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# LIVING

Caught up in the ever-increasing frenzy of Halloween, we are once again decorating our homes and front yards with the traditional symbols of the season: witches, spiders, ghosts, jack o'lanterns and, of course, bats.



OUR  
CHANGING  
SEASONS  
Drew Monkman

Although this is all done in good fun, it doesn't do much to improve the poor bat's image. Unfortunately, these creatures have been depicted as inherently evil for centuries. In ancient Babylon, ghosts were believed to take the form of bats. Even Christian art would show the devil and

his companions with bats' wings. The blood-sucking vampire, Count Dracula, hasn't helped matters either.

All the bad public relations that bats must endure is enough to make any naturalist or conservationist wince, to say the least. These are fascinating creatures with some of the most interesting adaptations of any animal. And, like so many other organisms, we need to do a much better job of protecting them.

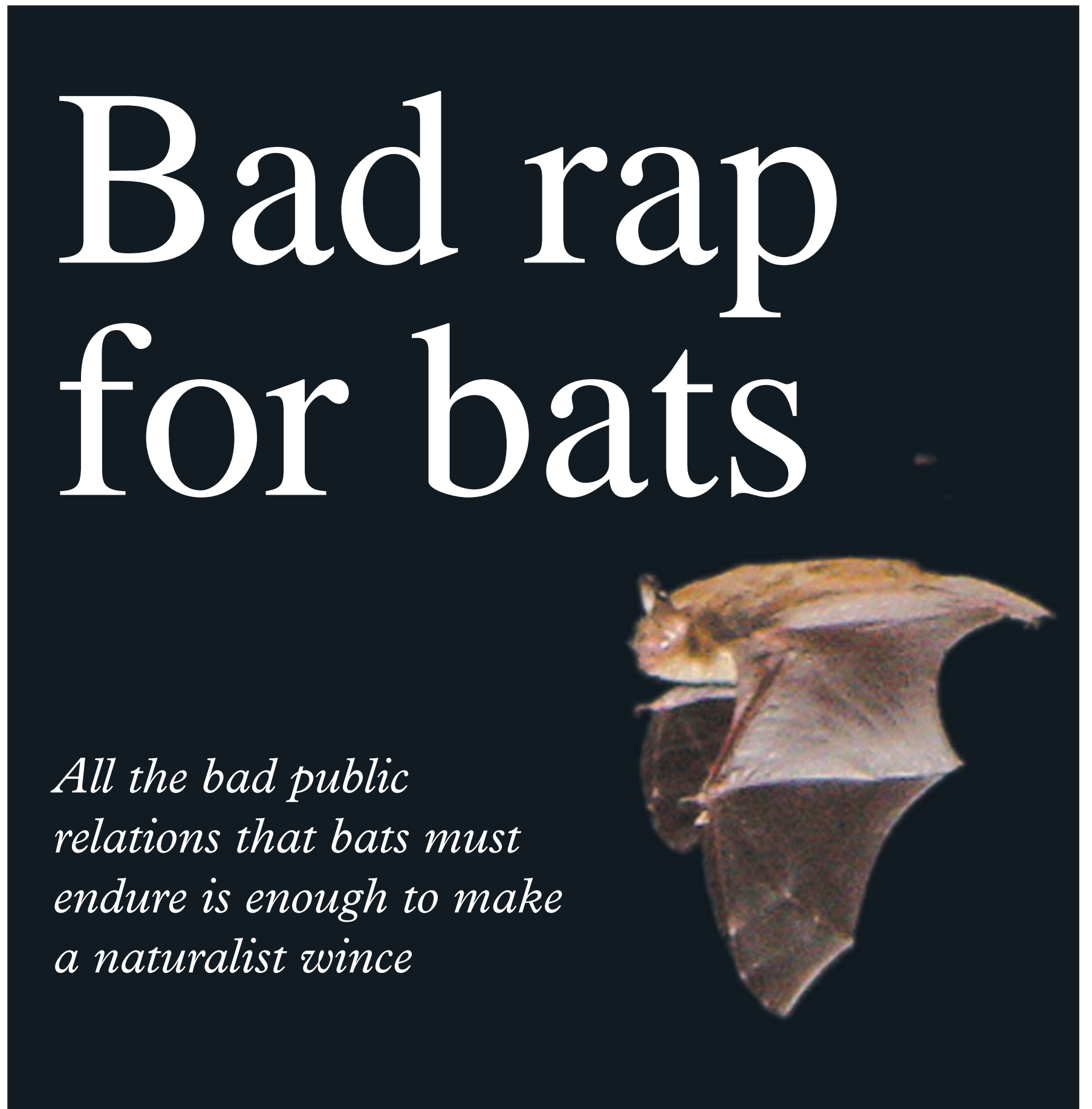
First of all, let's dispel a few myths. Bats are not blind. In fact, they can see very well and some species such as fruit bats may actually have better eyesight than humans. Nor are they dirty or attracted to people's hair. In fact, bats groom themselves quite frequently. Finally, bats are no more evil, if one can even use such a word when speaking of the natural world, than your house cat. Any notions of malevolent behaviour probably arose from our fear of the dark and our ignorance about bats in general. Because they are active at night and really quite shy, few people ever see them up close. It's hard to appreciate animals you rarely have any contact with.

It is true that rabies does occur in slightly less than one per cent of the bat population, a level which is much lower than in foxes and skunks. A bat crawling on the ground is possibly sick (or injured) and should be avoided. If you must handle it, always wear gloves.

At least eight species of bats occur in the Kawarthas. Some, such as the red, hoary and silver-haired bats, are migratory, spending the winter months in the Gulf states. However, our most common species, the big brown and little brown bats, spend the winter months in Ontario. Little browns overwinter in caves or mines and have been known to fly up to 800 kilometres to reach them. These sites provide stable temperatures above freezing, as well as high humidity. The closest known hibernation sites to Peterborough are an abandoned mine near Renfrew and limestone caves along the Moira River near Belleville.

Big browns, too, will hibernate in mines and caves, but are less willing to migrate long distances. Being a hardier, more cold-resistant animal, they also remain active much later into the fall. I have seen big browns as late as November, feasting on the moths of Indian summer. Their greater hardiness also allows this bat to overwinter in the unheated attics and walls of buildings. It's not uncommon to hear them moving around in the walls, scratching and squeaking.

When they enter a state of hibernation, bats are able to survive on a greatly reduced heart rate, body



# Bad rap for bats

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temperature and metabolism. This allows them to burn precious body fat slowly enough to get through the entire winter. A bat's heart rate, for example, typically drops from 600 beats per minute to only 10 to 80 beats. However, despite this state of near death, some bats do leave their shelters even on mild days to satisfy mid-winter mating urges. You may also see bats during periods of extreme cold. Frigid temperatures may cause hibernating bats to awaken and to try to squeeze through the vapour barrier in the wall to reach warmer temperatures. This is often when we encounter them. If you immediately release them outside, however, they will freeze to death.

Mating generally occurs in late summer, usually near hibernation sites. Male and female bats of both species can often be seen swarming at these locations. It is interesting to note that, after mating, the sperm is stored in the female's body until about April. Only then do ovulation and fertilization take place. The young are born in late spring or early summer, and are able to fly and obtain their own food in just three weeks.

Locally, large numbers of bats are sometimes seen in late summer over the Indian River near the Warsaw Caves. The numbers peak about an hour after dark. Whether these are mating swarms or simply bats gathering to feed is not known. The status of the Warsaw Caves as an overwintering site also needs to be studied. It is possible that bats do hibernate in some of the smaller, less accessible caves.

Bats, of course, are prodigious insect eaters. They hunt most actively during the second and third hours after sunset. All of our local species use echolocation to locate their prey. In echolocation, the difference between the original sound produced by the bat and its echo contains the information needed to locate and identify objects, be they a wall or a moth. The sounds bats produce are ultrasonic and beyond the range of human hearing. They can be made audible, however, by using an instrument called a bat detector.

In the relationship between bats and their prey, things are not as one-sided as they might appear. Insects have developed a number of strategies to avoid becoming bat

food. For example, a pair of ears that are sensitive to the bat's echolocation calls allows some moths to detect the presence of bats long before the bats detect them. They simply fly off in another direction. However, if these same insects are surprised by a bat at close quarters, they will merely fold their wings and dive directly into the vegetation.

The adaptations of some tiger moths are especially interesting. They not only have ears for listening to bats but they produce their own ultrasonic sounds which serve as a defense mechanism. These sounds may advertise the fact that the moths are poisonous (as larvae, many tiger moths feed on milkweed), thereby serving as an acoustic version of the monarch butterfly's bright colours and slow, conspicuous flight. The sounds may also startle the bats, since they are not emitted until the bat is within one metre of the moth. A bat's diet, however, is not restricted to moths. They tend to be fairly opportunistic feeders and will eat whatever insects are available.

It is now feared that many bat populations are experiencing serious declines. Disturbance by peo-

ple is definitely the most serious threat. This can be especially harmful when nursery colonies in attics are disturbed in the late spring. The adults often end up abandoning the babies. People should also stay out of any caves or mines from late September through early spring if bats are known to hibernate there. When hibernating bats are roused, they immediately burn large amounts of body fat. One disturbance can cost a little brown bat the energy that would keep it alive for 60 days of hibernation.

If you must evict a bat colony from a building, alternative roosts such as bat houses should ideally be provided several months or one season before the eviction. The bats should be forced out at a time in the early spring or late summer, when flightless young are not present. Go to [www.batcon.org](http://www.batcon.org) for detailed information on bat conservation and proper techniques for getting rid of bats.

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Tim Dyson, special to The Examiner