

# BATS

B.C has the highest diversity of bats in Canada. Of the 18 species of bats found in Canada, 17 live in B.C and 10 can be found in Richmond such as the little **Brown Bat (*Myotis lucifungus*)**. The diverse geography, climate and ecology of B.C provides varied habitat for feeding, roosting, reproduction and hibernation. Two of these 10 bat species migrate south for the winter, while the other eight hibernate from October through March. Bats become active in the spring when insect populations increase and are present in many cities (including Richmond) but most residents are unaware of them. Bats are mysterious animals, and hard to spot as they are nocturnal, but they can be seen nightly from April through October, from sunset to sunrise.

## Adaptions

Bats are the only mammals that fly. They have small bodies and large, light wings formed by a thin, flexible membrane spread over elongated fingers with a smaller membrane connecting the hind legs and tail. Their flight is quick and nimble – ideal for catching flying insects. At rest they hang upside down from a perch with their wings wrapped around their body.

Bats in Canada feed exclusively on insects and play an important role in our ecosystem as the primary predator of nocturnal insects. Bats use echolocation to navigate and locate prey at night with their echolocation calls inaudible to humans. During the summer, pregnant females will consume their body weight in insects - over 1,000 each night! Their prey includes mosquitoes and insect pests of crops, gardens and forests saving farmers billions of dollars in pesticide application and greatly helping our local farmers with natural pest control.



## Behaviours

Bats are fascinating animals. Males and females have separate lives – except for mating and hibernating. Between May and August, females congregate in large maternity roosts that may contain thousands of bats! Each female has only one pup per year and less than 50% will survive their first winter. Due to the importance of bats and their low reproductive rate, maternity roosts are critically important and are protected by the B.C Wildlife Act.

*Note: All bat species are protected under the B.C Wildlife Act. bats cannot be relocated or disturbed during their active breeding season between May 1 and September 1.*

During the summer, males often roost solo or in very small groups of less than five individuals. In October, males and females reunite to mate. Females store sperm until the following spring when delayed fertilization impregnates the female if insect levels are sufficient to support the growth of a baby. Juvenile bats, known as pups, are born in June or July and are fully grown by August/September.

## Identification

Tropical bats may be the size of a cat but northern species are tiny animals that weigh between 5g and 30g and with wingspans up to 40cm. The smallest species are similar in appearance and difficult to identify so biologists use body measurements, calls and/or DNA to differentiate the species.



## White-nosed Syndrome

Bats in North America are facing a catastrophic disease known as White-nosed Syndrome (WNS). The disease has killed over 7 million bats and has resulted in three Canadian species becoming endangered. There is currently no cure and if the disease cannot be stopped, bats could become extinct within the next 20 years. WNS was introduced to New York State in the winter of 2005/2006 and spreads further across the continent every year. The disease reached eastern Canada in 2010 and was discovered in Washington State (less than 200 km from the B.C border) in April 2016.

The disease is caused by a fungus and infects hibernating bats. The fungus thrives in caves where bats hibernate and grows on the bat. The spread of the fungus under the skin and on their fur causes the bat to wake during their hibernation. This awakening exhausts their fat reserves, resulting in the bats dying of starvation and dehydration before spring comes. WNS monitoring in B.C began in 2017 and has not yet been reported in the province but it is only a matter of time. Due to its proximity to the US border, Richmond is at risk of being one of the first B.C cities to be infected with WNS. WNS is monitored in B.C through summer roosts as few hibernation sites are known to B.C biologists.

Report summer maternity roosts, winter sightings and dead bats to the B.C Community Bat Program (1-855-922-2287) to help with monitoring, protection and management of bats in B.C.

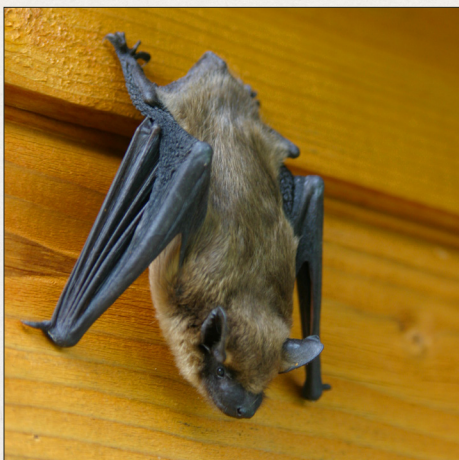
## History and habitat in Richmond

Bats are common throughout the city of Richmond. They may be seen outside the Bridgeport Skytrain station, at Iona Regional park area, YVR airport, along river trails and in other Richmond green spaces and parks. Bats may roost in a variety of natural or man-made structures including trees, commercial buildings, residential homes, sheds, barns/chicken coops, tree houses, woodpiles, under bridges, churches and bat boxes. Bats require fresh water throughout the night and may drink over a pond, lake, river, garden water feature, pool or animal trough. They are often seen feeding in our local parks. Bats feed on insects above fresh and salt water and Bat boxes may also feed over residential lawns and gardens where insects are plentiful.

## Bat boxes

Bat boxes are man-made structures built for female bats. These structures are artificial maternity roosts and may be used from April to September. They can be installed in association with a bat exclusion or to enhance bat habitats in your neighbourhood. Bat boxes must be built following specific criteria in order to be successful. Criteria includes multiple chambers, gaps ~3/4" wide, chambers with internal connections, surfacing on all internal surfaces, aeration, waterproof, an adequate landing pad and appropriate sizing. Bat boxes are most successful when multiple boxes are installed on a property.

*Note: Many commercially sold bat houses are inappropriately designed for bat use. Before purchasing, designing and/or installing a bat box, contact the B.C. Community Bat Program for advice and recommendations.*



## Conflict with people

People have many misconceptions about bats and often consider them to be pests or a hazard that should be eradicated. Bats are not pests but are important wildlife. Public education provides information on how to behave around bats and to understand that bats are rarely dangerous and there is no need for fear. See the list below for the most common reasons for conflicts between humans and bats:

### Damage to fields bat roosts

A bat roost is defined as any location where a bat will rest day or night. There is little natural habitat for bats in the city so bats commonly roost on or in man-made structures. Bats don't make a nest or modify a structure – they simply need a narrow crevice to tuck themselves in, upside down, to roost. In the summer, bats prefer hot, dry, dark locations for their day roost, however it is common for male bats to roost singly above a doorway. In buildings, female bats may form maternity colonies in an attic, under siding, under fascia board, under awnings or even under signage.

Bats may access their roost site from gaps as small as a dime so people may be unaware of bats roosting in their home. Conflicts arise when bats roost above windows or doorways where their droppings (guano and urine) are noticeable. Scratching and calls may also be heard by residents when bats roost in walls next to bedrooms. When roosts are found, people often call pest control companies to exclude the bats. There is no need to exclude bats from your home when their roost is sealed from your living space and droppings can be easily managed every year to avoid conflicts.

*Note: It is illegal to exclude bats from May 1 to September 1; exclusion must only occur when bats are not present.*

### Damage to fields, awnings and umbrellas

It is not unusual to find a single bat roosting in an awning or patio umbrella during the summer or in spring and fall when bats are moving across the landscape from their hibernation site to their summer roosting site. Before opening an awning or umbrella, survey the area beneath it for bat guano (similar to mouse droppings). If guano is suspected or you have lots of bat activity over your yard at night, slowly open the structure. Opening will scare the bat, causing it to wake and fly away. It is important that you move slowly and try to stay off to the side to prevent accidental contact with the bat. Any direct contact with a bat should be immediately reported to Vancouver Coastal Health.



### Open doors and windows

Bats are amazing aerial acrobats, however in late summer and fall when juvenile bats are feeding they may accidentally enter a home or building while chasing insects through an open door or window. To avoid any nightly conflict with a bat in your home or business, ensure doors and windows are closed between sunset and sunrise. Any open door or window should have a screen to prevent entry. Screens should be checked annually for holes as bats can fit through a hole as small as a dime. If you find a bat in your home, do not panic, you have two options to remove the bat.

**Option 1:** Close off the room that the bat is in. Open a door or window to the outside and allow the bat to leave on its own.

**Option 2:** Close off the room that the bat is in. Stay back and allow the bat to settle on a surface. Grab a plastic container and piece of cupboard. Put on gloves. Approach the bat slowly after 10-15 minutes. Place the container over the bat and slide the cardboard behind it, as you would do to capture a spider. Carry the bat to the base of a tree, fence or wall.

*Note: Bats cannot take flight from the ground; they must be able to climb up a surface and drop to take flight.*



## Damage to fields pools and troughs

Like all wildlife, bats require freshwater to drink from nightly. They may drink throughout the night, but a fresh water source is especially important to bats just after sunset and prior to sunrise. Bats that drink from pools and animal troughs are more prone to getting trapped, injured or drowned. Wildlife ramps can be used to prevent bats from drowning in the water source and an unobstructed flight path should be made available to bats to prevent injuries and minimize conflicts. Any water source that is known to be used by bats should be reported to the B.C Community Bat Program and/or the City of Richmond.

## Cats

Most conflicts are a result of a cat attack on a bat. Cats can hear the high frequency bat calls that are inaudible to humans and therefore will often alert homeowners to the presence of bats on their property. All cats should be vaccinated against rabies as they are the number one predator of bats in urban areas. Cats are excellent hunters and will often bring the bat home with them. Call the B.C Community Bat Program (1-855-922-2287) to report a cat-bat interaction.

The bat may be picked up or the homeowner may be asked to prepare it for shipping if rabies testing is required. Never touch a bat with your bare hands, always wear gloves. Pick up the bat, wrap it in paper towel, place in a Ziploc bag and place in a clean plastic container to store in your freezer to preserve the specimen for testing. To prevent cat-bat interactions, keep your cat indoors from sunset to sunrise.

## Damage to fields daytime sightings

Bats are nocturnal animals and should not be seen in the daytime. If a bat is noticed in the day, caution should be taken as unusual bat behaviour or erratic flight during the day may be a result of rabies. Any daytime sightings should be reported to the B.C Community Bat Program.

## Rabies

The only strain of rabies in B.C is the bat-variant strain of rabies. Although bats are responsible for the rabies virus in B.C, less than 1 per cent of the bat population carries the disease and may pass it on to other animals and humans. There have been three deaths from rabies in B.C from 1924 to 2019. Bat encounters during the daytime pose greater risk of rabies contact. Rabies is a deadly virus but can be successfully treated if a person or pet seeks medical attention immediately after direct contact with a bat. Any direct contact with a bat should be immediately reported to Vancouver Coastal Health.

## How is Richmond helping bats?

The City of Richmond is proud to be the first city in the Lower Mainland to be certified as Bat Friendly. Read our [January 2020 News Release](#) to learn more.

The City is recognized for its ongoing commitment to protect and create bat habitat, provide information to the public regarding bats and to promote bat education in the community. The City of Richmond has long recognized the importance of a healthy ecological network that includes bat habitat.

Richmond began gathering information on bat roosts and feeding sites at Terra Nova Rural Park in 2019, and will soon will be installing a bat condo and several smaller satellite bat boxes in Terra Nova Park and other local parks. The Richmond Nature Park Society offers bat education programs to elementary schools at the Richmond Nature Park and will also be providing public education opportunities in the future. The City is continuing to look for new and innovative ways to empower residents, businesses and developers with opportunities to implement bat protection best practices.



## How can you help bats?

The most important thing you can do for bats is to report bat sightings to the B.C Community Bat Program. Report the following to 1-855-922-2287 or [vancouver@bcbats.ca](mailto:vancouver@bcbats.ca):

- Bat roosts and bat boxes (occupied / unoccupied)
- Bat hibernacula (where bats spend their winter)
- Daytime bat sightings
- Dead bats
- Bat contact with humans or pets

## Other things you can do include:

- Volunteer
- Monitor a bat roost
- Attend a bat educational program to learn more information on their species
- Advocate for bats and educate your friends and family

## Additional information:

- [B.C. Community Bat Program](#)
- [White-nosed syndrome](#)
- [Province of B.C. Bats](#)
- [B.C. Wildlife Act](#)
- [Bat Conservation International](#)

