



Home & Garden Pest Management Guide For British Columbia

2019 Edition

Chapter 20 Birds and Mammals Around the Home



Birds and Mammals Around the Home

Some species of wild birds and mammals, as well as domestic animals, such as cattle, horses, goats, dogs and cats can cause serious damage to garden plants. Unlike most insect pests and diseases, birds and mammals may damage a wide variety of food plants and ornamentals, so that it is hard to categorize them under the plants they damage. For example, sweet corn may be damaged by pheasants, crows, starlings, blackbirds, raccoons, and bears, not to mention escaped cows and horses. Some species, such as raccoons, weasel, mink, raptors, crows, ravens and magpies will also attack poultry, lambs and other domestic animals.

In general, removing by trapping or killing individual animals is not the best way to prevent damage. It is recommended that if a mammal or bird is trapped, only release it into the same general location that it was captured. Translocation of wildlife is restricted under the *Wildlife Act* and discouraged due to the risk of spreading invasive species (grey squirrels, rabbits, etc.), potential spread of disease, moving animals that then get into conflict in their new location, and animal welfare concerns. The majority of translocated animals suffer from starvation, intraspecific conflict and predation.

Some species (e.g., robins) cause damage at some times of the year, but are highly beneficial at other times. Damage prevention is often best accomplished by exclusion, for example fencing, netting or screening, or by frightening devices.

Most wildlife species are protected under the *Wildlife Act* and may only be trapped or killed under permit from the Ministry of Environment. There are some exceptions. For example, eastern cottontails, European rabbits, grey squirrels, starlings, and domestic pigeons are exempt from protection and may be humanely killed without a permit on private land. Some animals may only be trapped or killed for the specific purpose of protecting property, including the woodrat, pocket gopher, skunk, raccoon, field mouse, coast mole (not Townsend's mole), yellow-bellied marmot, crows and magpies.

Legislation can get a bit complicated as to what a landowner can do with which species. More information on hunting and trapping regulations may be obtained from the [B.C. Ministry of Environment](#).

More information on Species at Risk can also be found on the [B.C. Ministry of Environment Website](#).



Prevention & Management of Mammal Damage to Plants & Homes

Bats

During warmer months, bats may take up residence in attics, walls and chimneys of buildings or other dark, warm places. Bats may hibernate in buildings with the appropriate conditions as well, and thus may be present at any time of the year. The smell of bats and their droppings can be offensive, although only larger aggregations of bats will produce enough waste to produce odours. If a conflict does arise make sure bats are the cause. Bat droppings are usually the size of a grain of rice, crumble easily between the fingers, and contain shiny, undigested bits of insects. Mice droppings are much harder and more fibrous. Bat droppings may contain *Histoplasma capsulatum* fungal spores, which when inhaled can result in a lung infection referred to as "histoplasmosis." Precautions should be followed when cleaning or removing large accumulations of bat droppings.

Bats are usually harmless, and they eat many noxious insects. A little brown bat (*Myotis Lucifugus*) can eat up to 1000 mosquito sized insects per hour!

Bats are protected under the *Wildlife Act and Regulations*. Many species of bats are of conservation concern, including two that are listed under the *Species at Risk Act*. Permits to kill bats are unlikely to be issued unless rabies (very rare in bats) has been detected in the area.

Management:

Bat-proofing buildings to prevent entry is the best means of control. All louvers, vents or other openings larger than 1 cm, through which bats might crawl, should be screened off with 6 mm mesh hardware cloth. This should be done at a time of year when there are no young bats that will get trapped inside. Thoroughly check an area before you close it off. Never trap bats inside. This is needlessly cruel and could cause a serious odour problem. Young, non-flying bats are most likely to be present from spring through early summer. If this is not successful, contact a licensed pest control operator or wildlife damage control company.

To keep the benefits of having bats around, but remove them from your building, close off all entry points but one. With the remaining entry / exit point, install a simple one way barrier that allows bats to get out, but will prevent them from getting in. Take care to do this only after the young are sure to be able to fly.

Bats almost never bite people unless handled, but care should be taken to avoid bites. Rabies, although rare, is always a possibility. If you are scratched or bitten by a bat, seek medical attention immediately.

To learn more about bats and how to help with their conservation, visit the website [Community Bat Programs of BC](#).

American Beaver

(*Castor canadensis*)

Beavers are the largest living rodent in North America. They construct dams for shelters and protection against predators. Beaver dams can create habitat for several other animals and plants. For example, migratory waterbirds use beaver ponds as nesting areas and rest stops while migrating.

Unfortunately, beavers can become a problem to the home owner if their eating habits or dam building activity floods or causes damage to the property.

Management:

Choose plants that beaver's do not prefer as food, such as Sitka spruce, elderberry, cascara, osoberry (Indian plum), ninebark and twinberry. Densely plant aspen, cottonwood, willow, spirea, and red-twig dogwood; once their roots are well established, the upper parts of the plants often resprout after being eaten. Plant trees and shrubs away from beaver trails to reduce losses. Although beavers do not prefer the above plants as food, they may use them as construction material.

Install barriers to individual or groups of trees using 3 foot high, galvanized welded wire fencing painted green so they are less noticeable. Larger areas that border beaver habitat can be protected by a 4-foot fence, making sure to keep the bottom of the fence flush to the ground, or include an 18-inch wide skirt on the beaver side of the fence, to prevent beavers from entering underneath.

If flooding is a problem, controlling the height of water behind the dam by installing a flow device at the preferred depth, upstream and down of the dam. This can lower the rise in the water level by using one or more plastic pipes that continually drains

the pond area. In order for this to work properly, there must be at least 3 feet of water in the pond area for the beaver to stay. When a beaver plugs a culvert to build a dam, a flood can result. Prevent this by installing a V-shaped, semicircular, or trapezoidal fences of woven wire mesh.

Beavers can be infected with the bacterial disease **tularemia**. This disease is fatal to animals and is transmitted by ticks, biting flies and contaminated water. Tularemia may be transmitted to humans via contaminated drinking water, eat undercooked, infected meat, if an open cut comes into contact with an infected beaver, a tick bite, a biting fly, or by inhaling dust from soil contaminated with the bacteria. Rabbits and other rodents are also susceptible. Tularemia symptoms can be serious, and include a high temperature, headache, body ache, nausea, sweats, and can be confused with the flu. The disease can be treated with antibiotics.

Beavers defecate in water, and their droppings may cause a flu-like infection when contaminated water is ingested. The name for this illness is “**giardiasis**”, but another popular term, “beaver fever,” is also used.

It is an offense for anyone, other than a licensed trapper, to disturb, molest or destroy a beaver house, den or dam.

Live translocation of a beaver is not only costly but research shows that beavers seldom survive relocation. For permits to trap or advice on live-trapping methods, consult the Ministry of Environment website or contact a licensed trapper.

Black Bears

(*Ursus americanus*)

With human populations and bear habitat encroaching on each other, bear encounters have increased. Although bears usually avoid people, confrontations can occur. The fall becomes a critical time for black bears as they prepare for winter. Bears may forage up to 20 hours a day during fall. Keen senses combined with curiosity make bears skilled scavengers. Make sure the bear does not have access to trash, pet food, and bird feeders.

If you live in areas where black bears have been seen, use the following management strategies to reduce conflicts:

- Do not feed the bear; a wild-bear can become food conditioned and continue coming back onto human property.
- Manage garbage: if a pick-up service is used, put the garbage out that morning, use locking bins or tightly closing cans, disinfect garbage cans regularly to reduce odours, keep meat and fish to be disposed of in the freezer until they can be disposed of properly. Commercially available bear-proof garbage bins are available.
- Remove attractants: remove bird feeders or bring them in at night, harvest fruit from trees regularly, do not feed pets outside, clean BBQ grill each time it is used.

For more information on reduction of bear conflicts visit the [Wild Safe BC](#) website or the [Bear Smart](#) website (Ministry of Environment).

Deer

Two species of deer are found in British Columbia: the mule deer (*Odocoileus hemionus*) (including the black-tailed deer), found throughout most of the province, and the white-tailed deer (*Odocoileus virginianus*), which is abundant in the Southern Interior valleys. Both species can cause serious damage to a variety of trees (especially fruit trees), shrubs, vegetables and flowers. In spring and summer, most damage is done to new, leafy growth. In winter, buds and twigs may be eaten and bark stripped off trunks and branches of trees.

Management:

Fencing is the best solution if there is chronic deer damage. Woven wire fences should be at least 2.4 m high to keep deer out. Solid board or panel fences need be only about 1.5 m high, because deer are much less likely to jump over them. A properly designed and maintained electric fence can be very effective at preventing deer from entering an enclosed area as small as a vegetable garden or an area as large as a commercial orchard. An electric fence is not a physical barrier to entry. It acts as a psychological barrier that some deer will continually test. Mini-barriers and netting can be used to protect individual plants or trees. They are less expensive and less obtrusive than full fences, and can adequately protect the plant from antler rubbing and gnawing. Dogs can also help to keep deer away. Motion activated scare devices have proven to be effective when used in conjunction with bright lights, sound or bursts of water.

Because deer fencing is not always practical, landscaping with deer resistant plants can provide an alternative preventative practice (see list of deer-resistant plants). Hanging mesh bags of human hair or bars of soap from trees may work to reduce damage, though results are not consistent. These should be hung about a meter apart on the plants being damaged. The hair bags should be replaced monthly.

Animal repellent products containing ammonia, denatonium benzoate or putrescent whole egg solids are effective deer repellents. Some repellents are not for use on edible plants and must be reapplied after rain. Dormant trees and shrubs should be dusted when moist, so that the repellent adheres to leaves and twigs, to discourage browsing. Thiram (Skoot), also used as a rabbit repellent, is also effective against deer. Repellents may not work if deer are numerous or very hungry.

The following list of deer-resistant plants is a general guide. Deer sometimes will browse the plants listed and sometimes will avoid plants not listed. Note: A few vigorous native plant species are included in the table.



Deer-Resistant Plants

This list has been compiled from different sources. There is no guarantee that the plants on this list are 100% deer proof. Bolded plants have been consistently resistant.

Deciduous Trees

- Ash, *Fraxinus* spp.
- Bamboo (various species)
- Birch, *Betula* spp.
- Box elder, *Acer negundo*
- California Buckeye, *Aesculus californica*
- Catalpa, *Catalpa bignonioides*
- English hawthorn, *Crataegus* spp.
- Fig, *Ficus corico*
- Japanese snowbell, *Styrax japonicas*
- Lilac, *Syringa* spp.
- Little-leaf linden, *Tilia cordata*
- Magnolia, *Magnolia* spp.
- Maidenhair tree *Ginko biloba*
- Maple, *Acer* spp.
- Mulberry, *Morus* spp.
- Plume cedar, *Cryptomeria* spp.
- Silk tree, *Albisia julibrissin*
- Smoke tree, *Coptinus coggygria*
- Sumac, *Rhus* spp.
- Walnut, *Juglans* spp.
- Willow, *Salix* spp.

Evergreen Trees

- Cedar, *Cedrus* spp.
- Cypress (Arizona), *Cupressus arizonica*
- Cypress (Leylandii) *Cupressus leylandii*
- Douglas-fir, *Pseudotsuga menziesii*
- *Eucalyptus* spp.
- False cypress, *Chamaecyparis* spp.
- Fir, *Abies* spp.
- Flannel bush, *Fremontodendron* spp.
- Hemlock, *Tsuga* spp.
- Juniper, *Juniperus* spp.
- Monkey puzzle tree, *Araucaria araucana*
- Pine, *Pinus* spp.
- Rhodo, *Rhododendron* spp.
- Spruce, *Picea* spp.
- Western red-cedar, *Thuja plicato*

Deciduous Shrubs

- Barberry, *Berberis* spp.
- Chokecherry, *Prunus virginiana*
- Cotoneaster, *Cotoneaster* spp.
- Elderberry, *Sambucus* spp.
- Golden currant, *Ribes aureum*
- Hazelnut (filbert), *Corylus* spp.
- Kousa dogwood, *Cornus kousa*
- Lilac, *Syringa* spp.
- Lily-of-the-valley-bush, *Pieris japonica*
- Mexican mock orange, *Choisya ternata*
- Potentilla, *Potentilla fruticosa*
- Quince, Japanese flowering, *Chaenomeles japonica*
- Smokebush, *Continus* spp.
- Snowberry, *Symphoricarpos* spp.
- Spirea, *Spiraea* spp.
- Red-flowering currant, *Ribes sanguineum*
- Red-twig dogwood, *Cornus sericea (stolonifera)*
- Serviceberry, *Amelanchier* spp.
- Wild gooseberry, *Ribes* spp.
- Wild rose, *Rosa* spp.
- Winter jasmine, *Jasminum nudiflorum*

Evergreen Shrubs

- Boxwood, *Buxus sempervirens*
- Dwarf mugho pine, *Pinus mugo mugo*
- Evergreen barberry, *Berberis* spp.
- Evergreen huckleberry, *Vaccinium ovarum*
- Holly, *Ilex* spp.
- Juniper, *Juniperus* spp.
- Mexican mock orange, *Choisya* spp.
- Mountain-laurel, *Kalmia latifolia*
- Oregon-boxwood, *Pachystima myrsinites*
- Oregon-grape, *Mahonia aquifolium*
- Rabbitbrush, *Chrysothamnus* spp.
- Rhododendron, *Rhododendron* spp.
- Sagebrush, *Artemisia tridentata*
- Salal, *Gaultheria shallon*
- Silk-tassel bush, *Garrya elliptica*
- Silverberry, *Elaeagnas pungens*
- Wax-myrtle, *Myrica californica*
- Yew, *Taxus* spp.

Bulbs

- Crocus, *Crocus* spp.
- Daffodils, *Narcissus* spp.
- Fritillary, *Fritillaria* spp.
- Garden corn lily, *Ixia* spp.
- Grape hyacinth, *Muscari* spp.
- Hyacinth, *Hyacinth* spp.
- Snowdrops, *Galanthus* spp.
- Trillium, *Trillium* spp.

Garden Herbs

- Creeping John's wort, *Hypericum calycinum*
- Garden chive, *Allium schoenoprasum*
- Garlic chive, *Allium tuberosum*
- Hops, *Humulus* spp.
- Hyssop, *Hyssopsis officinalis*
- Lavender, *Lavandula* spp.
- Mints, *Mentha* spp.
- Oregano, *Origanum vulgare*
- Parsley, *Petroselinum* spp.
- Rosemary, *Hyssopus officinalis*
- Rue, *Ruta graveolens*
- Russian sage, *Perovskia atriplicifolia*
- Sage, *Salvia* spp.
- Santolina, *Santolina* spp.
- Sweet marjoram, *Oviganum majorana*
- Tarragon, *Artemisia* spp.
- Thyme, *Thymus* spp.

Perennial Flowers

- African Daisy, *Arctotis stoechadifolia*
- Baby's breath, *Gypsophila paniculata*
- Bee Balm, *Monarda didyma*
- Black-eyed Susan, *Rudbeckia* spp.
- Blackberry (trailing), *Rubus ursinus*
- Blanket flower, *Galliardia aristata*
- Bleeding heart, *Dicentra* spp.
- Blue-eyed grass, *Sisyrinchium* spp.
- Blue star creeper, *Laurentia fluviatilis*
- Bottlebrushes, *Callistemon* spp.
- Bunchberry, *Cornus unalaschkensis (canadensis)*
- Cactus, *Cactaceae* spp.
- Cala lily, *Zantedeschia* spp.
- California fuchsia, *Zauschneria* spp.
- Carpet bugle, *Ajuga reptans*
- Catmint, *Nepeta* spp.

- Chain ferns, *Woodwardia* spp.
- Clematis, *Clematis* spp.
- Coneflower, *Echinacea purpurea*
- Coreopsis, *Coreopsis* spp.
- Cornflower, *Centaurea* spp.
- Daisy, *Chrysanthemum maximum*
- Daphne, *Daphne* spp.
- Daylily, *Hemerocallis* spp.
- Dwarf coyote brush, *Baccharis pitulans*
- Evening primrose, *Oenothera* spp.
- Fall sedum, *Sedum spectabile*
- Fescues/grasses, *Festuca* spp.
- Flossflower, *Ageratum* spp.
- Forget-me-not, *Myosotis* spp.
- Foxgloves, *Digitalis* spp.
- Gayfeather, *Liatris spicata*
- Glove thistle, *Echinops exaltus*
- Heather, *Erica* spp.
- Hens and Chicks, *Sempervivum* spp.
- Hellebore, *Helleborus* spp.
- Hollyhock, *Alcea rosea*
- Honeysuckle, *Lonicera* spp.
- Hosta, *Hosta* spp.
- Iris, *Iris* spp.
- Kinnikinnik, *Arctostaphylos uva-ursi*
- Lavender, *Lavandula* spp.
- Lily of the Nile, *Agapanthus* spp.
- Lithodora, *Lithodora diffusa*
- Leopard's bane daisy, *Doronicum* spp.
- Lobelia, *Lobelia cardinalis*
- Lungwort, *Pulmonaria* spp.
- Lupine, *Lupinus* spp.
- Marguerite, *Anthemis tinctoria*
- Monkey flower, *Mimulus* spp.
- Monkshood, *Aconitum* spp.
- Onions (flowering), *Allium* spp.
- Oregon-grape, *Mahonia* spp.
- Oxalis (wood sorrel), *Oxalis oregona*
- Pampas grasses, *Cortaderia* spp.
- Peony, *Paeonia* spp.
- Phlox, *Phlox subulata*
- Poker plant, *Kniphofia* spp.
- Poppy, *Papaver* spp.
- Raspberry (creeping) *Rubus pedatus*
- Red hot poker, *Kniphofia uvaria*
- Rhubarb, *Rheum* spp.
- Rockcress, *Arabis* spp.
- Rosemary, *Rosmarinus officinalis*

- Russian sage, *Perouskia atriplicifolia*
- Sea-holly, *Eryngium amethystinum*
- Sea-pink, *Armeria maritima*
- Seathrift, *Armeria maritima*
- Snapdragon, *Antirrhinum majus*
- Snow-in-summer, *Cerastium tomentosum*
- Solomon's seal, *Polygonatum* spp.
- Spurge, *Euphorbia* spp.
- Sunrose, *Helianthemum* spp.
- Sword ferns, *Polystichum* spp.
- Trailing lantana, *Lantana montevidensis*
- Wallflower, *Erysimum* spp.
- Wild buckwheat, *Eriogonum* spp.
- Wild strawberry, *Fragaria* spp.
- Wintergreen, *Gaultheria procumbens*
- Wire grass, *Juncus tenuis*
- Wisteria, *Wisteria* spp.
- Yarrow, *Achillea* spp.
- Yucca, Spanish bayonet, *Yucca* spp.

Annual Flowers

- Ageratum, *Ageratum houstonianum*
- Bachelor buttons, *Centaurea cyanus*
- California poppy, *Eschscholtzia californica*
- Clarkis, *Clarkia* spp.
- Cosmos, *Cosmos bipinnatus*
- Dusty miller, *Senecio cineraria*
- English marigold, *Calendula officinalis*
- Geranium, *Pelargonium* spp.
- Lamb's ear, *Stachys byzantina*
- Larkspur, *Consolida ambigua*
- Marigolds, *Tagetes* spp.
- Sunflower, *Helianthus annuus*
- Sweet alyssum, *Lobularia maritima*
- Zinnia, *Zinnia* spp.

Sources include:

Master Gardeners Association of BC,
 (www.mgabc.org/content/deer-resistant-plants)
 Link, Russell, "Living with Wildlife in the Pacific Northwest" (wdfw.wa.gov/wlm/living.htm)

Field Mice (voles)

Field mice, also called voles (not to be confused with moles), include the Townsend's vole (*Microtus townsendii*) on the South Coast and the meadow vole (*Microtus pennsylvanicus*) and montane vole (*Microtus montanus*) in the Southern Interior. Voles are 13 to 23 cm long, including the tail. Compared to house mice, they have shorter ears (barely projecting above the fur) and short, furry tails about 1/3 to 1/2 the length of the body, unlike the longer, naked tails of house mice. Field mice are mainly pests of agricultural crops, but sometimes invade gardens next to farms or uncultivated fields. Their numbers fluctuate widely; in some years they can be abundant. They eat almost any kind of plant matter; including grass, root vegetables such as beets and carrots, plant roots, and the bark of trees and shrubs in winter. Field mice can girdle the roots, crown and stems of trees and shrubs during the winter, especially if there is grass or snow cover around the plants. They build underground burrows, and the small burrow openings are a sure sign of field mice activity.

Management:

The best control is frequent mowing or cultivation of vegetation within or next to garden areas. Field mice prefer the cover of tall grasses, and eliminating this cover keeps their numbers down. Trapping is not practical in commercial crops, but in home gardens, ordinary mousetraps baited with peanut butter, apple slices, or other fruit may help to reduce numbers. A cat is also effective at keeping mice out of a small garden. Use barriers to protect small trees and plants and encourage natural predators by installing perches and nest platforms for owls and hawks.

Rodenticides intended for house mice may not be effective for field mice. When purchasing a rodenticide, be sure to read the label to see which rodents it can be used for, and whether it is for indoor or outdoor use. New regulations require that all domestic (home and garden) rodenticides must always be used in bait stations.

Moles (Lower Mainland only)

Both coast moles (*Scapanus orarius*) and Townsend's moles (*Scapanus townsendii*), are small, dark grey, burrowing mammals with large, scoop-like front feet, ranging from about 15 to 22 cm in length. Their food is about 70% earthworms and 30% insects, spiders and slugs. They make mounds and tunnels in lawns, and can undermine new seedlings of vegetables and flowers and damage the roots of garden plants by their burrowing activities. Coast moles are common throughout the Lower Mainland. **Townsend's mole, which is found in the Sumas Prairie from Huntingdon to Sumas Mountain, is on the provincial "red list" as a threatened species and should not be killed.** Townsend's moles are larger, 18-24 cm in length and their mounds are larger, 18 cm high x 44 cm wide, with 5.2 cm diameter tunnels. Moles fitting this description should be reported to the Ministry of Environment in Surrey.

Management:

In lawns, mounds can be raked down and over-seeded quickly to minimize damage. However, one resident mole can continue building mounds at the rate of three or four per day and destroy a lawn over a period of a few weeks so trapping may be advisable. If

damage is extensive, trapping can be done throughout the year whenever moles are active. Set traps only in currently used runways. These can be identified by stamping down the runways and checking to see which ones are re-established. Various traps are available; those most often used are the “mole buster”, “scissors” or “harpoon” types. The Giant Destroyer can be used to kill moles in their burrows. It produces toxic sulphur gas. Follow label instructions carefully, as the gas can be harmful if inhaled.

Pocket Gophers

Pocket Gophers can often be mistaken for squirrels or moles, but being aware of a few distinguishing characteristics will help the home owner identify the pocket gopher. Pocket gophers have small, clearly visible eyes with a rounded muzzle. The orange, chisel-like pair of upper and lower incisors are very apparent and their mounds are crescent or heart-shaped. Their fur is short and can range in color from a rich brown, yellowish brown, or grayish.

The only species in B.C. is the Northern pocket gopher (*Thomomys talpoides*), but there are several subspecies. **The subspecies *Thomomys talpoides segregatus* is found only near the U.S. border near Creston and is red-listed (endangered).**

Pocket gophers can cause problems for homeowners, by leaving mounds in lawns and pastures. Pocket gophers only eat vegetation such as roots, bulbs, and other fleshy parts of the plant that they come across while digging underground. In areas with a snowpack, gophers may gnaw on the bark of trees or shrubs. Pocket gophers are active year round.

Management:

A barrier can be used to exclude pocket gophers from tunneling into an area. Underground screening is used in flowerbeds, secured on the sides and bottom. Wire baskets may protect the roots of a tree or shrub. Use a double layer of light-gauge wire, making sure to leave enough room to allow for root development before the wire rots away. An underground barrier can be used for vegetable gardens. To add to the life of the barrier, spray it with a rustproof coating. Protect underground sprinkler lines from chewing by surrounding them with 6 to 8 inches of coarse gravel 1 inch or more in diameter. Giant Destroyer, which is sulphur based, is registered for use on Pocket Gophers.

Encourage predators such as owls, raptors, snakes, coyotes, weasels, and skunks. If damage is extensive, trapping can be done throughout the year whenever pocket gophers are active.

Rabbits

The eastern cottontail (*Sylvilagus floridanus*), or rabbit as it is commonly called, is about 40-45 cm long and weighs 1 to 2 kg. It is greyish-brown with a cinnamon patch on the back of the neck, and a white underside of the tail (hence cottontail). Eastern cottontails are common in the Lower Fraser Valley and on Vancouver Island.

The domestic rabbit (*Oryctolagus cuniculus*) is another introduced species. Also known as the European rabbit or Belgian hare, the domestic rabbit is larger than other rabbits, measuring 20 to 30 inches in length, and has black, white, brown, or multicoloured fur. Feral populations exist on Sidney, James and

Triangle Islands, with localized populations in some communities.

Rabbits eat many kinds of garden vegetables and flowers; few garden plants are immune to rabbit damage, although there are some rabbit-resistant plants. Shrubs and trees may be damaged or even killed by chewing on bark during the winter.



Feral rabbits

Management:

Once rabbits become used to feeding in an area, controls may become less effective. Therefore, be sure to address the problem as soon as damage is seen. Fencing may be necessary for severe rabbit problems. A fence of 60 cm high chicken wire (2.5 cm mesh or smaller), fastened to the ground or slightly buried, will keep rabbits out.

Valuable trees may be protected by cylinders of 6 mm mesh hardware cloth or hard plastic tree-guards, which will also prevent mouse damage. Remove cover such as brush piles, weed patches, rock piles and other debris.

Thiram (Skoot) is an effective rabbit repellent. It should be sprayed or painted on trunks and twigs of dormant fruit trees and ornamental trees and shrubs to prevent damage. Do not use thiram-based repellents on edible crops. Follow the label directions for any repellent used.

A final alternative is to trap the rabbit. Only use trapping as a last option because it presents many problems for both the animals and the trapper. Some communities are setting up programs to humanely deal with feral rabbit populations.

Raccoons

(Procyon lotor)

The raccoon is a dog-sized (6-16 kg) carnivore with predominantly grey fur, a black mask, and black rings on its rather long tail. It is found on the South Coast, in valleys of the Southern Interior, and prevalent throughout the Thompson/Okanagan.

Raccoons, although nocturnal, are common in residential areas and frequently raid garbage cans or tear up newly-laid sod in search of food such as grubs and worms. They often climb trees to raid birds' nests and occasionally enter attics and chimneys. Garden crops, especially sweet corn, are often damaged while they are foraging for food. Poultry may be killed and altercations with cats and dogs may result in severe injuries or death.

Management:

Restrict access to potential denning sites under porches and buildings, by using heavy wire screening. Metal garbage cans with tight-fitting lids can reduce raiding of garbage. Raccoons are omnivorous and will eat almost anything. Don't leave pet food dishes with leftover food outside overnight, and regularly clean up bird food containers. A simple one-wire or two-wire electric fence can be very effective at keeping raccoons out of gardens and lawns. To protect fruit trees, poles, and birdhouses, install a metal or heavy plastic barrier which will keep the raccoon from climbing.

Raccoons are considered fur-bearing game animals under the Wildlife Act, and may not be captured or killed without a permit, hunting license or trapping license.

Raccoons may be trapped on private property by the property owner if necessary to protect private property without a license or permit.

Rats, Wood Rats and Mice

Two types of rats, the roof (black) rat (*Rattus rattus*) and the Norway (brown) rat (*Rattus norvegicus*), infest buildings on the Coast. The roof rat is a more recent invader of Interior BC and is now spreading in many areas of the Southern Interior including the Okanagan. Both are long-tailed rodents about 40 cm long (including the tail). The roof rat is slender; it is usually black rather than brown, and has a tail longer than the body and big ears. The Norway rat has a tail shorter than the body and smaller ears.

The bushy-tailed woodrat (*Neotoma cinerea*), (also called pack rat), found throughout mainland B.C., is a native rodent similar in size and shape to the Norway rat. However, it has larger eyes and ears, softer fur, and a hairy tail.

Wood rats normally live in rockslides and other broken terrain, but may invade cabins, storage sheds and other infrequently used buildings. They often carry off jewelry, kitchen utensils and other shiny objects, hence the name “pack rat.” They can cause considerable damage by gnawing buildings or by eating stored food products.

The house mouse (*Mus musculus*), found throughout almost all of B.C., is about half the length of a full-grown rat, and is distinguished from a young rat by its smaller head and feet.

The deer mouse (*Maniculatus* spp.) ranges in colour from grey to reddish-brown. It has larger ears than the house mouse, a white belly and white-sided tail. Although more common in woodlands, the deer mouse can also occur in urban areas. The deer mouse can transmit hantavirus in British Columbia.

Hantavirus: This virus makes its way into human lungs through exposure to infected feces (droppings), urine and saliva of the deer mouse. The deer mouse is the only known carrier in Canada, although the virus has been found in other rodents in the United States. Hantavirus can lead to severe respiratory infection or death.

Rats and mice are rarely seen unless very numerous, but can be detected by the following signs:

- Droppings (cylindrical and about 5-20 mm long with rounded ends in rats; about 3 mm long with pointed ends in mice)
- Chewed food containers such as cereal boxes or plastic bags.
- Sounds (gnawing, squeaking, scampering)
- Tracks on dusty surfaces or in snow
- Evidence of burrows or holes
- Runways and greasy rub marks or chew marks along walls and pipes

Management:

Hantavirus: Take safety precautions to avoid Hantavirus. Guidelines for safely cleaning mouse-infested areas are described on the Healthlink BC website: [Hantavirus Pulmonary Syndrome](#). Also see: [Getting rid of rodents](#) (Healthlink BC).

Rodent-proofing buildings and eliminating sources of food, water and shelter for rodents are the best means of controlling rats

and mice. Trapping and poisoning will provide only temporary relief. Buildings can be made rodent-proof by installing tight-fitting doors and windows, and wire screen over basement windows and vents. Sheet metal kick-plates on wooden doors will stop rodents from gnawing through.

Removing access to food, water and shelter is essential. Keep garbage in metal cans with tight-fitting lids. Don't leave food, including pet food and bird-seed in open containers. In compost boxes, cover vegetable scraps and peels with lime or soil. In a garage or shed, store all edible material 30 to 45 cm off the ground, away from walls. Eliminate water sources such as leaky taps or open pools. Get rid of piles of lumber or discarded material and clear vegetation and grass from around foundations so mice will not build nests there. Stack firewood 20 to 30 cm off the ground and away from walls.

Trapping is useful when only a few rodents are present. Traps should be baited with meat, bacon or fish for rats, and with cheese, cake or peanut butter for mice. Numerous rodenticides are available. Some "Domestic" labeled products are available for use by the general public; more hazardous rodenticides may only be used by a licensed pest control operator, who should be contacted if the rodent problem cannot be solved within a few weeks.

Wood rats are considered wildlife under the Wildlife Act but property owners or occupants are allowed to trap and kill them to protect private property. Wood rats are fairly easy to trap. Either a standard rat-trap (snap trap) or a live trap can be effective. Appropriate baits include nut-meats, bacon rind, peanut butter and oatmeal, and dried fruit. There are no poisons registered for wood rat control.

Skunks

Two kinds of skunks are found in B.C. The striped skunk (*Mephitis mephitis*), found over most of the province, is black with a broad white stripe on each side. It is about the size of a housecat, up to 75 cm long and 3.5 kg in weight. The western spotted skunk (*Spilogale gracilis*), confined to the Lower Mainland, is black with a pattern of white spots, lines and blobs on the back and sides. It is smaller and shorter-tailed, up to 43 cm overall. Striped skunks, in particular, often take up residence under buildings. Skunks can damage lawns, rolling and shredding the sod in search of food such as grubs and worms.

Management:

Skunks are nomadic, and concerns about them housing under sheds, porches, and buildings are usually resolved quickly by skunks moving on. The best way to prevent a conflict with a skunk is to modify some of your homes surroundings. Similar to dealing with raccoons, do not leave pet food, or other food outdoors, regularly clean up bird food containers and secure compost containers.

Vents or other possible entrances should be closed with boards or heavy wire screening to prevent denning. Do not close up the openings if a skunk may be trapped inside. To prevent skunks from digging under a building or concrete, consider installing barriers.

To prevent digging, lay 1-inch mesh chicken wire, securing it with stakes or something heavy. Sprinkling cayenne pepper or a granular repellent over small areas during dry weather can also work.

Repellents registered for skunk control include: Scentagone animal repellent, and Chemfree Critter Ridder.

Live-trapping and removal are possible without causing release of scent. Skunks are considered fur-bearing animals under the Wildlife Act. For permits to trap or shoot skunks, and advice on live-trapping methods, contact the nearest Ministry of Environment office, or contact a pest control company.

Encourage predators, landscape with tall perennial grasses and shrubs, and harass by digging up burrow entrances or packing entrances with rocks.

Yellow-bellied marmots may be killed or trapped without a permit on private property by the property owner or occupier to protect their property. No rodenticides are registered for marmot control. Live-trapping, using apples, carrots or lettuce as bait, can be effective.

Yellow-bellied Marmot

(Marmota flaviventris)

The yellow-bellied marmot, a large burrowing member of the squirrel family, is found in dry interior valleys north to Williams Lake. It is stout, with a short bushy tail, and measures 50 to 65 cm in length and often 5 kg or more in weight. The fur is mainly chestnut-brown above and buff-yellow below and on the side of the neck. It usually burrows in rocky areas, road embankments and such places. All kinds of green vegetation are eaten, and considerable damage can be done to vegetables, alfalfa and grasses.

Management:

Exclusion by wire fencing is possible, but fencing should be 90 to 120 cm high, and extend 25 to 30 cm below ground to prevent burrowing. An electric “hot shot wire,” placed 10 to 13 cm outside the fence and the same distance above ground, will discourage climbing and burrowing. In some cases, a hot shot wire alone may keep marmots out of a garden.



Prevention & Management of Bird Damage to Plants & Homes

Crows

Two species of crows are found in British Columbia: the Northwestern crow (*Corvus caurinus*), found west of the Coast Range and Cascades, and the American crow (*Corvus brachyrhynchos*), found in the rest of the province. Northwestern crows are slightly smaller than American crows and emit a different, more nasal caw, but otherwise the two are very similar in appearance and habits.

Crows damage a wide variety of crops. Many kinds of fruit are vulnerable, and backyard cherry, plum, pear, apple and nut trees are sometimes stripped. The crows use the trees for roosting while foraging for field mice and then when the fruit starts to ripen, they sometimes turn their attention to the fruit. Newly sprouted corn plants are often pulled up, and crows can devastate a corn patch in a short time. Similar problems can occur with pumpkins, cucumbers and other large-seeded vegetables. Crows can be very noisy and aggressive when nesting, sometimes dive-bombing people and pets, but such problems are usually short-lived.

Management:

Preventing damage by crows can be difficult; frightening devices are often ineffective. Plastic netting with a small mesh size (preferably no more than 2 x 2 cm), though awkward to install over trees, may be the only way to prevent damage.

Suspending bright-coloured plastic strips, shiny pie plates, or balloons, or setting up scarecrows may be effective. Crows may be killed without a permit, and can be shot in rural areas unless there are local restrictions on the discharge of firearms.

House Finch

(*Carpodacus mexicanus*)

The house finch is a sparrow-like bird about the size of a house sparrow. Females and young are brown above and white with heavy brown streaking below; adult males are bright orange-red on the breast, rump and top of head. In late summer, they form small flocks.

House finches are protected songbirds (under the federal *Migratory Birds Convention Act*) that feed on many soft fruits, including grapes, blueberries, cherries, plums and strawberries, and some seeds like sunflower seeds. Although common throughout Southern B.C., they are not a major pest. During most of the year, they feed on weed seeds.

Management:

Plastic netting with a mesh size of 2 x 2 cm or less will protect fruit; house finches will go through larger mesh nets. Frightening devices, good for other birds, have little effect on house finches.

Sapsuckers

Sapsuckers are small woodpeckers, with a brush-like tongue suited for feeding on sap from trees. Four kinds are found in British Columbia: the red-breasted sapsucker (*Sphyrapicus ruber*) on the Coast and in the Central Interior, the yellow-bellied sapsucker (*Sphyrapicus varius*) in Northeastern B.C., the red-naped sapsucker (*Sphyrapicus nuchalis*) in Southeastern B.C., and Williamson's sapsucker (*Sphyrapicus thyroideus*) in the Southern Interior and Southern Kootenays. All four species are of similar size with dark backs, distinctive white shoulder patches on the wings, yellow bellies and varying amounts of red on the head, neck and chest. Female Williamson's and juveniles of all species have brown heads with dark brown (as opposed to black) and white patterns on their bodies.

Sapsuckers make horizontal rows of small holes (6-10 mm diameter) in the bark of many kinds of trees, but especially birch, willow, elm, blue spruce, Scots pine and hemlock. They use their specialized tongues to lick up the sap and to eat any insects trapped in it. They tend to concentrate on individual trees, and a tree may suffer extensive loss of sap through hundreds of holes. Large branches or even whole trees may be killed after repeated drillings. In addition, the holes may also allow entry of diseases and insect pests. Damage occurs mainly in spring and summer in the Interior, but in mid-winter on the South Coast.

Management:

Covering damaged areas of trees with burlap or 6 mm mesh hardware cloth will stop further damage, although the sapsucker may simply shift to new areas on the same tree. Before applying burlap, hardened sap should be scraped off the holes and pruning paint

should be brushed or sprayed on; this will reduce sap flow and help to prevent entry of diseases. Shiny pie-plates or bright yellow plastic strips may frighten off sapsuckers, but they are sometimes hard to discourage. Sapsuckers are protected under the federal *Migratory Birds Convention Act* and cannot be killed.

Other Woodpeckers

The most common species in B.C. is the northern flicker (*Colaptes auratus*), a medium-sized woodpecker, larger than a robin, with a brown back, salmon underwing linings, white breast with black spots, and white patch on the rump. Any exposed wooden surfaces, such as cedar siding or roof shakes, may be pecked. Woodpeckers drum on surfaces for at least three reasons:

- 1) to dig out ants and other insects on which they forage;
- 2) to drill out a nesting cavity; and
- 3) to advertise the bird as the holder of the territory.

The latter is the most common, and simply means that the area of pecking is providing good sound resonance and amplification. In fact flickers will often drill on metal chimneys or gutters causing a loud jackhammer-like sound! The first two reasons imply that the wood is infested with insects or infected with heart-rot, and hence, are warnings to check into the condition of the wood. Woodpeckers, with the possible exception of sapsuckers, do not kill live, healthy trees.

Management:

If the damaged area is insect-infested (e.g., with carpenter ants), eliminate the insects that are attracting the woodpeckers. In other cases, the best control method may be to temporarily hang 60 cm strips of plastic

flagging tape suspended from horizontal wires or twine, plastic netting, hardware cloth or burlap over the affected area. Non-toxic coatings such as Super Hunter and Tanglefoot Bird Repellent can also be effective, but may stain wood. These should be kept in place for one to two weeks, removed and then re-applied if the bird returns. Some success has been reported by applying repellents developed to discourage horses from chewing wooden fences.

Woodpeckers are protected under the federal *Migratory Birds Convention Act* and cannot be killed.

European Starling

(*Sturnus vulgaris*)

The European starling is larger than a blackbird, but smaller than a robin, with speckled to shiny black feathers, a longish yellow bill and short tail. Young starlings, common from May to August, are brown, but otherwise similar. They often gather in large flocks and make annoying clatter with their screeching.

Starlings damage many kinds of fruit, especially grapes, cherries and blueberries. They occasionally forage on some vegetables as well. However, they also eat many harmful insects. Leatherjacket larvae, which eat the roots of lawn grasses, are one of their main foods. They can also be a nuisance by nesting in buildings.

In addition to crop damage, starlings often nest in crevices in buildings, and can be very noisy, as well as unsanitary.

Management:

Exclusion of starlings, by closing up or screening off potential nest-sites (any

opening 4 cm or more in diameter) is the best control method to reduce local populations. Starlings tend to return to the same nesting site where they were hatched, so diligent efforts at preventing nesting will pay dividends in the following year.

Controlling the local population does not prevent the swarming of huge flocks that roost in large trees and under bridges, etc. In rural areas, large flocks can be discouraged from roosting in nearby trees by periodic shooting. European starlings are an introduced invasive species and are exempt from protection under the *Wildlife Act*. They can be killed by the public as long as the method is legally acceptable in the jurisdiction in which they are killed. Organized starling control programs are operating in some areas of the province to contribute to area-wide control.

If damage is serious, plastic netting, with a mesh size of 2 x 2 cm or less, is the best control measure, especially in urban areas. It may be stretched over a framework of posts and wires above vulnerable crops, or may be draped over grapevines or blueberry bushes when the fruit begins to ripen. Noisemaking devices such as propane exploders or electronic alarms are effective in repelling starlings, but are too noisy to use in urban areas. Other methods give less consistent results. Bright yellow plastic streamers or shiny pie plates hung in trees or over a garden have some repellent effect. Model hawks suspended over a garden also help, but they protect only a small area and tend to lose their effectiveness if not moved frequently.

In rural areas, noisemakers combined with shooting may be required during the critical part of the season for certain valuable crops.

American Robin

(*Turdus migratorius*)

The American robin, familiar to almost everyone, is a medium-sized songbird with a brick-red breast, grey back, and blackish head and tail. Robins are found throughout B.C. and can be a pest of fruit, especially cherries, grapes and blueberries, and occasionally strawberries. However, they eat many injurious insects as well, and do more good than harm. Robins differ from starlings in that they tend to feed individually on a daily or regular basis in a local area, while starlings cover wide areas and tend to feed in flocks.

Management:

Fruit can be protected from birds with plastic netting with a mesh size of 2 x 2 cm or less. Bright yellow plastic streamers or shiny pie plates hung in trees or over a garden have some repellent effect.

Robins are protected under the *Migratory Birds Convention Act* and cannot be killed.



Rock Pigeon

(*Columba livia*)

Feral, domestic, or rock pigeons as they are properly known, are an introduced species that often nests in or congregates on older houses, especially those of two or more stories and with many ledges or gables. Accumulation of droppings creates unsanitary conditions and both pigeons and their droppings are carriers of several diseases and parasites, some of which can affect people or domestic animals.

Management:

Exclusion, by screening off potential nesting sites with plastic netting or metal screening, is the best control. Pieces of wood installed at a steep angle can prevent roosting on ledges; strips of metal with projecting spikes, available commercially, will do the same thing. Rock Pigeons are exempt from standard protection under the *Wildlife Act* and shooting is possible in rural areas. Check first with local authorities. If other methods fail, contact a licensed pest control company for additional assistance.