

FOREST FACTS



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COMMON ANIMAL DAMAGE TO YOUR TREES AND SHRUBS

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In Nevada, there are many common animals that damage shrubs and trees. We are concerned with these because they not only cause the plants to die, but cost landowners cash and property value losses. For instance, an average property in the Western US can expect an increase in value of \$2,700 for every mature tree on that particular property. Animals that cause damage to plants are found in both urban and rural settings and can impact a single tree or several in a single occurrence. When referring to the term damage, the term covers any destruction of root, stem, branch or leaf tissues that exceeds the plant's ability to sustain a normal growth pattern. In general, plants are very good at reacting to tissue damage by reallocating energy and resources to those damaged areas so they can or repaired. The most critical kind of damage is the kind that impacts the plant's ability to photosynthesize sugars that drive the plant's growth, as well as damage and disease resilience. While plants can generally handle a pruning that removes up to 20% of the live crown, much more than that causes the plant to shift from a net productive mode to a sustaining or net declining mode. The same can be true of damage to other parts of the plant that cause a similar decline in photosynthetic processes. For example, if an animal causes extensive damage to the roots the plant may not be able to take up soil water, a key ingredient of photosynthesis, so that the plant may suffer a similar inability to produce energy and deal with damages and disease. For a property owner to effectively prevent future damages, the animal causing the damage must be identified. Positively identifying the animal species is the best, although the damages they create are often a great way to identify them without having to see the actual animal.

Table 1. Common Nevada animals that cause plant damage.

Species	Damage(s)
Tree Squirrel	bark stripped from branches w/ ½" remnant bark pieces on the ground
Ground Squirrel	3-inch diameter holes in soil at base of tree, chewed up roots
Vole	Girdle (bark/vascular cambium removed around main stem) soil line to 8", smaller plants, teeth marks 2mm wide
Beaver	Strip bark or chew down trees leaving cone-shaped stumps with ½" wide teeth marks
Porcupine	terminal leader chewed out of tree, bark stripping from high branches during night
Deer	Remove leaves up to 6-feet from ground, rubbing bark off of one side of stem at 4-feet
Rabbits	Girdle 6" to 3 feet up from ground, leaf and small branch removal w/ sharp angled cuts
Insect Defoliators	Removal/browning of portions of leaves/needles in odd shapes or entire leaves except veins
Insect Borers	½" bore holes through trunk/branches, sawdust in hole or on ground, sap excretions
Bark Beetles	BB-sized holes in random patterns in bark, egg galleries under bark
Wood Peckers/ Sapsuckers	BB-sized holes in linear patterns down stems and branches, sap excretions, Nesting cavities 2-3" in diameter
Livestock	>1/2" branches broken off/removed, whole leaves removed

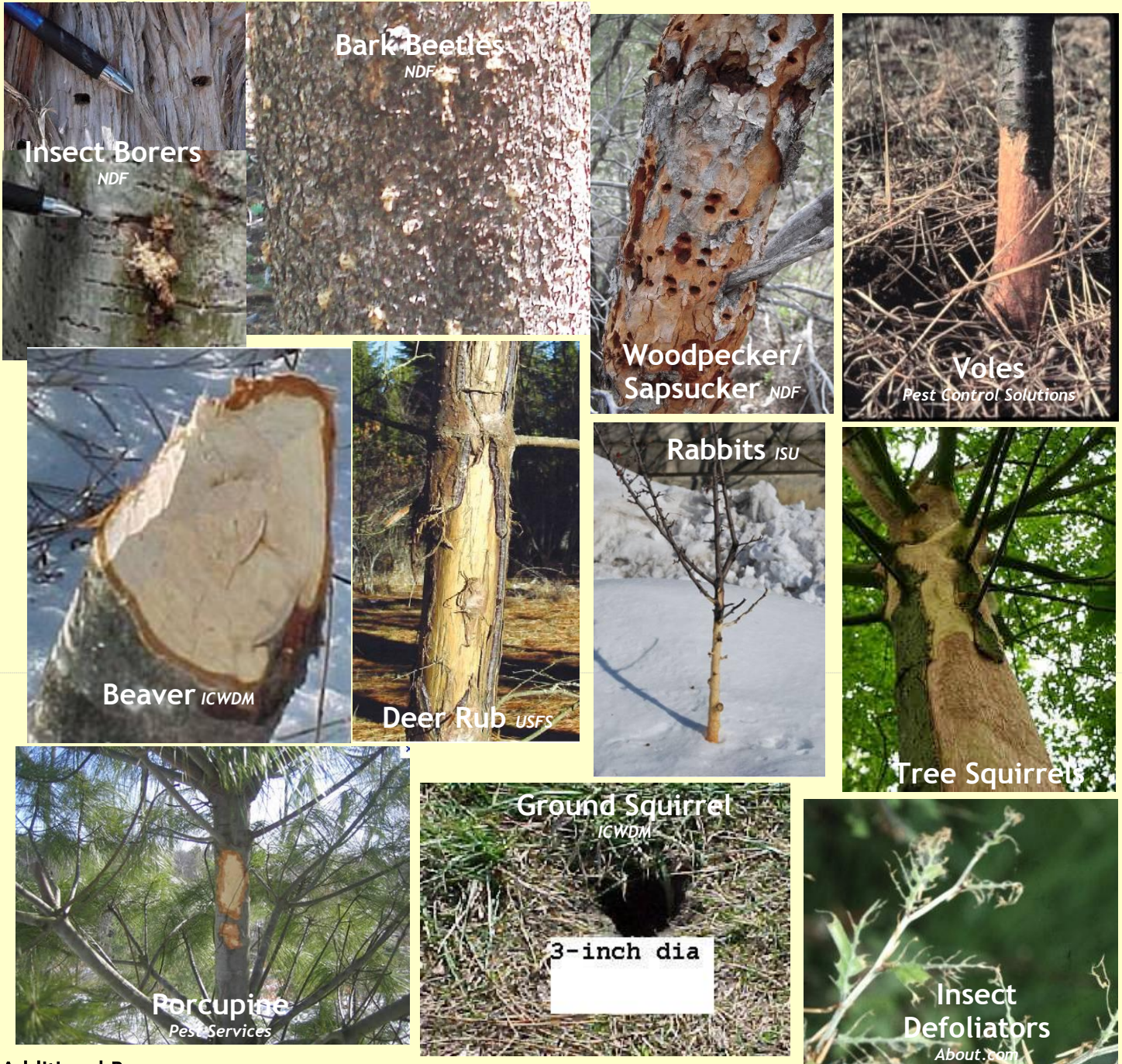
In most cases, a person will be drawn to a plant because of obvious symptoms like dying branches or discolored leaves. It is important to not only recognize the symptom, but also to find the cause of the symptom so it can be treated. Once the offending animal or its damage is identified, a strategy for stopping the damage can be formulated.

One form of passive repellent for many of the animals is the planting of specific plants that are not favored by certain species of animals. For example, arborvitae has a palatable and preferred sap to voles, whereas junipers have a similar shape and look while having a distasteful sap. Another requirement of any plant that is being damaged is making sure the plant has regular and adequate watering since many of the trees defensive and repair mechanisms are dependent on proper hydration. Additional strategies include the use of domestic predators, habitat alteration, anti-climbing devices, trunk guards, toxicants, fumigants, trapping, shooting, exclusionary fencing, as well as visual, sound, smell and taste deterrents. All of these have specific uses based on the specific animal causing the damage.

Table 2. Strategies to control common Nevada animal damage.

Species	Damage(s)
Tree Squirrel	Sheet metal collar around tree 2 feet wide and 6–8 feet off of ground; trapping; shooting; cats; Taste Repellents: Ro-pel®, Capsaicin
Ground Squirrel	Gas cartridge fumigants; trapping; Toxicants: Zinc phosphide, anticoagulants (Chlorophacinone, diphacinone); Fumigants: aluminum phosphide and gas cartridges; Trapping; Shooting; Gas exploding devices
Vole	Wrapping trunk in loose wire mesh (1/4") buried 6" in soil; Repellents: Cayenne pepper in a wax base, thiram, capsaicin; Habitat Alteration: mow grasses and weeds; Toxicants: Zinc phosphide, anticoagulant baits; cats
Beaver	Destruction of dams; Trapping*; shooting*
Porcupine	Trapping; shooting; Repellents: Thiram sprayed or painted on the plants subject to damage; 30 inch sheet metal collar around trunk
Deer	Surround trees w/ 6–8 foot high fencing angled at 30–degrees, wrap trunk w/ loose chicken wire or tree guard; Repellents: bar soap hung in mesh bag from branches; Deer Away®, Hinder®, Thiram
Rabbits	Removal: shooting, box traps; <u>Fencing: chicken wire 36" high cylinder around trunk</u> ; Repellents: dissolve 7lbs of lump rosin in 1 gallon of alcohol or Cayenne pepper in a wax base. Apply the mixture to the trunk and low branches of the trees with a paint brush; Dogs
Insect Defoliators	Removal of infested branches or whole trees; Chemical Control: Merit (imidicloprid), carbaryl, chlorpyrifos or permethrin; proper storage and disposal of infested wood (bury, burn or cover with plastic buried around edges)
Insect Borers	
Bark Beetles	
Wood Peckers	
Sapsuckers	Visual: Faux hawks, owls, snakes, cats; Sound: clapping, cap pistol, gas cannons; Repellents: Tanglefoot®, 4-The-Birds®, and Roost-No-More®; trapping*; shooting*
Livestock	Wrapping trunk in loose wire mesh; surround w/ fence 5–feet high and 5–feet from tree

**state or federal permits likely required*



Additional Resources

Internet Center for Wildlife Damage Management <http://icwdm.org/Default.asp>

US Forest Service – Animal Damage: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5353715.pdf

Protection of Trees from Mammal Damage: [http://www.forestry.gov.uk/pdf/LRU_BPG12.pdf/\\$FILE/LRU_BPG12.pdf](http://www.forestry.gov.uk/pdf/LRU_BPG12.pdf/$FILE/LRU_BPG12.pdf)

Diseases and Insect Pests Field Guide:

http://www.idl.idaho.gov/bureau/ForestAssist/insect_disease/InsectAndDiseaseFieldGuide.pdf

Rabbit damage to tree plantings: <http://www.extension.iastate.edu/Publications/WL47.pdf>

Deer Damage Prevention and Control: http://icwdm.org/handbook/mammals/mam_d25.pdf

Protecting Trees and Shrubs from Deer: https://efotg.sc.egov.usda.gov/references/public/ND/deer_fact_sheet.pdf

Controlling tree squirrels: <http://theurbanrancher.tamu.edu/retiredsite/animals/l1914.pdf>

Coping with Deer: <http://www.extension.umn.edu/projects/yardandgarden/ygbriefs/h462deer-coping.html>

Common insects in Nevada: <http://www.unce.unr.edu/publications/files/ag/2006/sp0608.pdf>