

PROTECTING CRITICAL *Bat Habitat* AND HUMAN SAFETY

By Doug Archibald

On summer evenings I often sit on the deck and watch and listen as twilight peacefully drifts into night. While we humans are winding down, others' work has just begun. Bats are just beginning to hunt, and since they are insectivores, their diet consists of many of the biting insects that lessen our pleasure on short summer evenings. It amazes me how manoeuvrable bats really are as they dart through the air on wings of silence, navigating and finding prey by echolocation (vocalizing), at frequencies we cannot hear.

There are six confirmed, and one unconfirmed (Big Brown), species of bats in Nova Scotia. Of these the Silver-haired, the Red and the Hoary are rare to uncommon and migrate south as summer ends. The Little Brown, Northern Long Eared and the Eastern Pipistrelle are year-round residents, with the Little Brown (*Myotis lucifugus*) being the most common.

Each September the females and young leave their summer nurseries, often warm dry attics, and head to abandoned mines or natural caves where they hibernate for the winter. Here they are joined by the males who have spent the summer

roosting and hunting dispersed throughout the landscape.

Bats may travel hundreds of kilometres to reach hibernaculums, with some sites attracting thousands of individuals. High relative humidity and above freezing temperatures make these secluded subterranean dwellings ideal for hibernation. Once the bats have entered a state of torpor, they are extremely vulnerable to disturbance. Any sudden awakening uses up valuable energy, which depending upon remaining energy reserves, and duration of winter, can result in death.

The Nova Scotia Department of Natural Resources, in conjunction with other agencies and universities, studies hibernaculums to determine species use, population abundance, age and sex structure and geomorphology. The information is then recorded in DNR's Significant Species and Habitat database. This geo-referenced data is available to land owners and resource managers as an aid in planning to help insure the integrity of the habitat is maintained.





Through its Minerals Resources Branch, DNR also has significant responsibilities relating to abandoned mines located on Crown land. Modern mine reclamation standards require that mine openings be securely sealed to eliminate safety hazards. A fund for abandoned mine remediation has been established, and through it, numerous mine openings have been capped, filled or otherwise made safe.

One example was a gold mine north of Lake Charlotte, Halifax County. Created in 1939, but long since abandoned, the adit (tunnel) had become an overwintering site for thousands of Little Brown and Northern Long Eared Bats, making it one of the largest and most important known hibernaculums in eastern Canada.

In 2004 the Lake Charlotte adit was chosen as a priority for closure. To insure that

valuable bat habitat was conserved, the proposed structure was required to restrict human entry while allowing bat passage, and to minimize changes to the surrounding environment. DNR, in conjunction with the Department of Transportation and Public Works, designed and installed a metal grate embedded in a thick concrete collar at the adit opening. Workers spent

several days in the remote area completing construction prior to the arrival of the first bats in early September.

Follow up visits have shown that the bats have adapted to the grate. Detection equipment indicates large numbers still entering the adit last fall.

We hope the bats continue to enjoy their new front door and that people will appreciate and respect the bats' need for privacy.

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