

BC Bats: Biology, Morphology, and Threats

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South Coast Bat Action Team



What are bats?

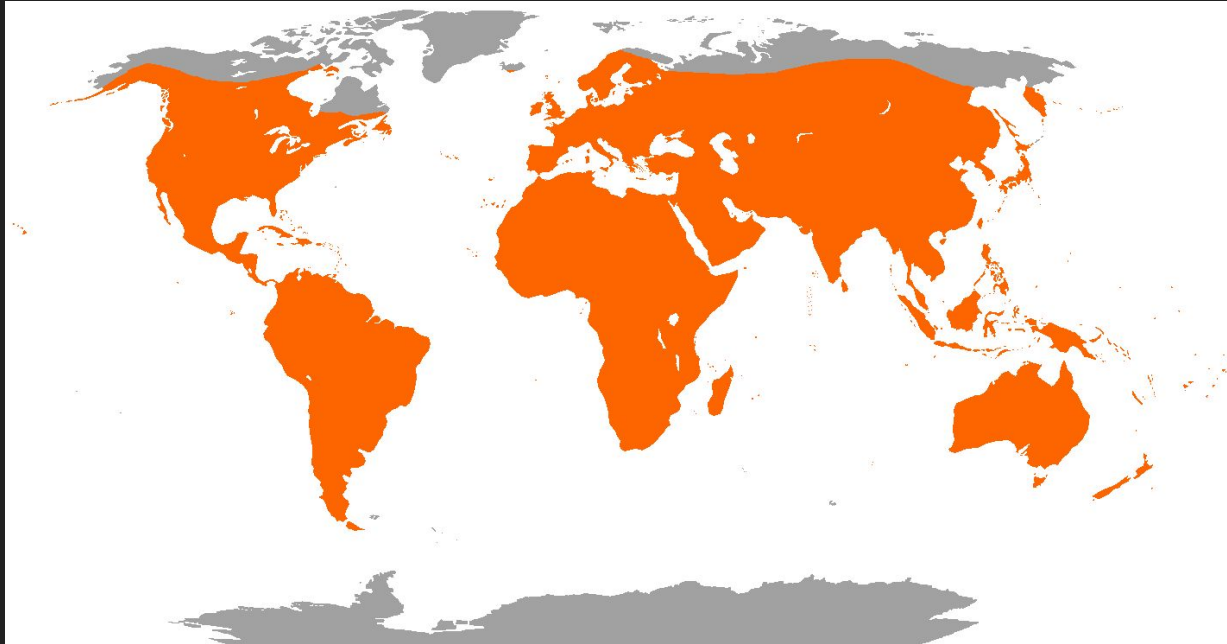
- Chiroptera (hand-wing)
 - Megachiroptera
 - Microchiroptera
- New classification based on genetic data (work in progress)
 - Yinpterochiroptera
 - Most of megabats and some microbats
 - Yangochiroptera
 - Most of microbats

What are bats?

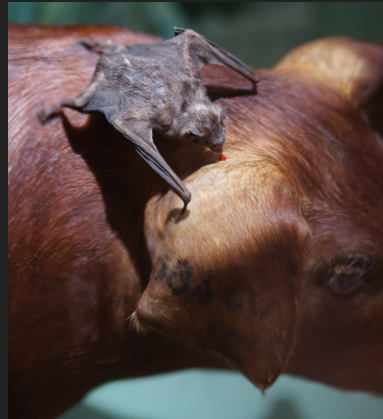
- Mammals
 - not birds
 - not flying mice or rats
 - The only mammals that can fly
- Second most diverse species of mammals
 - More than 1200 species around the world
 - and counting

Distribution

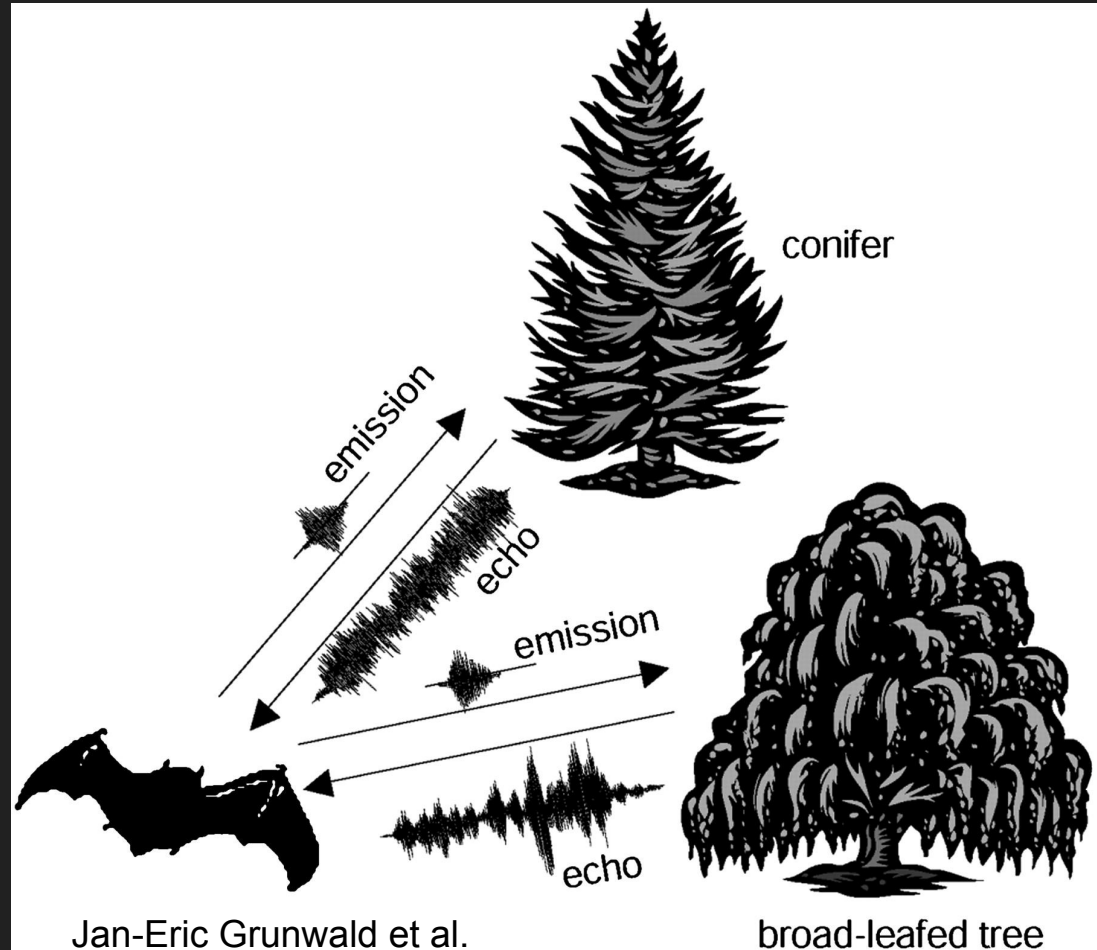
- Distributed all around the world, except in the poles



Diet



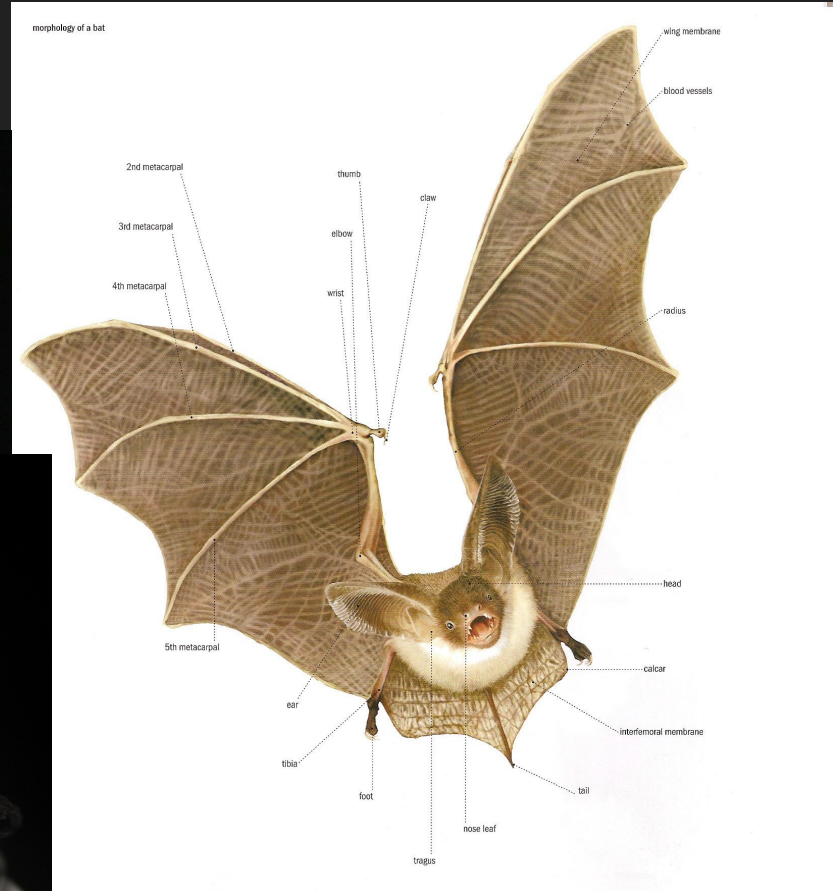
Echolocation



Bat morphology

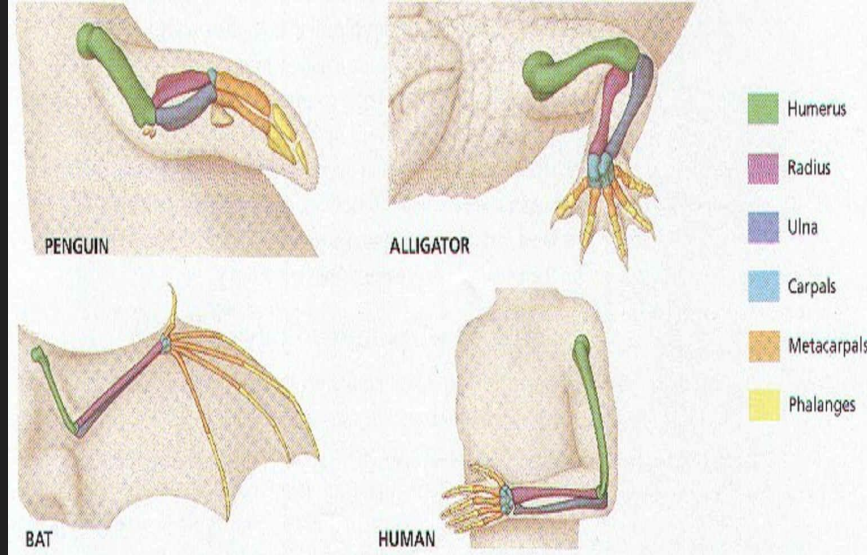


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Bat morphology

- The wing



Bats from BC

- 16-17 species of bats
- BC has more species of bats than any other provinces
- 10-11 in the lower mainland

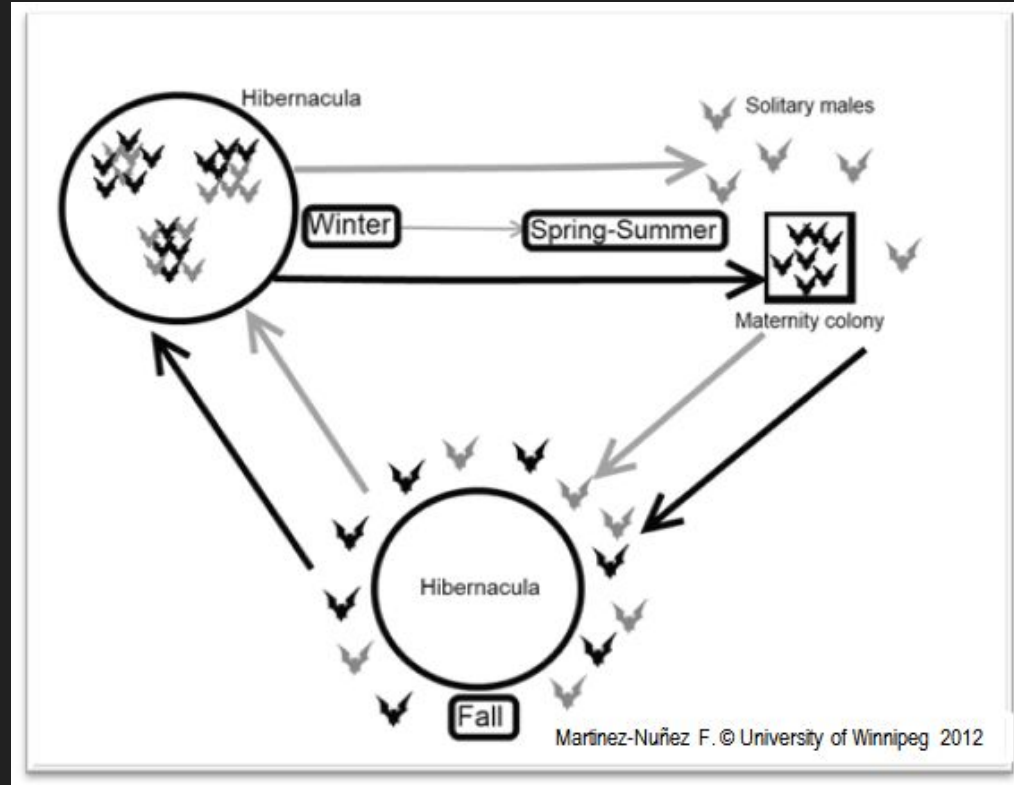
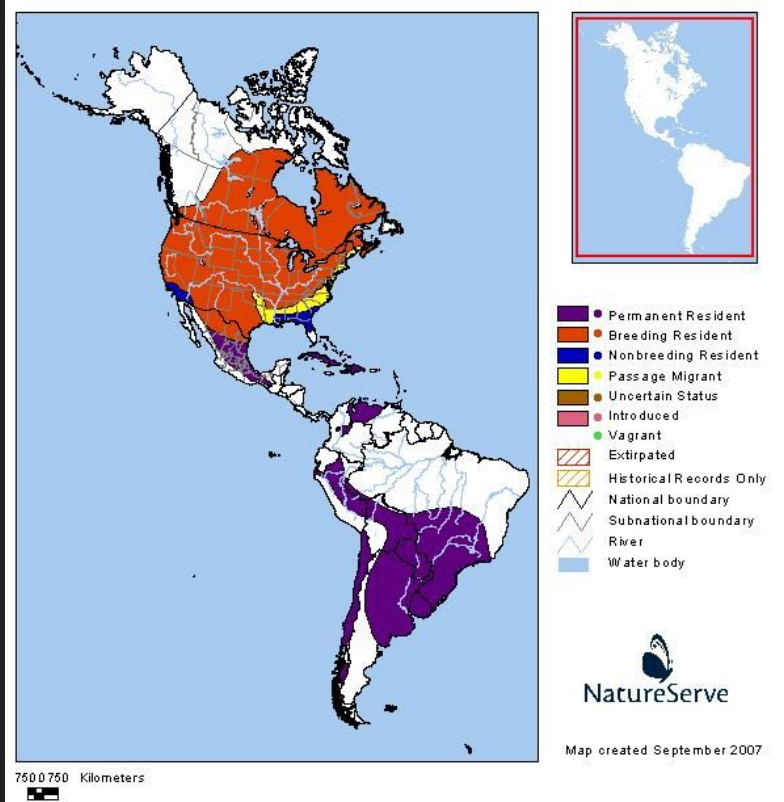


Bats from BC

- Keen's Myotis (Red listed)
- Townsend's Big-eared Bat (blue listed)
- Little brown bat (Endangered)

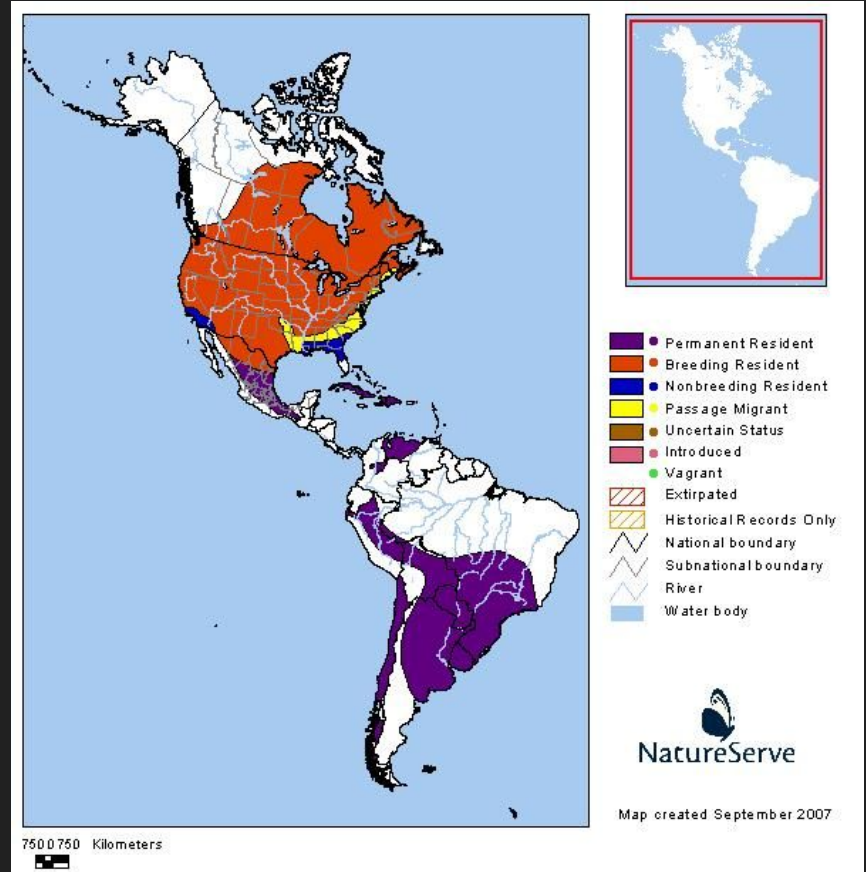


Life cycle



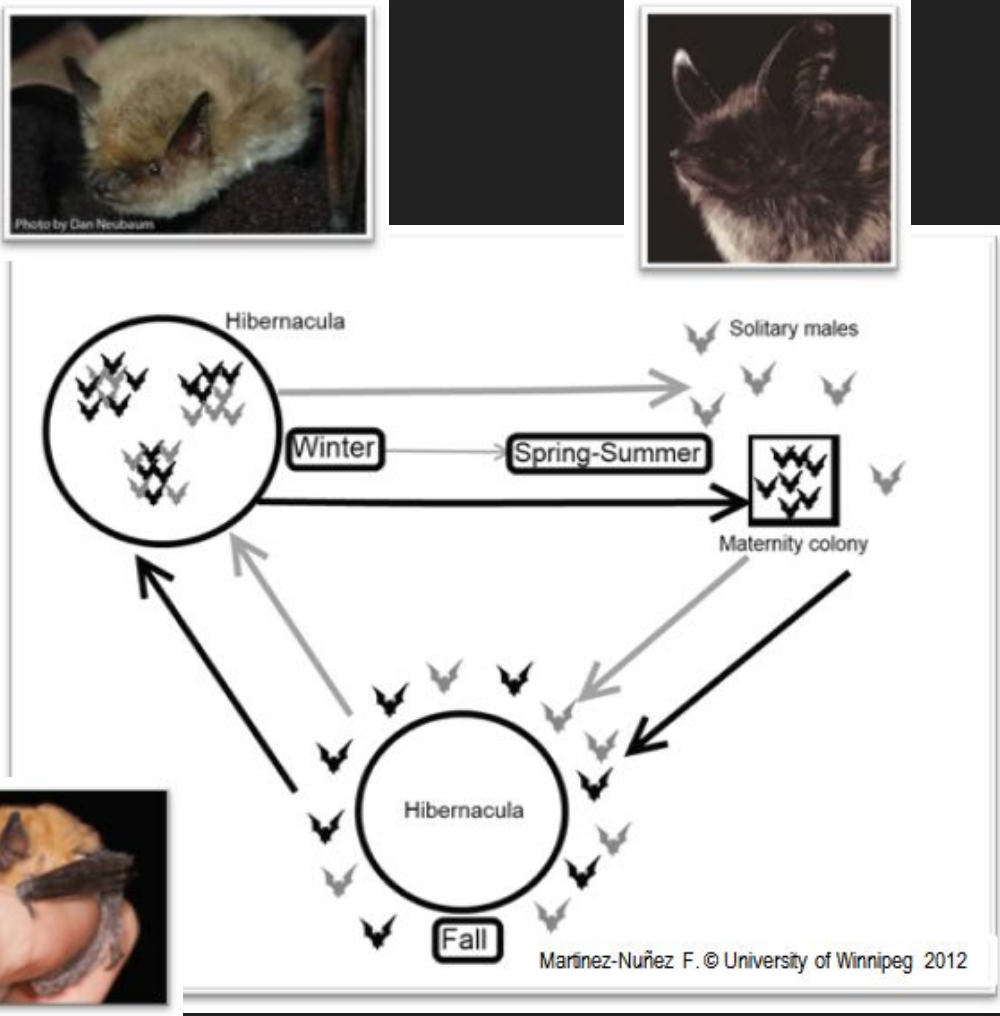
Life cycle

- Migratory bats
 - Hoary bat (*Lasiurus cinereus*)



Life cycle

- Hibernating bats



Bat identification and data collection

- Estimate age.
- Morphometrics.
- Identify species.
- Identify sex.
- Identify reproductive status.
- Follow WNS decontamination protocol!!!

Aging bats

- Swollen and/or gap in joints
- Teeth



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A. IMMATURE

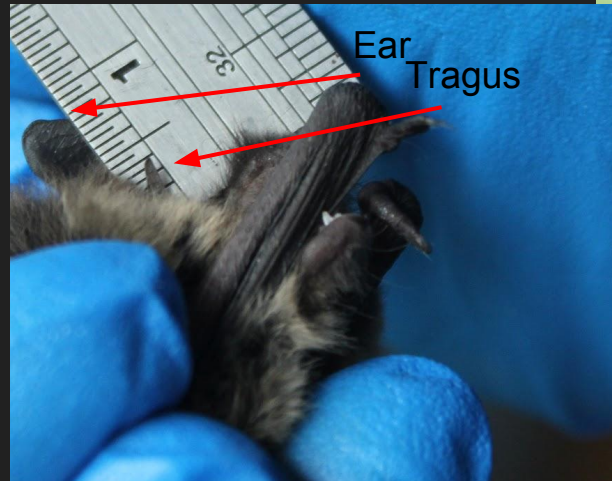


B. ADULT

FIGURE 24

Morphometrics

- Forearm
- Weight
- Tragus length
- Ear length



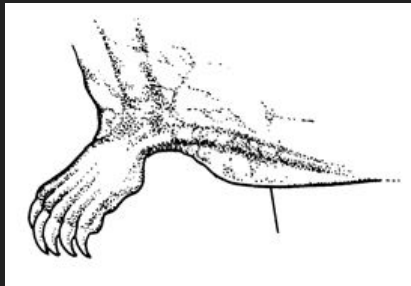
Identifying species

- Morphometrics
- Acoustics
- Molecular
 - Accurate but logistically complicated in the field
-



Morphometrics

- Fur colour
- Forearm length
- Presence or absence of fringe on tail membrane
- Presence or absence of keel on calcar



Sex and reproductive status



Acoustics



Little brown bat



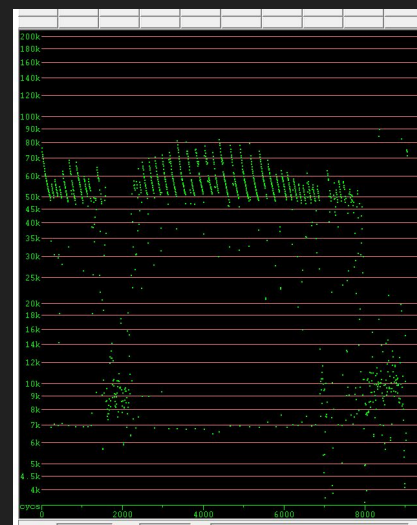
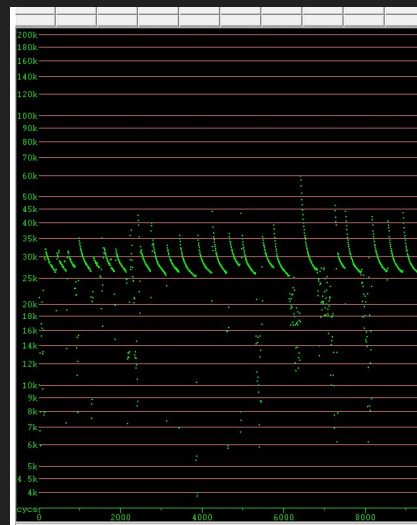
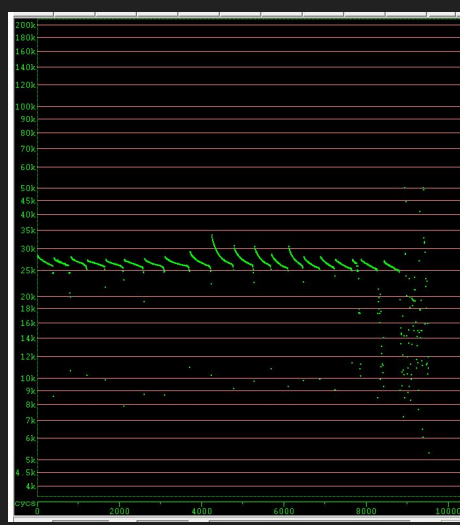
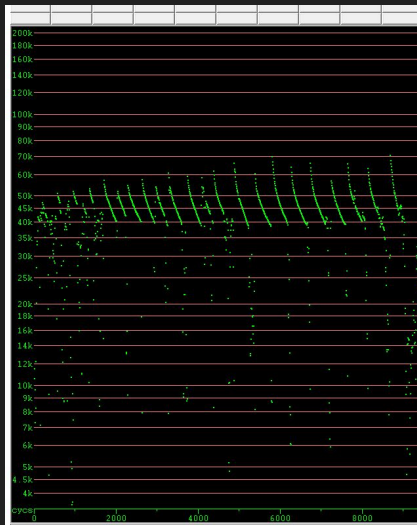
Hoary bat



Big brown bat



Yuma myotis



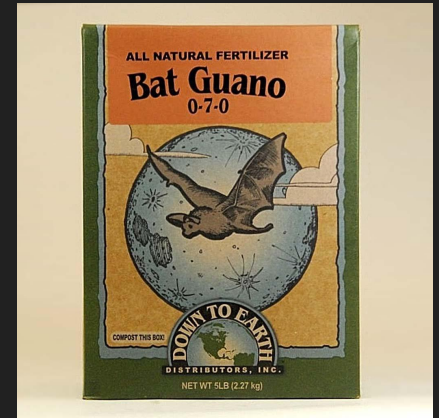
Ecosystem services

- Pollination
- Seed dispersal
- Pest control



Other services

- Gardening
- Human health
- Aircraft technology



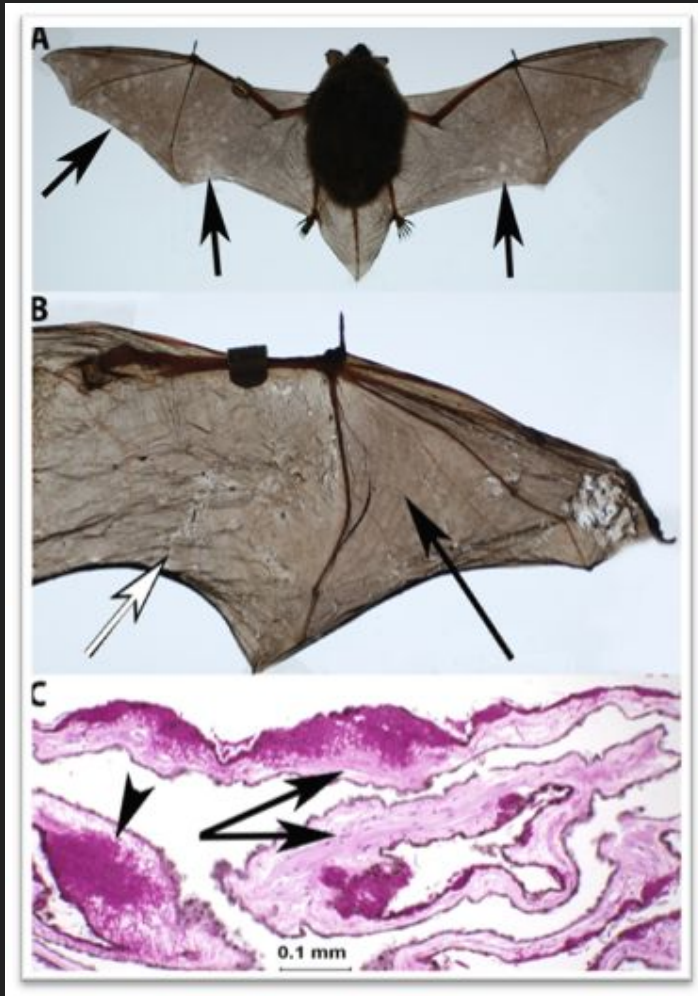
Threats

- White Nose Syndrome
- Habitat loss
- Pollution
- Wind farms

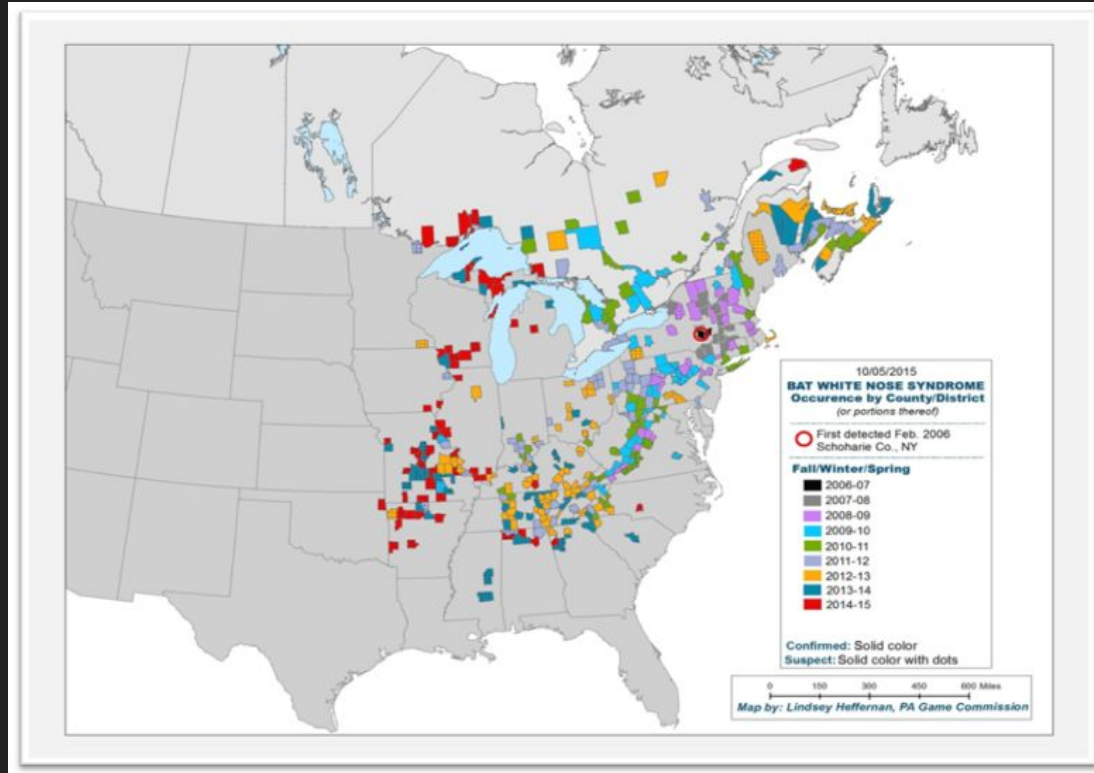


White Nose Syndrome

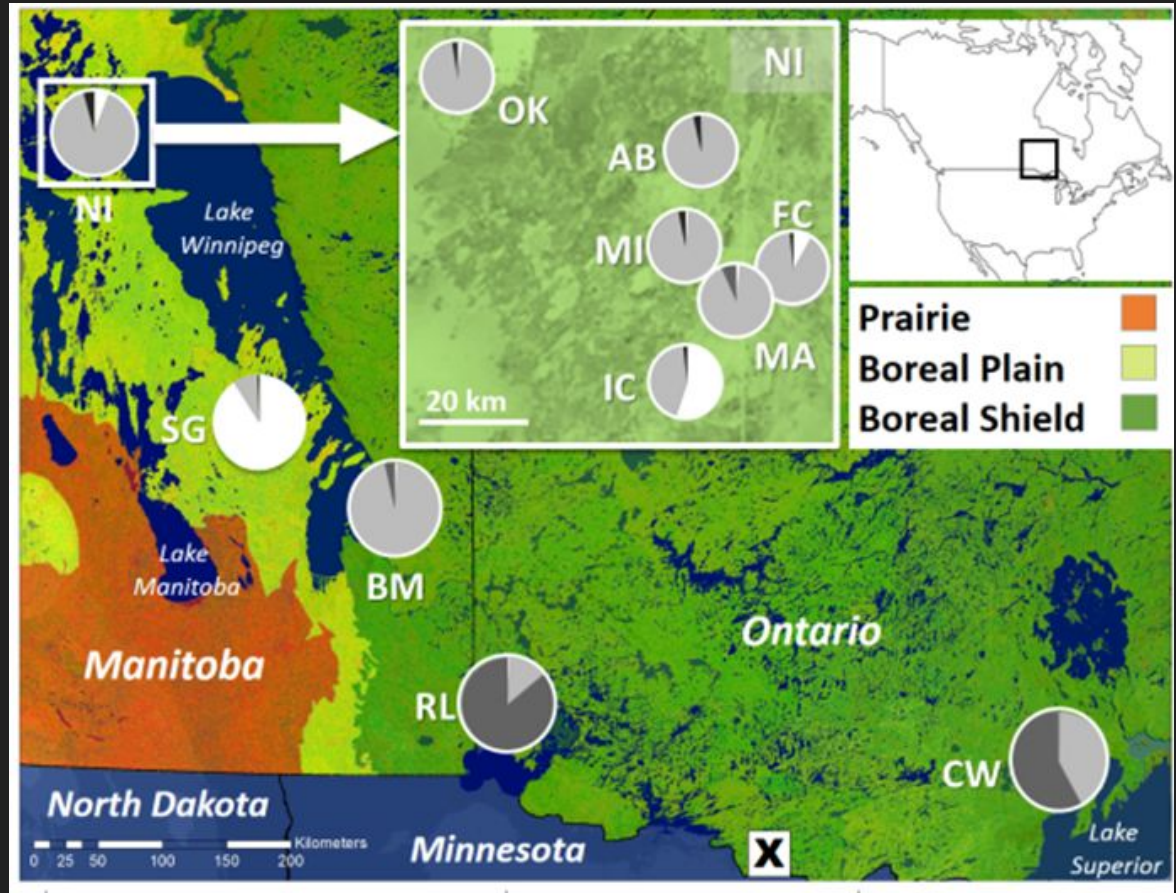
- Affects hibernating bats
 - Bats die of starvation and dehydration



White Nose Syndrome



Bats gene flow



SCBAT

- What and Who is SCBAT
 - Group professional biologists, naturalists, students... Everyone!
 - Slowly growing since 2010 (NGO soon).
 - Part of the BC Bat Community Network.

SCBAT

- Goals
 - Find out more about bats and their roosts
 - Increase protection for existing bat roost
 - Provide bat education.



Goals

- Find out more about bats and roosts



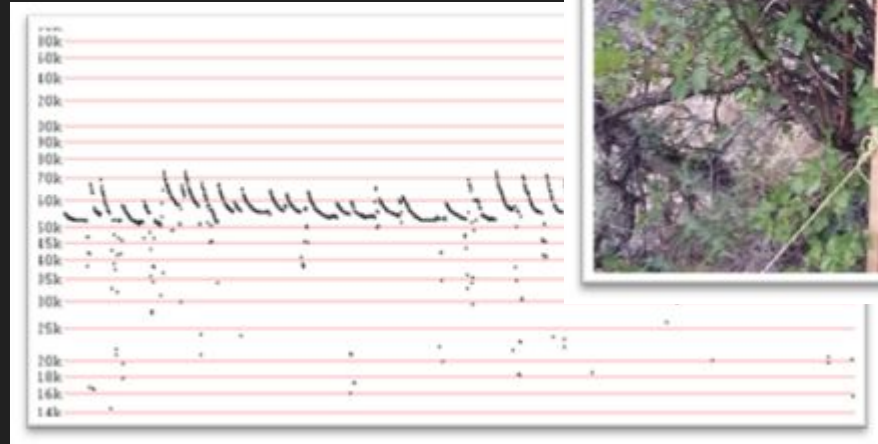
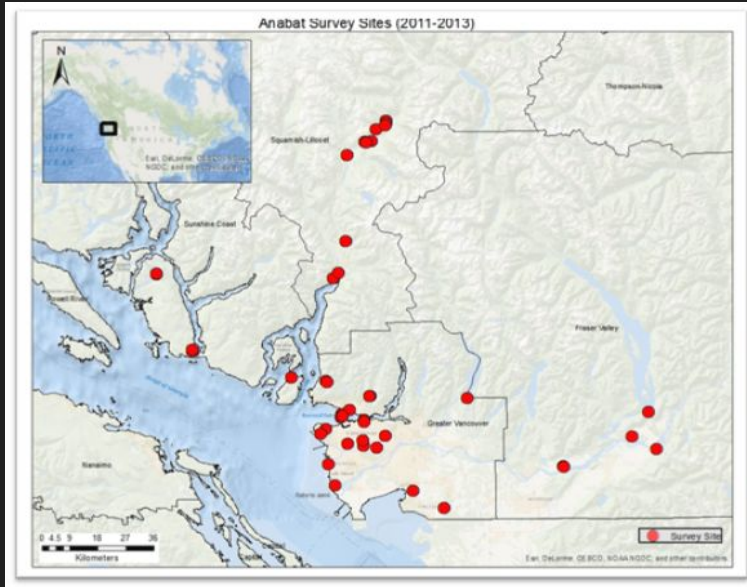
What are we doing?

- Find out more about bats and their roosts



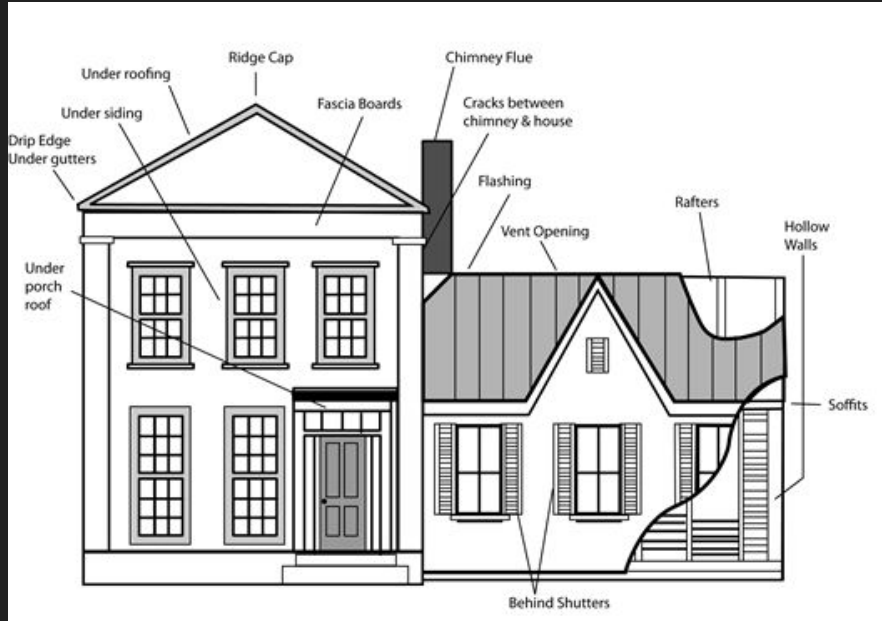
What are we doing?

- Acoustic surveys



Goals

- Increase protection for existing bat roosts



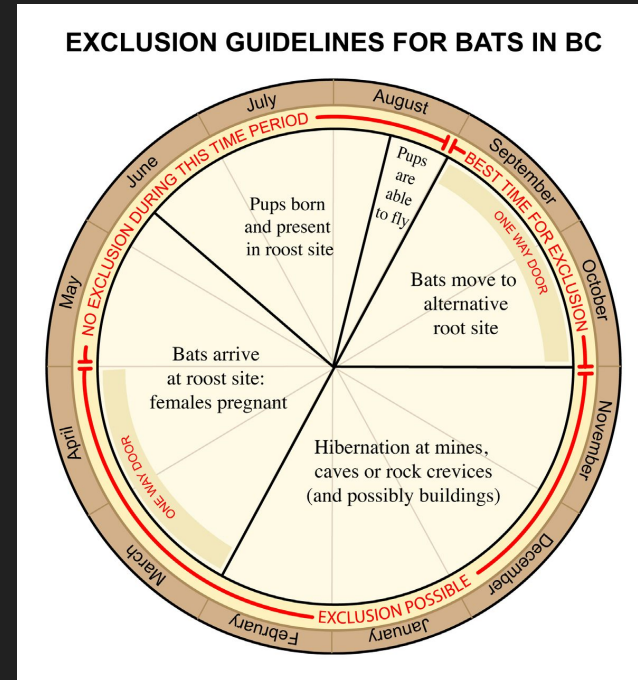
What are we doing?

- Work with
 - Landowners
 - Contractors
 - Builders
 - Pest and wildlife control companies



What are we doing?

- Provide information on how to manage bats
 - Leave bats where they are (best option)
 - Exclude bats (follow proper protocol)
 - Enhance bat habitat
 - Bat houses



Goals

- Provide bat education



What are we doing?

- Reach the community
- Organize workshops
- Talk about bats!



Partnerships

- Conservation organizations.
- Env. Consulting companies.
- Parks.
- Landowners.
- Naturalists.
- Anybody who wants to monitor bats in their community!

Funding



Questions????



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