Caving, climbing and Chiroptera

Responsible recreation around bat habitat

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Abstract

•Bats make up a large, under-recognized component of BC's mammalian biodiversity. Many of our 15 species use rock crevices and/or caves at some point in the year. However, both summer and winter roosts (hibernacula) are dispersed across landscapes and are largely undocumented.

•Bats in BC face many threats, from disease to habitat loss to direct persecution, and outdoor recreation activities can inadvertently impact local bat populations. The two key pathways for impact are 1. Disturbance and displacement or even possible roost destruction (from route development/cleaning) during hibernation and the maternity period, the most critical times of the year, and/or 2. Human transport of fungal spores, primarily *Pseudogymnoascus destructans* (*Pd*). *Pd* is the fungus responsible for white-nose syndrome, a fatal bat disease spreading across North America.

•To reduce impacts of recreation on bats in BC, there are provincial best management practices for caving and climbing, outreach efforts such as the BatCaver program run by Wildlife Conservation Society Canada, and established decontamination protocols to reduce the risk of spreading Pd.

•**Lessons learned from our work to-date is that reduction of impacts relies on relationship-building and education to encourage voluntary stewardship.** There is a need to continue and expand outreach to raise awareness of bats within the recreation community, including how to reduce impacts, where to get more information, and how to report bat observations to contribute to conservation efforts. BC can learn from organizations such as the Colorado-based Climbers for Bat Conservation, which aims to make recreationists into bat ambassadors and allies.

BC Bats

Diverse

- BC is the Canadian hotbed of bat diversity - home to 17 species of bats

Beneficial

- Insectivores – eat pests of humans, agriculture, and forestry

At risk

- Half are provincially at-risk
- Three are federally threatened or endangered

Key threats

1. White-nose syndrome: an invasive fungal disease deadly to bats
2. Habitat loss: forestry, urban and rural development
3. Wind development

Concerns around caving and climbing

Disease transmission

- Fungal spores (Pd, responsible for white-nose syndrome) can be easily transported on clothes and gear.

Disturbance during sensitive periods

- Entering caves in winter causes bats to wake and use valuable fat reserves, decreasing the chances of surviving winter and early spring
- Disturbance in summer can cause stress and roost abandonment, with impacts on reproductive success

Direct harm

- Bats roost out of site and can be injured or killed when rocks are moved or removed

Loss of habitat

- Cleaning routes or altering cave passage may remove features used by bats
- Opening passage in caves can change airflow and microclimates, rending sites unsuitable for bats

Tools to reduce impact

Decontamination

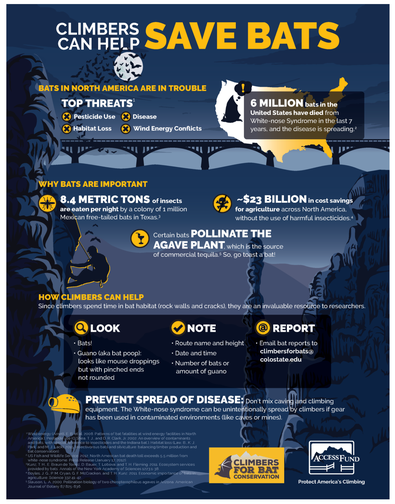
- Always decontaminate when between cave or mine sites

CWHC 2017. Canadian National white-nose syndrome protocol for entering bat hibernacula

Education and voluntary stewardship

- Educate and train recreationists as Bat Ambassadors and engage them in conservation – report bats!

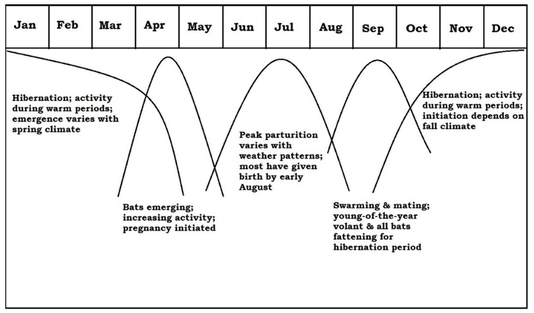
Climbers for Bat Conservation
https://climbersforbats.colostate.edu/
BatCaver www.BatCaver.org
Other partners



Timing windows

- BMPS provide recommended timing for activities to reduce impacts

BC GOV. 2016. Bat BMPS Ch.3 – Caving, rock climbing, geocaching and other activities around cave and crevice habitat



Lessons learned

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

- Enforcement is difficult for recreational activities in dispersed and often difficult-to-access habitats
- Protocols and timing windows are only useful if they are adopted
- For bats, reduction of impacts requires the goodwill and voluntary stewardship of recreationists.
- Education and partnerships are key to create a widespread attitude shift and lasting change.