

Georgia Department of Natural Resources

SCCI Research Permit Report

**Covering data collected by GA DNR,
Contractors and Assistants for the Period of
2005 – 2020**



Jackie Beck and Trina Morris at Howard's Waterfall Cave Entrance in 2015.

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Summary

Biologists with the Georgia Department of Natural Resources (GA DNR) have been working with Southeastern Cave Conservancy, Inc. (SCCI) members for many years to complete inventory and conduct research. This work has been completed by GA DNR employees, subcontractors, university employees and students as well as volunteers and SCCI members.

In recent years, Trina Morris has been leading research related to White-Nose Syndrome (WNS) in winter and completing inventory at colonies in the summer. She has worked with SCCI and other cooperators to continue surveys that have been conducted over many years as well as to begin new survey efforts at sites affected by WNS.

This report will summarize the work completed from 2005-2020 at SCCI caves in Georgia. The GA DNR greatly appreciates the opportunity to work at these sites and hopes to continue to monitor bats at SCCI sites in the future.

White-nose Syndrome (WNS) Surveys

Since 2006, White-Nose Syndrome (WNS), a disease caused by an introduced fungus *Pseudogynascus destructans* (Pd), has been plaguing bats across North America. Beginning in New York, WNS has been spreading each year through the US and Canada. In 2013, the presence of Pd was confirmed in the state of Georgia. The very next year, bat numbers were down 36%. Biologists continue to survey the hibernacula these imperiled bat species inhabit and have noted drastic declines in most sites. This year, total bat numbers at sites surveyed across north Georgia were down 93% from their highest previous counts.

The following are results and notes from surveys at two SCCI caves.

Date: April 3rd, 2013
Location: Howard's Waterfall Cave
County: Dade
WNS Positive: 2014

Surveyors
Kyle Oden
Jerry Wallace

Bats Observed
212 *Perimyotis subflavus* (tri-colored bat)

Date: March 17th, 2014
Location: Howard's Waterfall Cave
County: Dade
WNS Positive: 2014

Surveyors
Trina Morris
Pete Pattavina (USFWS)
Jackie Beck (GADNR)
Chris Coppola
Jerry Wallace

Bats Observed
134 *Perimyotis subflavus* (tri-colored bat)

Date: March 11th, 2015
Location: Howard's Waterfall Cave
County: Dade
WNS Positive: 2014

Surveyors
Trina Morris
Jackie Beck (GADNR)
Pete Pattavina (USFWS)
Blake Ellett (Mulkey Engineers & Consultants)

Bats Observed
53 *Perimyotis subflavus* (tri-colored bat)

Date: January 25th, 2016
Location: Howard's Waterfall Cave
County: Dade
WNS Positive: 2014

Surveyors
Trina Morris
Jackie Beck
Rebekah Tuck (GADNR)
Pete Pattavina (USFWS)
Steve Davis (SCCI)
Craig Lucie, Lean Dunn, Terah Boyd (WSBTV)

Bats Observed
58 *Perimyotis subflavus* (tri-colored bat)

Date: March 9th, 2017
Location: Howard's Waterfall Cave
County: Dade
WNS Positive: 2014

Surveyors
Trina Morris
Cindy Alcazar
Leanne Burns (GADNR)

Bats Observed
23 *Perimyotis subflavus* (tri-colored bat)

Date: March 8th, 2018
Location: Howard's Waterfall Cave
County: Dade
WNS Positive: 2014

Surveyors
Trina Morris
Emily Ferrall
Bronson Curry (GADNR)

Bats Observed
34 *Perimyotis subflavus* (tri-colored bat)

Date: March 10th, 2020
Location: Howard's Waterfall Cave
County: Dade
WNS Positive: 2014

Surveyors
Trina Morris
Julia Yearout (GA DNR)
Christine Walkey (SCCI)

Bats Observed

23 *Perimyotis subflavus* (tri-colored bat)

Howard's Waterfall Cave has been sampled from 2013 to 2020, and only *Perimyotis subflavus* have been observed at this site. This cave was first sampled in April 3, 2013 by Jerry Wallace and Kyle Oden. The bat population at this time showed no signs of visible fungus. Numbers began to decrease in 2014, and 35% of all bats showed visible signs of fungus. The presence of white-nose syndrome was confirmed at this site in 2014. In 2015, about 50% of all bats showed visible signs of WNS. Bat numbers actually increased for the site in 2016, but that is likely due to the timing of the count being early to assist with a media story covering WNS in Georgia. As was expected, bat numbers dropped in 2017, likely due to a later season survey and high humidity conditions in the cave ideal for fungal growth. We saw another increase in numbers for the 2018 survey, but overall, there has been an 84% decline in bat numbers since peak numbers in 2013. The 2020 survey showed a 32% decline in numbers from the 2018 survey and 22% of bats surveyed showed visible signs of WNS. Bat counts have decreased significantly over this time period dropping from 212 bats in 2013 to 23 bats in 2020.

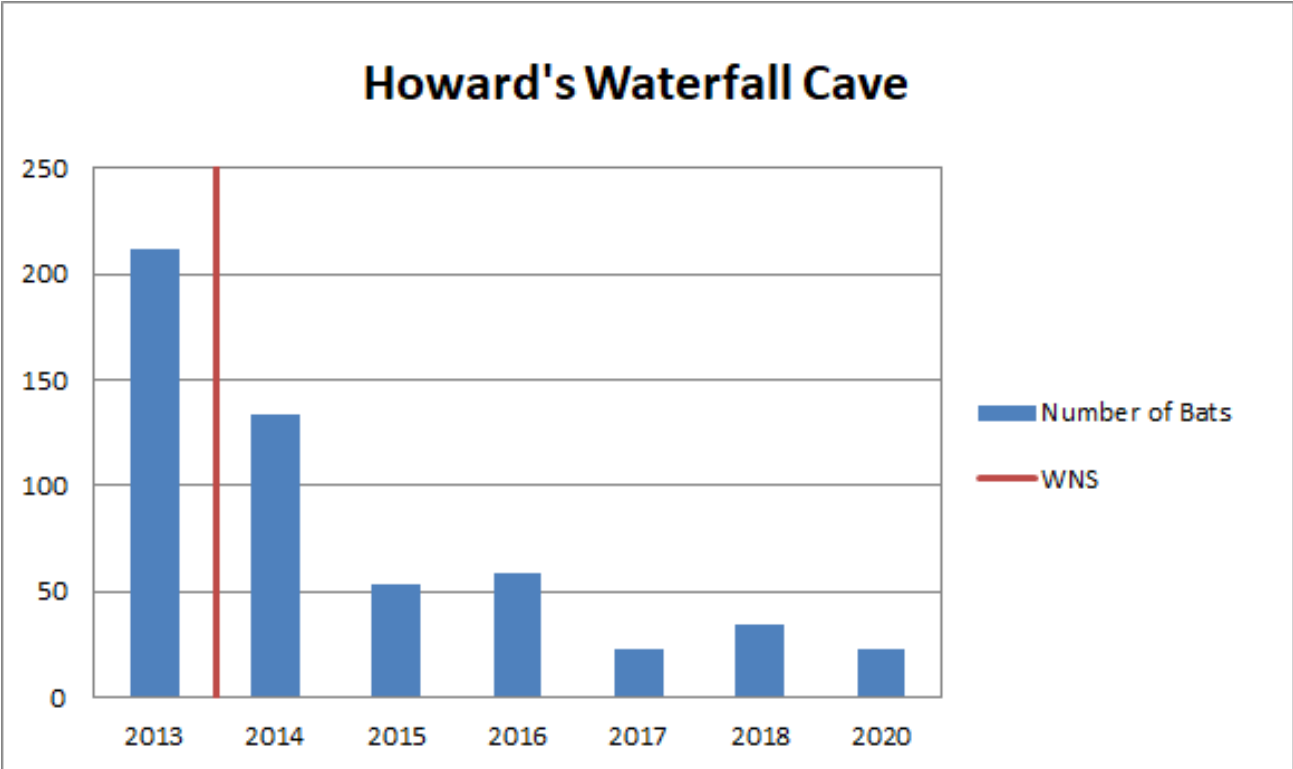


Figure 1. Bat Counts at Howard's Waterfall Cave from 2013 to 2020.



Photo 1: Trina Morris looking for bats during a survey. Photo by Emily Ferrall.

Date: February 15th, 2014
Location: Frick's Cave
County: Walker
WNS Positive: 2014

Surveyors
Brad Barker
Alan Cressler

Bats Observed

1503 *Perimyotis subflavus* (tri-colored bat)
30 *Myotis grisescens* (gray bat)
4 *Eptesicus fuscus* (big brown bat)
9 *Myotis* spp. (Unknown *Myotis*)

Date: February 28th, 2015
Location: Frick's Cave
County: Walker
WNS Positive: 2014

Surveyors
Trina Morris
Pete Pattavina (USFWS)
Nikki Castleberry (GMNH)

Bats Observed

1023 *Perimyotis subflavus* (tri-colored bat)
34 *Myotis grisescens* (gray bat)
6 *Eptesicus fuscus* (big brown bat)
3 *Myotis* spp. (Unknown *Myotis*)

Date: February 27th, 2016
Location: Frick's Cave
County: Walker
WNS Positive: 2014

Surveyors
Trina Morris
Jackie Beck
Rebekah Tuck (GADNR)
Pete Pattavina (USFWS)
Henry & Adam Pattavina
Kevin Townsend (GA DNR Volunteers)

Bats Observed

317 *Perimyotis subflavus* (tri-colored bat) + 1 dead
11 *Myotis grisescens* (gray bat)*
1 *Eptesicus fuscus* (big brown bat)

*The roosting site for gray bats was inaccessible so the count was incomplete.

Date: February 2nd, 2017
Location: Frick's Cave
County: Walker
WNS Positive: 2014

Surveyors
Trina Morris
Cindy Alcazar
Leanne Burns
Laci Coleman (GADNR)
Dan Forster
Trent Forster
Kevin Townsend (GA DNR Volunteers)

Bats Observed

282 *Perimyotis subflavus* (tri-colored bat) + 1 dead
40 *Myotis grisescens* (gray bat)

Date: February 17th, 2018
Location: Frick's Cave
County: Walker
WNS Positive: 2014

Surveyors
Trina Morris
Emily Ferrall
Bronson Curry (GADNR)
Jackie Beck
Becky Punder
Kevin Townsend (GADNR Volunteers)

Bats Observed

249 *Perimyotis subflavus* (tri-colored bat) + 1 dead
29 *Myotis grisescens* (gray bat)

Date: February 8th, 2020
Location: Frick's Cave
County: Walker
WNS Positive: 2014

Surveyors
Trina Morris
Sarah Krueger
Emily Ferrall (GADNR)
Leonard Williams
Kevin Townsend (GADNR Volunteers)

Bats Observed

341 *Perimyotis subflavus* (tri-colored bat)
31 *Myotis grisescens* (gray bat)
2 *Eptesicus fuscus* (big brown bat)

Frick's Cave was first sampled in February 15, 2014 by Alan Cressler and Brad Barker. The presence of white-nose syndrome was confirmed in 2014. There was a 31% decrease in counts from 2014 to 2015. About 75% of *Perimyotis subflavus* bats had visible fungus in 2015. There were 41 dead bats at the site in 2015, which is a significant increase from 2014 which had only 6 dead bats. In 2016 the gray bat count was incomplete due to poor accessibility. We continued to see a downward trend in numbers for both tri-colored bats and gray bats in 2018. However, the 2020 survey showed an increase in tri-colored and gray bats from the year before. There is a 76% overall decline in bat numbers at Frick's Cave since 2014.

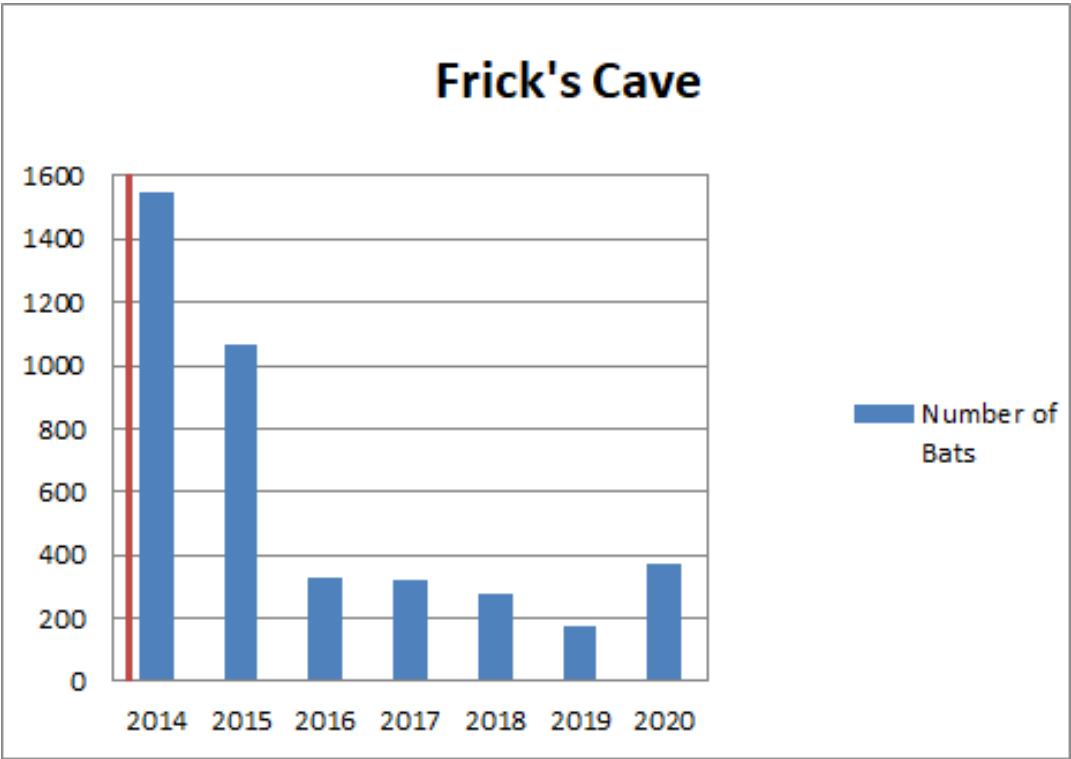


Figure 2. Bat Counts at Frick's Cave from 2014 to 2020.



Photo 2: A tri-colored bat showing obvious signs of fungal growth caused by WNS. Photo by Emily Ferrall.

Frick's Cave Emergence Counts

Summer colony counts at Frick's Cave vary from year to year. This is expected because this site is primarily a gray bat (*Myotis grisescens*) bachelor colony. Also, the timing of surveys and different methods used over the years may have contributed to some variation in numbers. Even though counts are highly variable, it is still important to look at average numbers over time. This long-term data set will help us to make decisions about trends in numbers and conservation measures in the future.

On August 27, 2005 visual counts estimated 4,490 gray bats exiting the Frick's cave. In 2006, visual counts were made for both the main and skylight entrances. Visual counts of the main (lower) entrance estimated 551 bats while 7 bats were counted leaving the skylight (upper secondary entrance) for a total of 558 bats. In 2007, Frick's was monitored for three consecutive nights using both video cameras and visual counts from June 13-15, to assess nightly variation in numbers. Using visual counts the estimates for June 13th was 1,343, June 14th 1,128, and June 15th 2,228). Actual counts using the video camera yielded 2,631, 2,146, and 3,497 for the 3 nights, respectively. Total counts of bats leaving via the skylight entrance were 14 on June 13th and 13 on June 14th.

In 2008, Fricks Cave was sampled on three consecutive days (July 7-9). Colony size estimates were obtained for the first two days, but on July 9th sampling was halted due to bad weather. The visual counts yielded estimates of 3,762 and 3,140 bats emerging during the July 7 and July 8 observations respectively. In 2010, lights were positioned better rendering useable video colony estimates, which put colony size at 4,287.

The T3 software program was used to estimate bat emergence in 2012, with a result of between 5,054 and 6,667 bats.

The same software was used in 2013 and a total of between 3,275 and 4,275 bats was estimated.

In 2014, T3 estimated between 2,745 and 2,895 bats; in 2015 the estimate was between 1,755 and 2,485 bats. In 2016, the software estimated there to be 3,156 gray bats emerging from Frick's Cave.

Emergence counts have not been completed since 2015 because we are waiting on an update to our camera and software system. We will resume counts when new equipment is available.

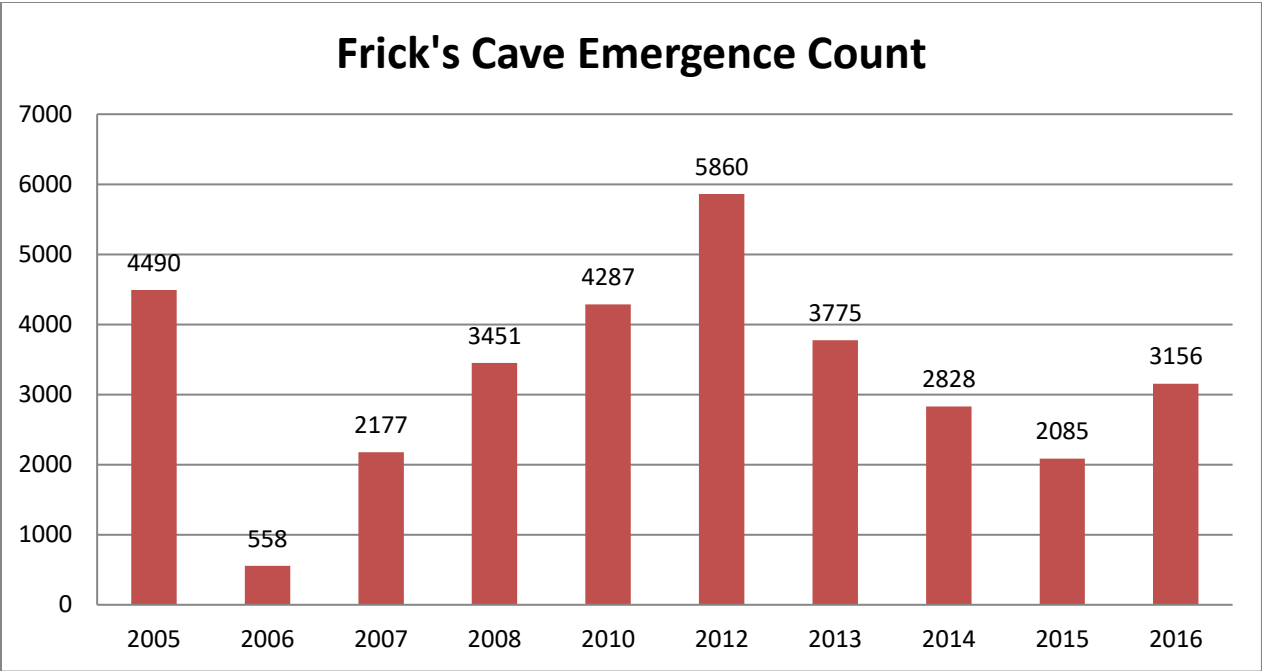


Figure 3. Average counts for emergence counts completed from 2005 to 2016.

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