



# Sequence of Bat Arrival and Spring Bat Activity in Central Wisconsin

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# Introduction

Project:

Gather first arrival data of bat species in Schmeckle Reserve, Stevens Point, Wisconsin using a bioacoustics survey.

- Identify bat species by sonograms recorded by Anabat detector in spring 2010 and 2011

# Importance

Modern threats to bat populations:

- WNS syndrome—affects hibernating bat species, especially the Little Brown Bat and Northern Myotis
- Wind Farms—affects mostly migratory bats, such as Silver Haired Bat, Hoary Bat and Red Bat.

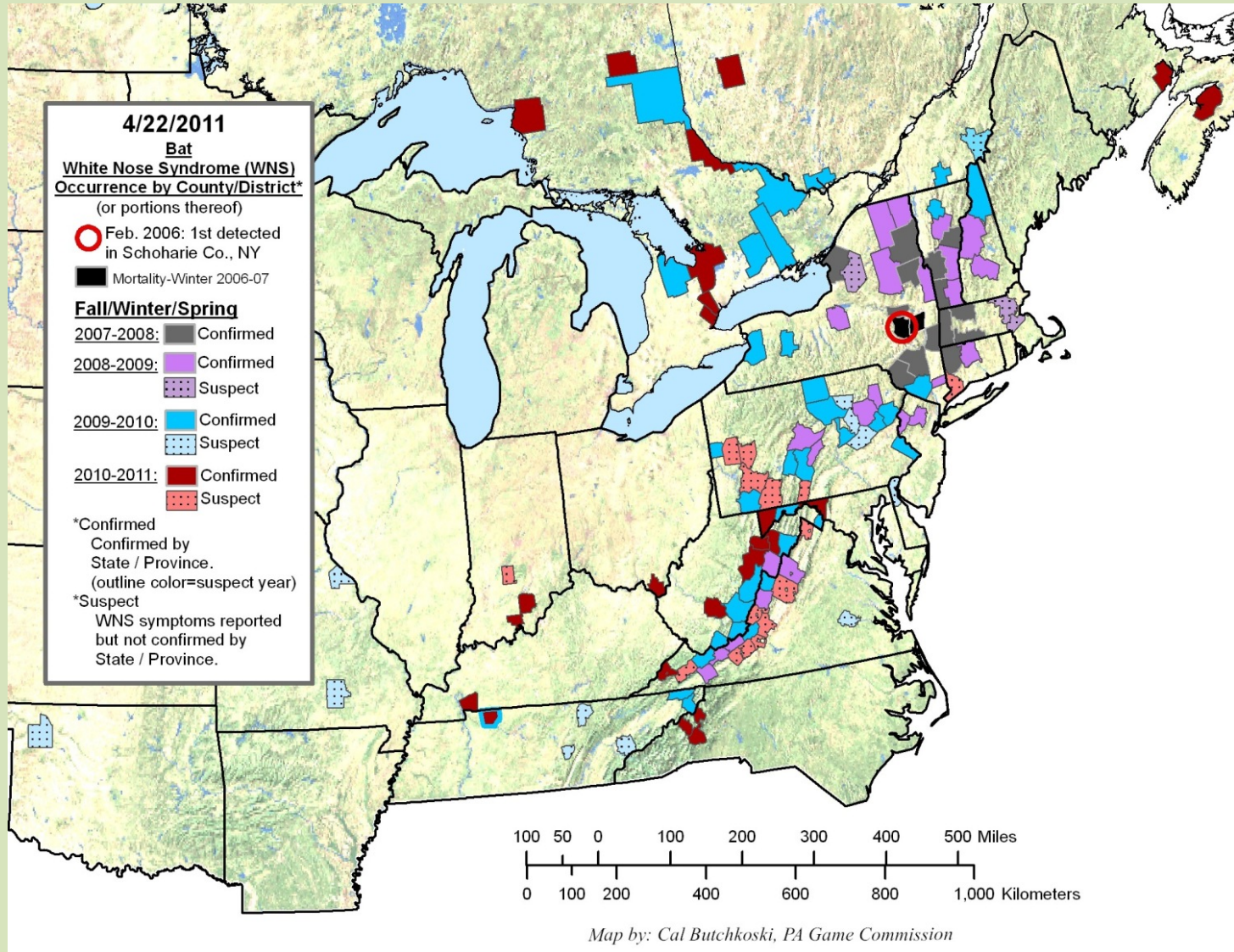
Bats are ecologically and economically valuable

- Insectivorous

# What is White Nose Syndrome?

- White Nose Syndrome (WNS) is a fungus, *Geomyces destructans*, that affects hibernating bats.
- Believed to disturb bats during hibernation causing stress and death.
- First discovered in New York in 2006.
- Spreading in South and Eastern direction.
- Could reach Wisconsin this summer.
- Causing mass mortality.

# Current WNS Distribution



# Bats of Wisconsin

## Cave-dwelling bats

- Big Brown Bat

*Eptesicus fuscus*

- Little Brown Bat

*Myotis lucifugus*

- Northern Myotis

*Myotis septentrionalis*

## Migrating Bats

### (Tree Bats)

- Silver Haired Bat

*Lasionycteris noctivagans*

- Hoary Bat

*Lasiurus cinereus*

- Red Bat

*Lasiurus borealis*

- Indiana Bat

*Myotis sodalis*

- Eastern Pipestrelle

*Pipistrellus subflavus*

# Schmeeckle Anabat Dectector



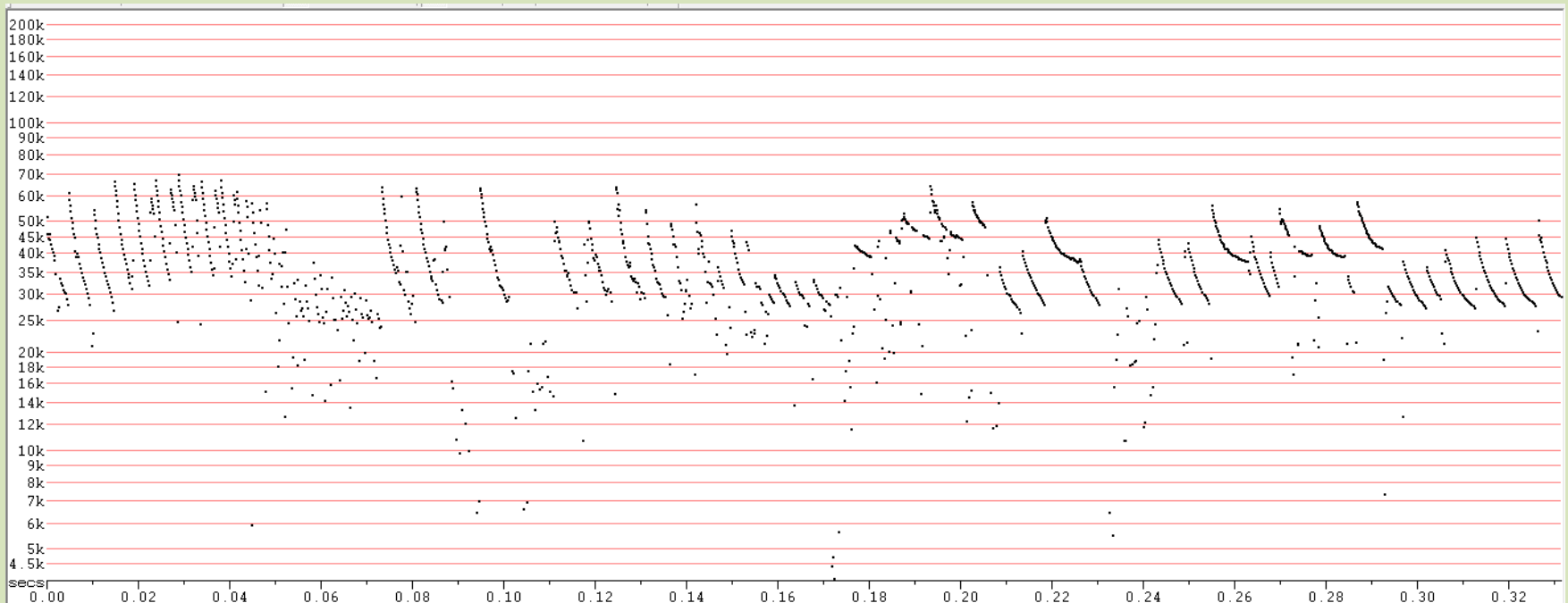
- Permanent Anabat, dedicated in 2007
- Solar powered, turns on when a bat is detected
- Records bat echolocation calls, time and date.
- Generates sonograms which can be viewed with Analook software

# Limitations

Bats produce different kinds of calls

- Search calls
- Feeding Buzz

Individual species difficult to identify.

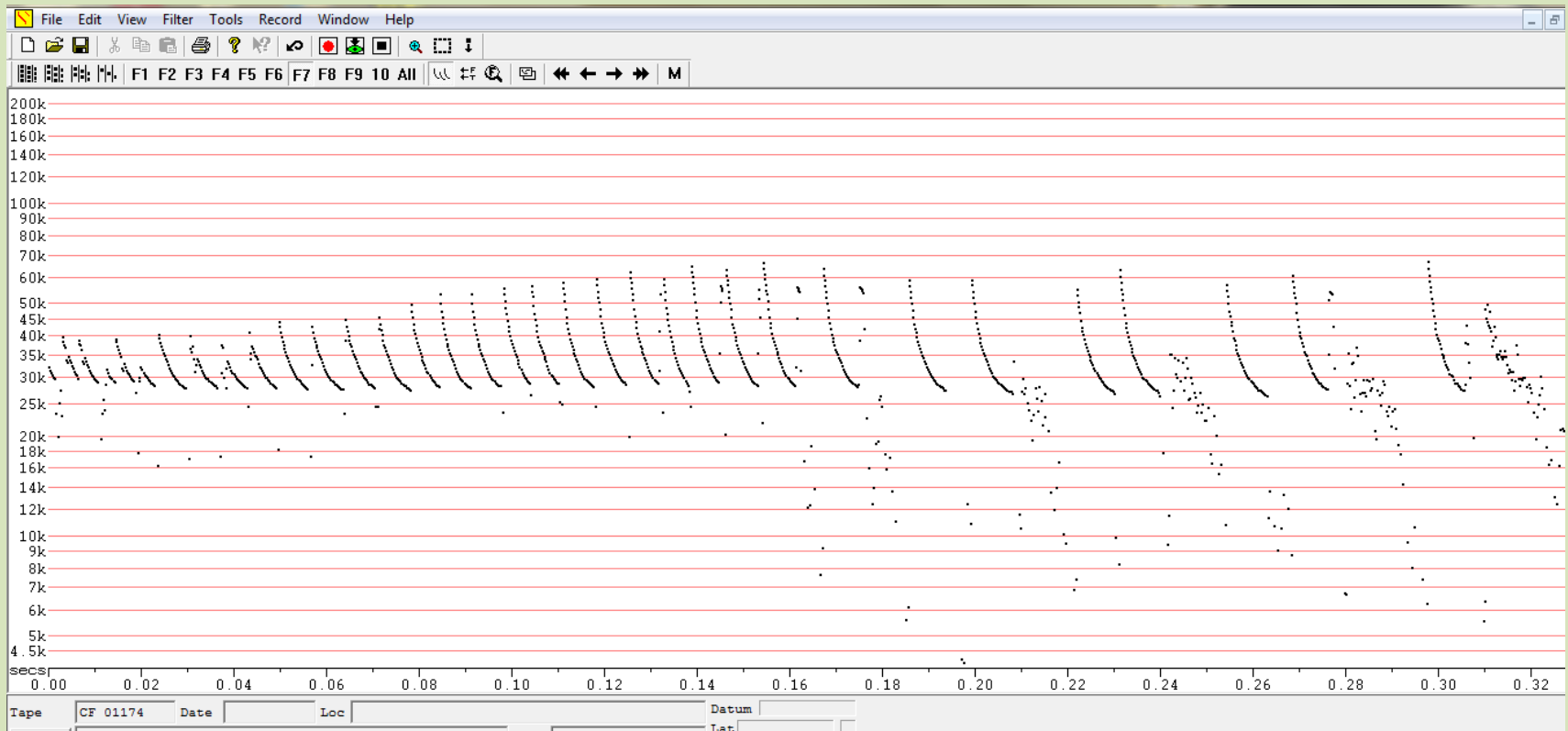




# Big Brown Bat/ Silver Haired Bat

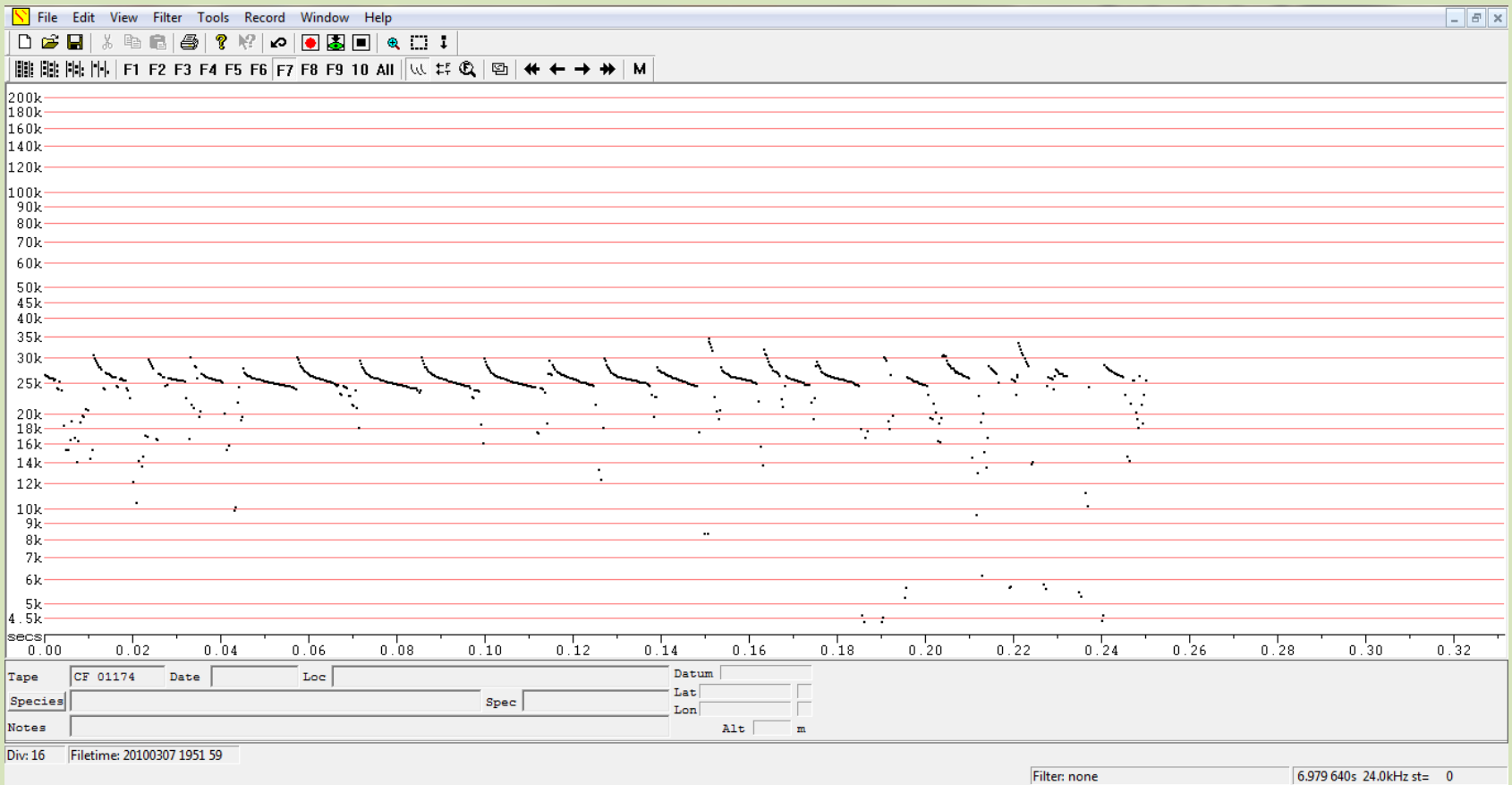
Frequency range - Big Brown Bat– 25-60 kHz

Silver Haired Bat 25-40 kHz



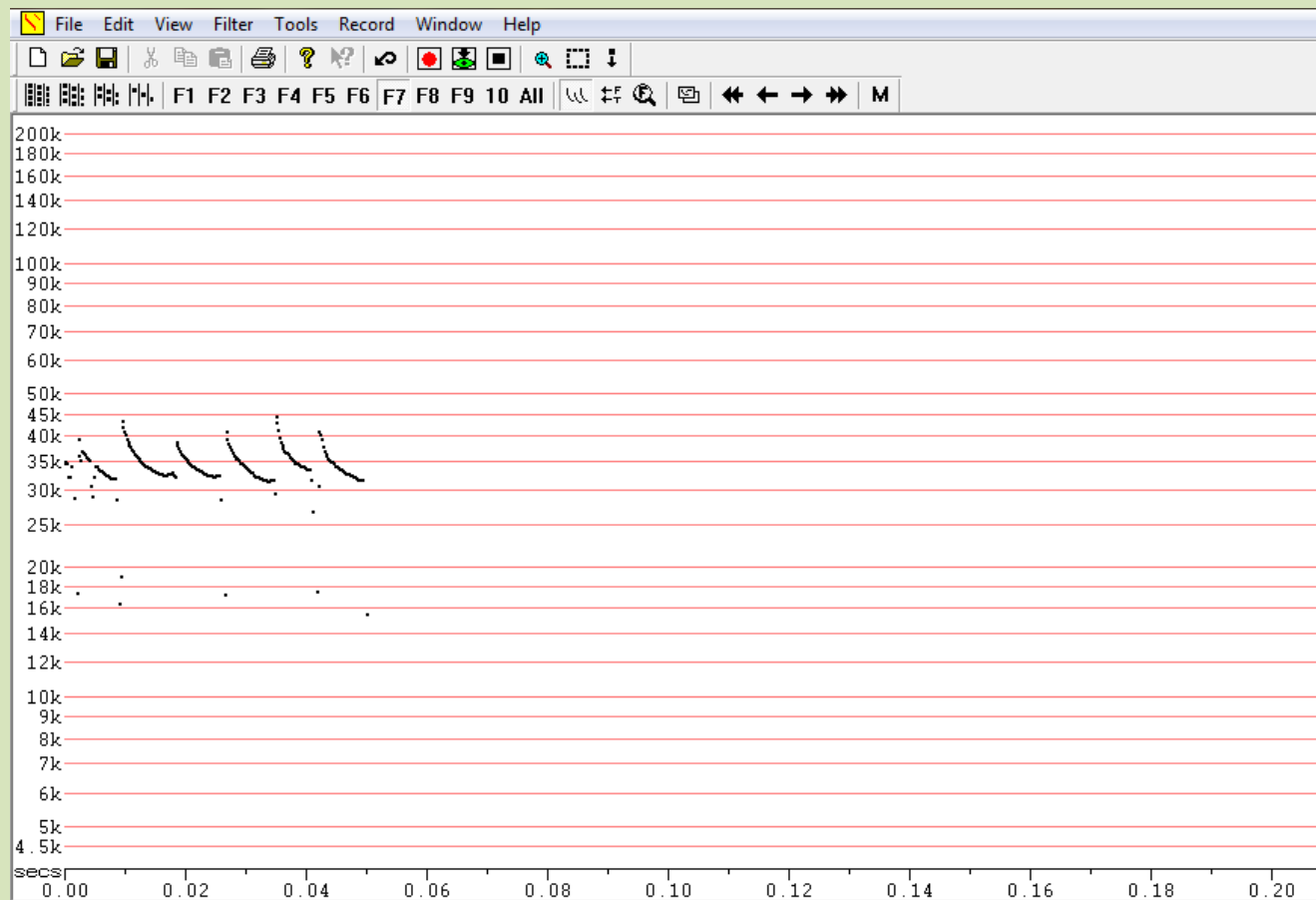
# Hoary Bat

- Frequency—18—35 kHz



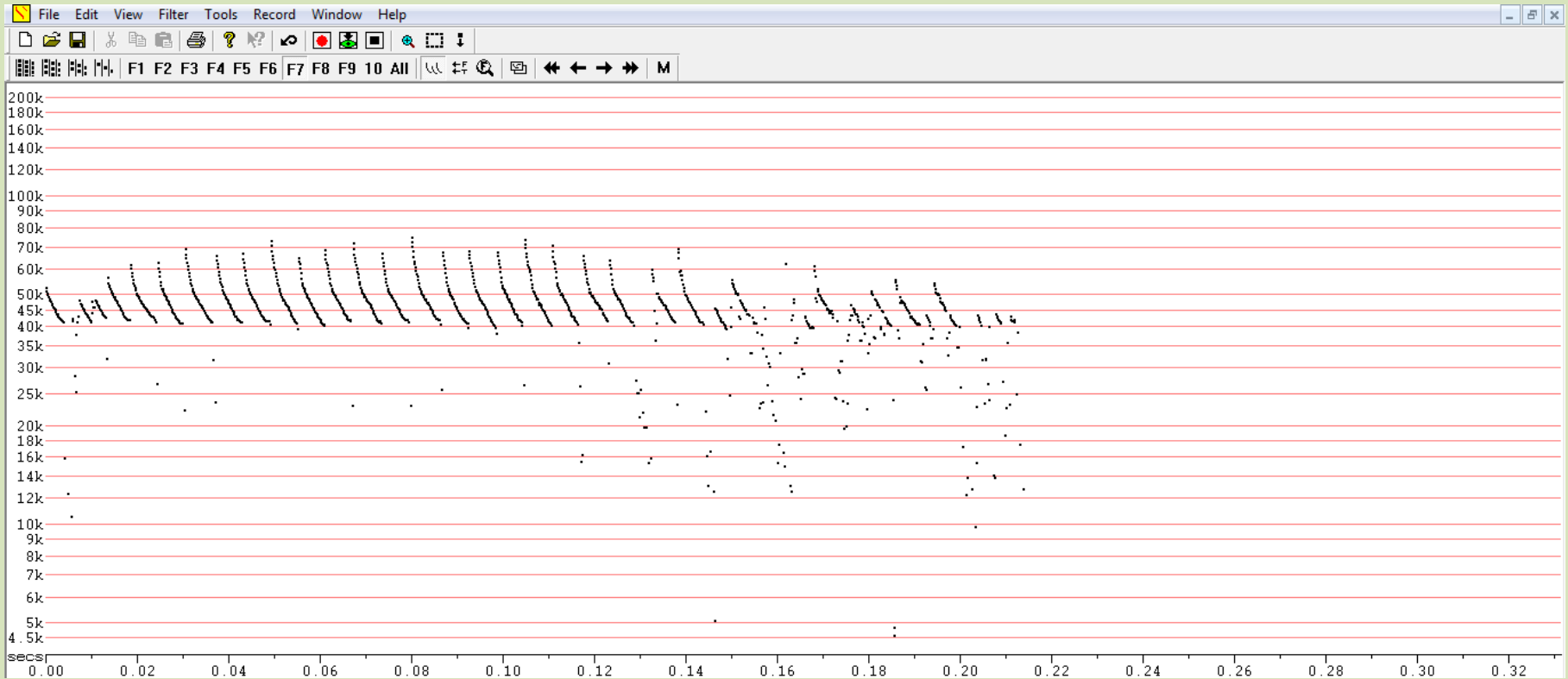
# Red Bat/Eastern Pipestrelle

- Frequency-30-45 kHz



# Little Brown Bat

- Frequency- 40—80 kHz



# First Arrivals

- 2010

- February 17

- Hoary Bat 7:32pm 32°f

- Silver Haired/Big Brown 9:44pm

- April 4

- Eastern Red/Pipestrelle 3:06 am 43°f

- April 27

- Little Brown/Northern Myotis 10:14pm  
48°f

- 2011

- March 1

- Silver Haired 8:31 40°f

- March 4

- Hoary Bat 8:01 38°f

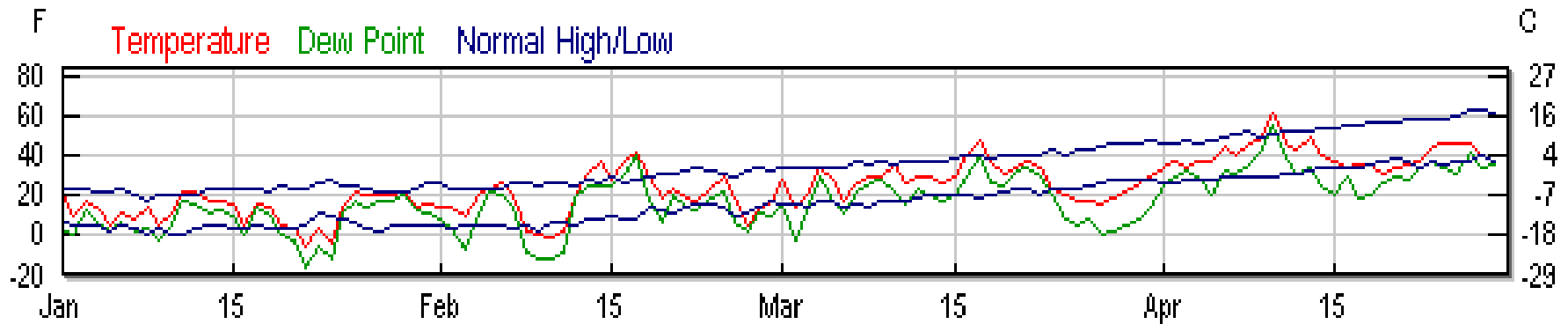
# General Trends

- Active
  - Hoary Bat 8:30-9:00pm
  - Silver Haired/Big Brown 8:15pm
  - Eastern Red/Pipestrelle 9:30-10:00pm
  - Little Brown/Northern Myotis 10:15pm

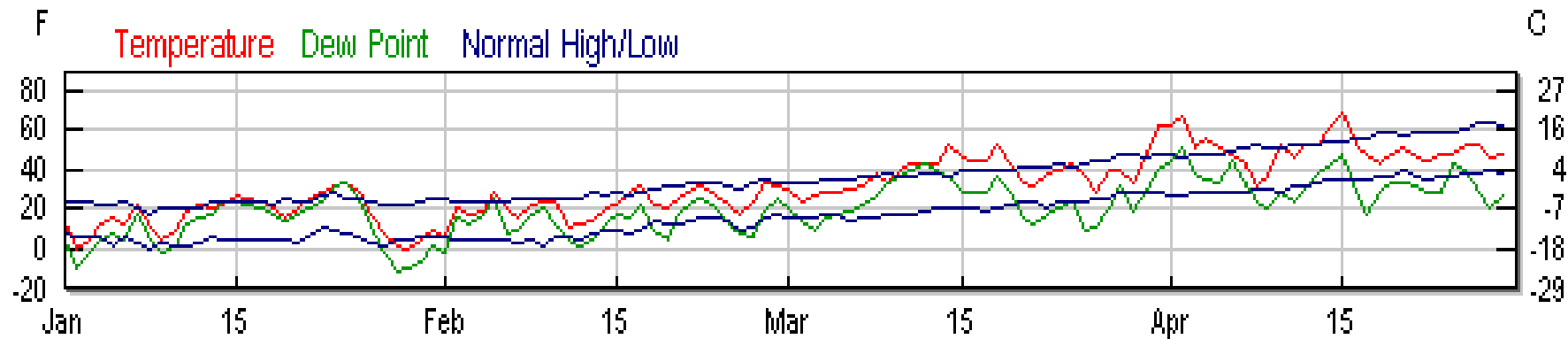
\*temperature trends

>30°f

# 2011

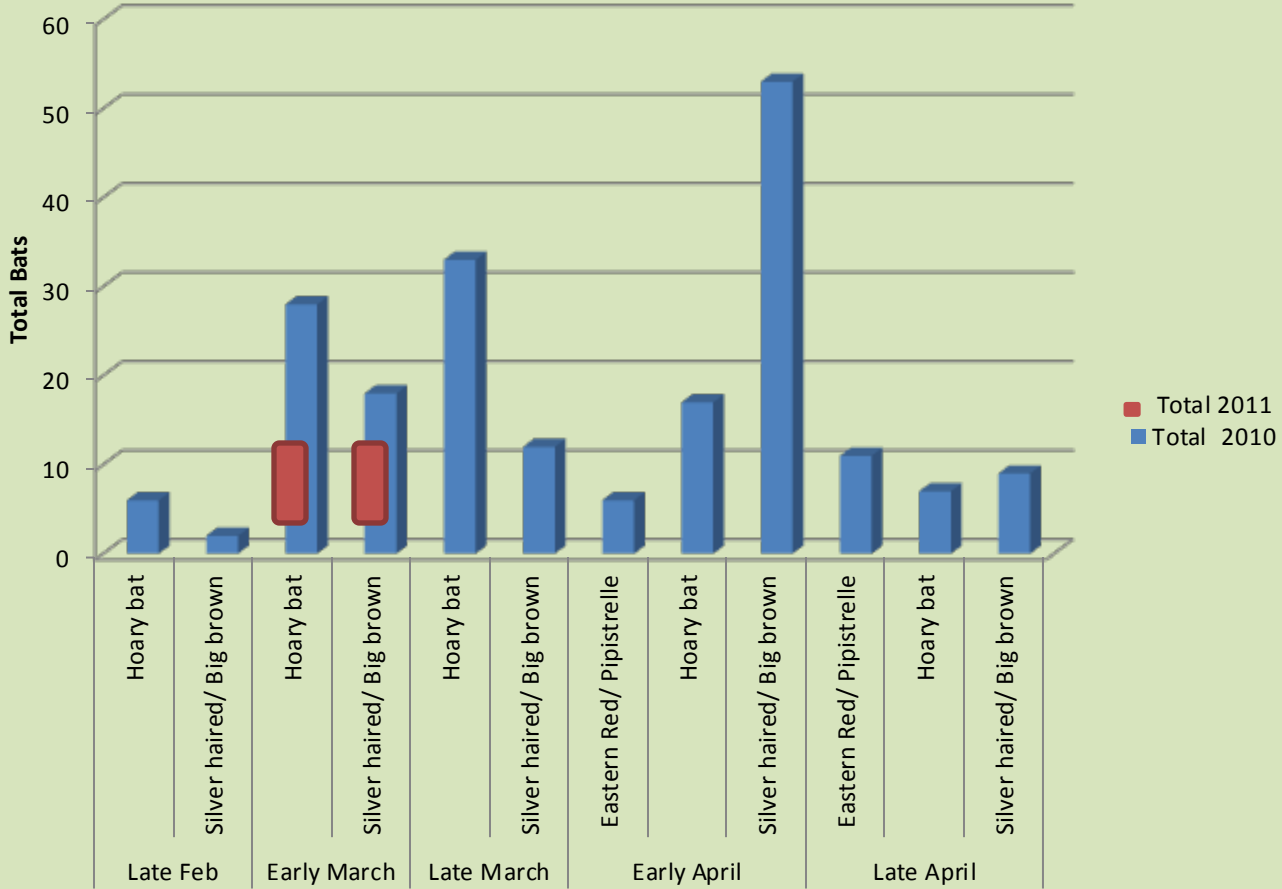


# 2010

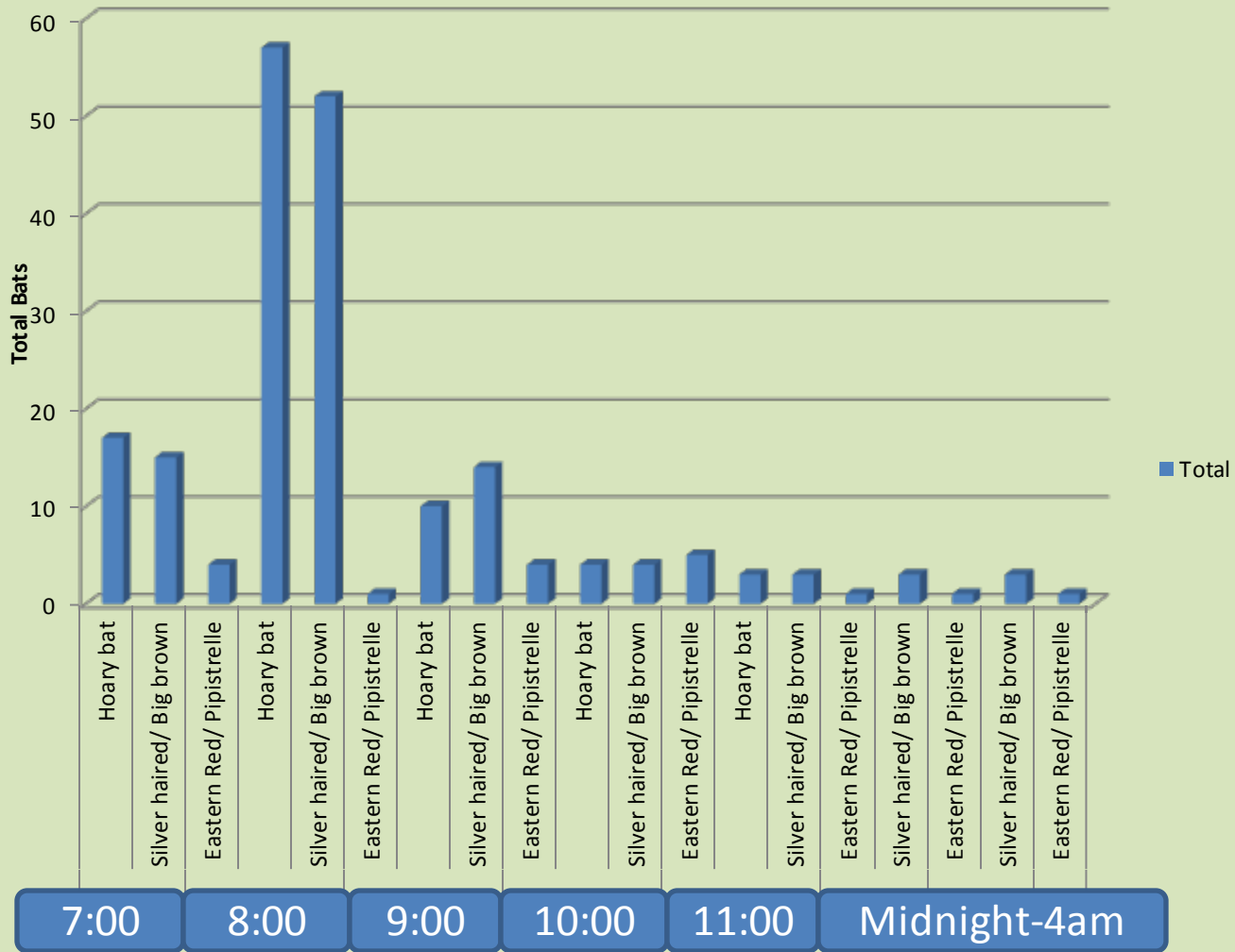




# 2010-2011 Monthly Bat Species Frequency



# Bat Activity Times



# Conclusion