is important to first reduce the vegetation so that the rodenticide can reach the runways. The best means of vole control is through habitat modification. Reduction of grasses and vegetation through mowing, plowing or herbicides reduces the attractiveness of an area for voles.

Hares, rabbits and pikas make up the family *Lagomorpha*. Pikas are restricted to the eastern drier areas, generally occurring in rock outcrops. Small piles of grass and other forbs in rockslides are good evidence of pika presence. In the Pacific Northwest, the snowshoe hare is the most widely distributed rabbit species. Hares leave large angular 45-degree toothmarks and sometimes wood chips at the base of damaged trees. Seedlings less than one-quarter inch are preferred; however, in winter, hares will feed on the bark of trees.

Several methods of control have been employed, including Vexar tubing to protect seedlings and hunting, both of which can be costly. Removing hiding cover with herbicides is another potential method to reduce damage; however, this may

affect habitat use by other wildlife. Success at reducing damage has been noted with planting larger seedling stock and with some repellents. The Olympia Field Station is continuing to test and develop additional repellents to reduce hare damage.

The porcupine is the second largest North American rodent (stream beaver is the largest) and has modified dorsal hairs better known as quills. With its muscular tail and long claws, the porcupine is well adapted for climbing trees. Porcupines feed on herbaceous foliage on the ground in the spring and summer, and in fall and winter can be found foraging on trees. Clipped needles, bark chips and quills at the base of trees are prime indicators of porcupine activity. Porcupines strip the bark from trees and leave horizontal teeth marks in addition to clipping stems.



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Porcupines damage small trees. Damage is evident in larger trees as dead crowns appear.

Young pole trees are preferred in the winter and crowns of trees are the most susceptible. Porcupine damage is then evident in the summer when the crowns appear dead. Although fencing does work to protect areas, it is time consuming and expensive. Trapping and hunting are the most reliable methods for reducing damage by porcupines. Further testing of porcupine-specific attractants is being conducted at NWRC. ♦

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