

Northeastern Cave Conservancy News

Volume 20, Number 2

June 2018



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<p>The <i>Northeastern Cave Conservancy News</i> is published quarterly by the Northeastern Cave Conservancy, Inc. The Northeastern Cave Conservancy promotes the study and preservation of speleologically significant properties in the northeastern United States. Annual membership is \$20 (Regular), \$5 (Additional Family), \$50 (Benefactor), \$100 (Institutional), \$125 (Family Life Membership), and \$400 (Life Membership). All checks made payable and sent to:</p> <p>Northeastern Cave Conservancy Inc. · P.O. Box 254 · Schoharie, N.Y. 12157</p> <p style="text-align: center;">www.necaveconservancy.org</p>		

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Next Board Meeting

**Sunday, June 3, 2018 at 11:00 am
 Home of Michael Chu - Melrose, NY**

**Summer Board Meeting
 (Date and location in September TBD)**

The Northeastern Cave Conservancy, Inc. (NCC) is a not-for-profit corporation committed to the conservation, study, management, and acquisition of caves and karst areas having significant geological, hydrological, biological, recreational, historical, or aesthetic features.

To these ends, the NCC combines the resources and expertise of affiliated cave explorers, educators, scientists, landowners, and conservation officials.

The NCC programs are focused mainly on the preservation of caves and karst. Outreach includes education in schools and local communities, establishment of park spaces on karstlands, and educational messages about the significance of groundwater pollution on this sensitive underground ecosystem.

NCC members assist in the exploration, survey, and protection of these natural resources, and manage them so you can explore them yourself.



40th NCC Anniversary logo design adapted by Eva Hunter



Northeastern Cave Conservancy, Inc. Committed to the conservation, study, management, and acquisition of caves and karst areas having significant geological, hydrological, biological, recreational, historical, or aesthetic features.

PRESIDENT'S UPDATE

So it's May; the caves are opening; plans are being made; it's a great time of year. I just wanted to give our Members a little update on a number of things the NCC has been working on over the winter months. Some of these items have already made it onto the social media sites and regional publications, so I'll apologize for any redundancy. Here we go, in no specific order of importance...

Update on the Clarksville Addition/Fundraising - The NCC has entered into a contract to obtain additional acreage to consolidate the Clarksville preserve and protect the southern reaches of the cave system. The NCC is purchasing approximately three acres of land (survey in progress), which will link our Gregory Entrance parcel (0.6 Acre) and our Ward Entrance parcel (11.27 Acres) into a contiguous approximately 15-acre preserve. This acquisition not only protects all of Colvin Avenue (from the rimstone pools in upper Cook Avenue to McNab Hall) in perpetuity, but prevents potential residential development on the land above the cave and between our existing two parcels. Future plans for the preserve will include the construction of a walking trail from the area near the existing kiosk down to the Gregory Entrance, so visitors will no longer need to take the hazardous walk along Route 443 to use the Gregory Entrance.

Our budget for this acquisition is \$18,000. The NCC Vice President (and Co-Manager of the Clarksville Preserve) has generously offered us another Challenge Match opportunity. Thom Engel has graciously offered a 50% match (up to \$6,000) on the first \$12,000 donated. Here's a great opportunity to increase your money's effectiveness by half again. You can donate by check (please write "Clarksville Addition" in the memo line) or on the NCC website (<http://www.necaveconservancy.org/donate/>). Please add "Clarksville Addition" in the comments section, so we apply your generosity appropriately. To date, we have received approximately \$3,700 from 17 donors, putting us over the \$5,500 mark with the match.

Signing of the Donation Agreement for Salamander Cave - We are very excited to announce that we have signed a donation agreement with the owners of Salamander Cave in Kingston, NY. At this time, the survey of the approximate 9.5 acre preserve is underway to confirm the size and configuration of the parcel prior to its transfer to the NCC. Although the property is being donated to the NCC, our transactional costs for the project are likely to exceed \$7,000. While we hope to recoup some of that expense with grants, donations to defray these costs will also be helpful. Special thanks to Cara Gentry and Eric Richard for maintaining a great rapport with the owners for years and for volunteering to act as our Preserve Managers for the future Salamander Cave Preserve, the NCC's tenth.

The NYSCPP Grants - The New York State Department of Environmental Conservation and the Land Trust Alliance awarded Conservation Partnership Program grants totaling \$2.29 million to 51 nonprofit land trusts across the state. Among those grants, the NCC was awarded \$26,000 for the Human Influences on Caves Study which will, in part, fund the instrumentation of several NCC caves to collect basic data on temperature, humidity, human visitation, and bat monitoring, so that we can inform our management of these resources from a more scientific perspective.

Renewal of the Surprise Stewardship Agreement - On April 17, 2018, the NYS Department of Environmental Conservation signed the renewal of the NCC Stewardship Agreement for Surprise Cave in the Bashakill Wildlife Management Area. The Agreement runs through March 31, 2023. There is still no Sport Caving in Surprise on the near horizon.

Upcoming Bylaws Change Vote - At the March Board meeting, the following motion was put forth and tabled to the June meeting pending notice to the membership:

Article VI Section 5 of the Bylaws is amended as follows: "Vacancies. The Trustees may appoint a person to fill any vacancy among the Officers. Such person shall serve only until the next annual meeting, but shall be eligible for nomination and election to complete the appropriate term remaining, or, if they are appointed during the final year of an officer's term, for a full term as of that annual meeting."

This correction should have been made at the time we staggered and extended officer terms. Without it, appointment of someone to fill an officer vacancy during the first year of a two-year term would have the unintentional side effect of un-staggering that position's term as of the next annual meeting. A full vote of all members present will be taken at the June Board meeting.

Clarksville Work Day - A productive work day was held at the Clarksville Preserve on Saturday April 21, which included repairs and alterations to the changing area, and a general cleanup in preparation for the coming season. Thanks to all who helped out.

Thacher Work Days - This February, the NCC Agreement with Thacher Park was renewed and the speleological inventory of park resources will continue. This year's currently scheduled work days are May 19, June 23, July 14, August 25, and September 15. Contact Thom Engel for details.

Request for Newsletter Articles - We are looking for articles to include in our next issue of the NCC Newsletter. Trip reports, photos, interesting tidbits, or any thoughts on what you would like to see in upcoming newsletters are welcomed. Please send articles to Danny Brass at: newsletter@necaveconservancy.org. Please send any thoughts on what you would like to see in future newsletters to publications@necaveconservancy.org

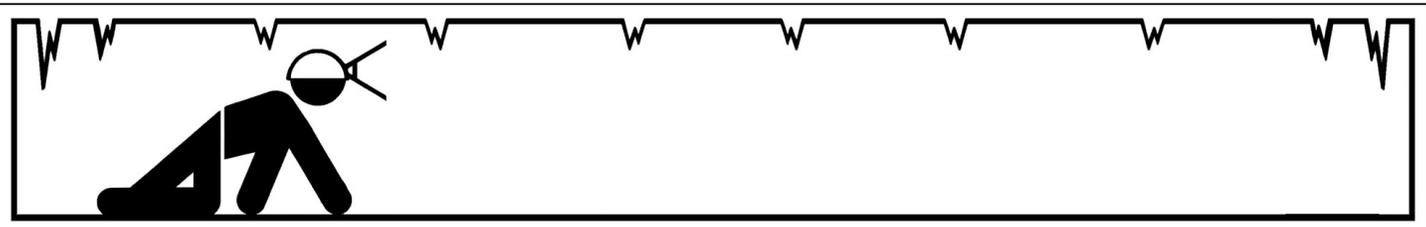
40th Anniversary - Yes, that's right. The NCC will turn 40 this coming December! In celebration of this momentous anniversary, we will be holding a celebratory dinner on October 20, 2018 at the SUNY Cobleskill campus. Please stay tuned for details and for other events and items throughout the year.

NCC VOLUNTEER OPPORTUNITIES AVAILABLE

Cavers can get involved with many volunteer opportunities offered by the Northeastern Cave Conservancy. These include work on various committees or assisting with one of the cave-preserve management teams. Volunteers contribute to the maintenance and preservation of unique underground environments and help to support various NCC educational and outreach activities. If interested in learning more about volunteer opportunities with the NCC, please contact Vince Kappler at volunteervalue@necaveconservancy.org. You can also speak to any NCC Board member or officer. Don't pass up the chance to give something back to the caves that are so important to us all.

ANNUAL MEMBERSHIP RENEWAL - PAYPAL

Tired of getting dues reminder emails from the NCC Membership Chair? Now you can subscribe your annual membership so that it is automatically charged each year! Scroll to the bottom of the "Join" page to where you see Annual Renewal - PayPal: <http://www.necaveconservancy.org/join/>



NORTHEASTERN CAVE CONSERVANCY

THE FIRST 40 YEARS

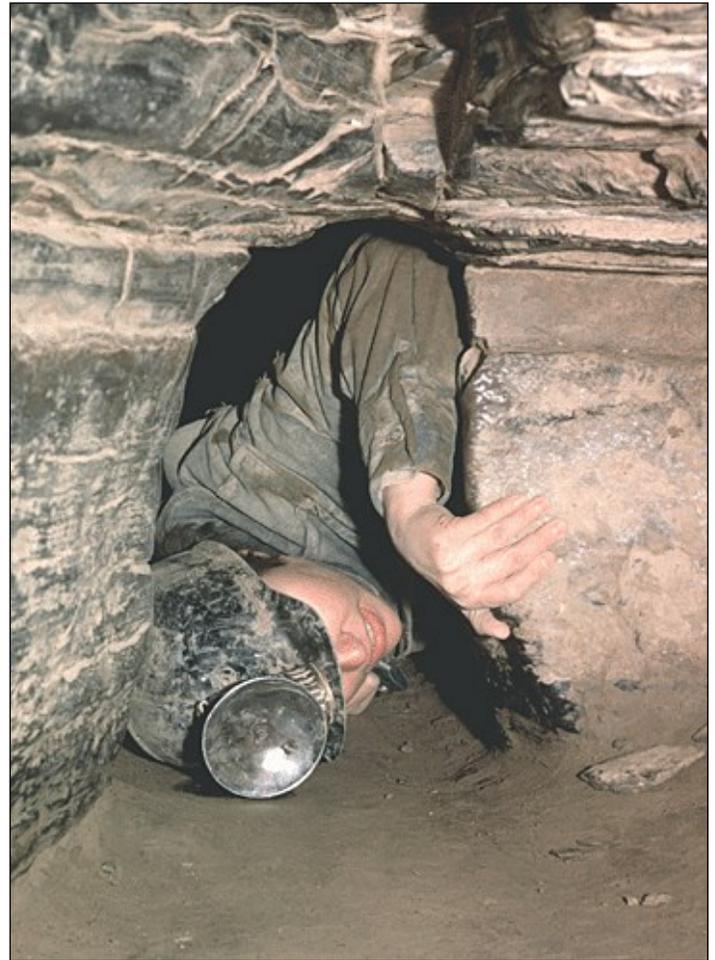
—Vince Kappler—

The NCC officially turns forty years old on December 11, 2018. It was on that date in 1978 that three farsighted, northeastern cavers filed the Certificate of Incorporation paperwork under New York's Not-For Profit Corporation Law to create the Northeastern Cave Conservancy, Inc. (NCC). The Corporation was formed to "promote the study and the preservation in an ecologically sound manner of speleologically significant properties in the Northeastern United States." The new not-for-profit then accepted the donation of Knox Cave (and nine surrounding acres), and managed the property to the benefit of generations of cavers. The NCC is the second oldest incorporated Cave Conservancy affiliated with the National Speleological Society.



Stairs remaining from the commercial operation at the Knox Cave entrance (1969). Photo by Art Palmer.

From the time of its incorporation, a handful of cavers managed business aspects of the new conservancy and its single preserve. The property was monitored for unauthorized visitation, but the cave was open in the summer to responsible cavers. The cave was closed in the winter to protect bats during hibernation and visitors from dangerous icing conditions at the entrance. In 1999, the NCC reorganized as a membership organization with nine elected Trustees who then appointed Officers to lead the organization. Since then, approximately 38 cavers (and a few non-cavers) have served on the Board of Directors and an unknown number have chaired the 28 permanent committees that now manage a portfolio of nine preserves containing at least sixteen caves. Meanwhile, members have donated more than \$575,000 of Volunteer Value working on NCC projects and management activities, including building and maintaining trails, kiosks, and changing shelters; and general cleanups of our various



Peg Palmer at the end of the Gunbarrel Passage in Knox Cave (1969). Photo by Art Palmer.

preserves. Members volunteering to assist our neighbors and communities has become another tradition. We have cleaned trash-filled sinkholes on private lands and worked with private homeowners after hurricane Irene caused widespread property damage.

In early 2000, the Internal Revenue Service certified the NCC as a tax-exempt 501(c)(3) organization, which allowed the conservancy to solicit tax-exempt donations to support its newly adopted mission:

The Northeastern Cave Conservancy, Inc. (NCC) is a not-for-profit corporation committed to the conservation, study, management, and acquisition of caves and karst areas having significant geological, hydrological, biological, recreational, historical or aesthetic features. To these ends, the NCC combines the resources and expertise of affiliated cave explorers, educators, scientists, landowners, and conservation officials.



Baugh Cave cleanup (August 2005). Photo by Bill Folsom.



Jacob Morris-Siegel removing paint in the Big Room of Bentley's Cave. Photo by John Dunham.



Hurricane Irene cleanup (August 2011). Photos by Mike Warner.

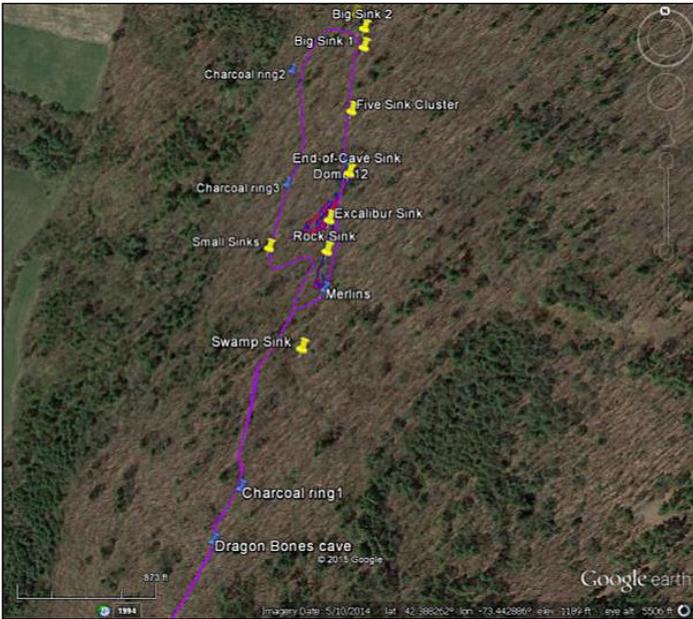


Hurricane Sandy cleanup (April 2013). Photo by Mike Warner.

This mission statement reflects expansion of the NCC's original emphasis on acquiring caves for cavers' recreational use to one of actively acquiring, managing, and protecting karst for the benefit of all and informing the public on how the preserves are a benefit to our host communities. While all of our caves have great recreational value and have been enjoyed by cavers, soon-to-be cavers, and non-cavers alike, several preserves have trails that offer the non-caving public an opportunity to see unique karst features, rare and endangered flora and fauna, and historic artifacts. All of our preserves are open for hiking and surface exploration year-round. Our preserves are used as learning laboratories for post-secondary students; local primary schools use the preserves for school-sponsored field trips. In 2017, the Special Use Committee reported that 212 permits were issued for group visitations. Approximately 80% of those were issued to schools, summer camps, or scouts. The NCC also enhanced its education outreach by sponsoring the very popular Kids Cave in the new Thacher Park Visitor Center.

The NCC Science Committee recommended and the Board approved numerous formal research projects in our caves. Nationally recognized specialists conducted two important WNS studies that contributed to the understanding of this disease. Another researcher published a unique DNA study of troglotic amphipods. Meanwhile, NCC Trustee Paul Rubin's ongoing research on sediment deposits in Clarksville Cave has documented water flow conditions from the retreating Laurentide ice sheet some 13,000 years ago. While Paul's work continues, he has already presented preliminary findings at a Geological Society of America meeting in March 2018. Many NCC members regularly participate in bat counts and bat acoustical surveys. Data gathered help state and federal authorities determine the extent and spread of WNS and is now documenting the very slow but encouraging recovery of some bat populations. The NCC co-sponsored the 2006 National Cave & Karst Management Symposium, the 2012 Northeastern Bat Working Group Meeting, and the 2014 Symposium on Bat Research.

The NCC has a partnership agreement with a New York county land conservancy and is a member of the Land Trust Alliance. NCC members attend cave and traditional land conservancy conferences and an NCC representative



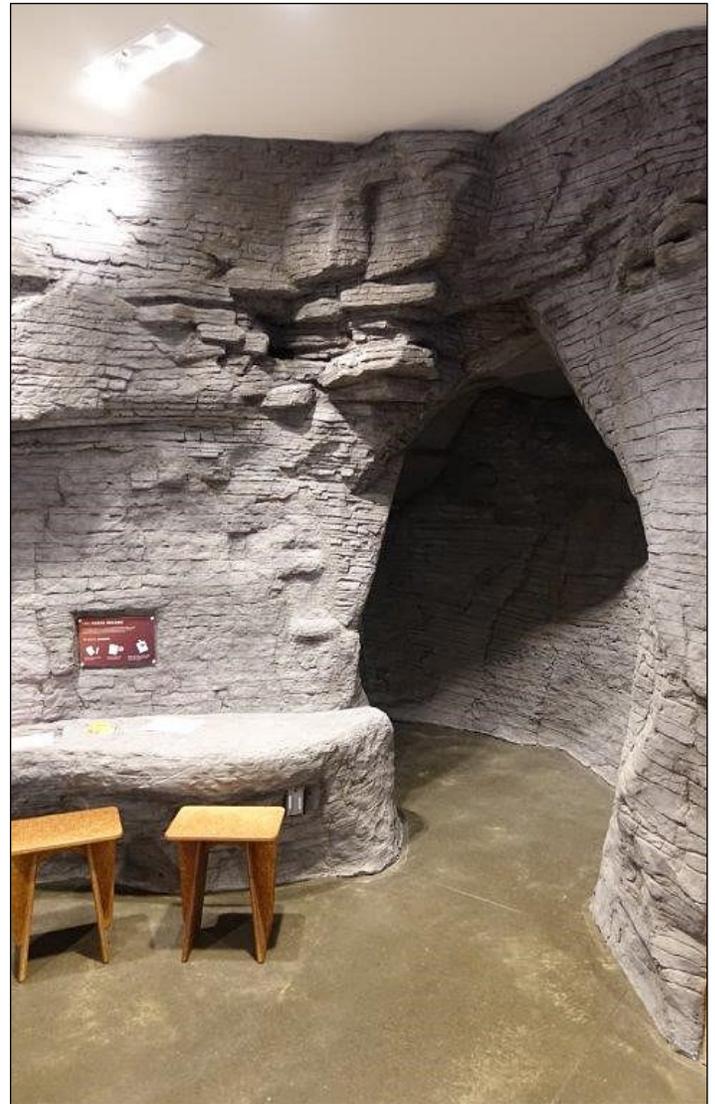
Interpretive Loop Trail, Merlins Cave Preserve. Map by John Dunham.



Bats in the Thacher Park Kids Cave. Photo by Norm Berg.

is a participant in the annual NSS Conservancies Roundtable held at the NSS Convention. Our members have made presentations at numerous events on what we are about and the triumphs and challenges we've faced as we identify, acquire, and manage unique karstscapes. In 2017, we were awarded our first grant (from the New York State Conservation Partnership Program [NYSCPP] and funded by the NYS Environmental Protection Fund) that helped defray acquisition costs of a preserve. Our experiences in managing and protecting caves have led to a Stewardship Agreement with the New York Department of Environmental Conservation "for the purpose of preserving, maintaining, or enhancing a state-owned natural karst resource." We also hold a permit to conduct cave/karst field work at John Boyd Thacher State Park.

The NCC owes a great deal to Bob Addis, Jim Harbison, and Art Palmer who started the NCC forty years ago. It was their desire to protect Knox Cave that has evolved



Entrance to Thacher Park Kids Cave. Photo by Thom Engel.

into an organization that has become a leader in the cave conservation community. Our membership has financially supported this evolution, and from that same membership came the dedicated volunteers that work tirelessly to fulfill our mission. Current NCC President Bob Simmons recently announced the soon-to-be-completed acquisition of another cave (our tenth preserve) and the purchase of additional acreage for an existing preserve. The NCC was also awarded a significant Stewardship Grant by the NYSCPP to study Human Influences on Caves. As we continue our progress, we need to grow our membership and encourage more individuals to step into leadership roles. While our membership has predominately come from cavers who understand the necessity of protecting caves, we have exposed ourselves to a much larger community of conservation-minded individuals. We should continue to actively recruit cavers to our ranks. But we should also reach out to like-minded conservationists, because their expertise and enthusiasm can benefit us all. And if we do, the next chapter of our evolution will be even more exciting.



NCC display at the Bat Working Group Meeting (South Portland, Maine). Photo by Mike Warner.



Grant Award Ceremony 2016 - Trustee Christine Young and Vice President Bob Simmons.

Committed to the conservation, study, management, and acquisition of caves and karst areas having significant geological, hydrological, biological, recreational, historical, or aesthetic features.

NORTHEASTERN CAVE CONSERVANCY — CLARKSVILLE PRESERVE EXPANSION CHALLENGE —

Clarksville, NY. The Northeastern Cave Conservancy, Inc. (NCC) has entered into a contract to obtain additional acreage to consolidate the preserve and protect the southern reaches of the cave system. The NCC will purchase approximately three acres of land (survey in progress) which will link our Gregory Entrance parcel (0.6 Acre) and Ward Entrance parcel (11.27 Acres) into a contiguous approximately 15 Acre preserve. This acquisition not only protects all of Colvin Avenue (from the rimstone pools in upper Cook Avenue to McNab Hall) in perpetuity, but prevents potential residential development on the land above the cave and between our existing two parcels. Future plans for the preserve will include the construction of a walking trail from the area near the existing kiosk down to the Gregory Entrance, so visitors will no longer need to walk along Route 443 to visit the Gregory Entrance or to return to the parking/changing area after exiting.

Our budget for this acquisition (purchase, filing fees, administrative fees, etc.) is \$18,000. The NCC Vice President and Co-Manager of the Clarksville Preserve has generously offered us another Challenge Match opportunity. Thom Engel has graciously offered a 50% match (up to \$6,000) on the first \$12,000 donated. Here's a great opportunity to increase your money's effectiveness by half again. You can donate to this cause by check (please write "Clarksville Addition" in the memo line) or on the NCC website (www.necaveconservancy.org) and push the big green **DONATE** button in the upper right corner. Please add "Clarksville Addition" in the comments section, so we apply your generosity appropriately.

Thank you



Clarksville Cave - Photo by Thomas Holder

NCC WORK DAYS IN THACHER PARK —Thom Engel—

Another season of karst and cave mapping in John Boyd Thacher State Park is upon us. This year, we have scheduled one day per month that the caves are open. These dates are May 19, June 23, July 14, August 25, and September 15. We will meet at Hop Field at 9:30 am (the Thacher visitor center does not open until 9:00 am and I have to get parking permits for volunteers).

Major projects include continuing the mapping of Hailes Cave, mapping Uhl Be Cold Cave (wetsuits necessary), continuing to check features seen on LIDAR images (GPS units necessary), and mapping smaller caves.

As with last year, Hailes will be available for survey trips on other dates. Because I need to give the park 72-hour notice as per our permit, I should be contacted 96 hours before the planned trip.

If you have questions, please contact me at thacherpark@necaveconservancy.org



Vince Kappler checks out a promising surface lead during the Thacher work days (2017). Photo by Susan Kappler.

CLARKSVILLE WORK DAY - SPRING 2018

—Michael Chu—

The work day on April 21, 2018 at Clarksville was a huge success! What was on the agenda was primarily fixing the changing area, with routine trail work (cleaning up fallen branches/trees, etc.) as an extra task if there was time. In just 4-5 hours, thanks to everyone who showed up to help, we managed to replace/repair all the rotten wall slats on the changing area, remove the full-length benches, and upgrade the seating to corner seat (just as useful for those using the changing area for its intended uses and not so much for those that weren't), check the trail for fallen branches/trees, remove chunks of logs from the Wards sinkhole, and even do an emergency repair on a heavily leaning kiosk by digging out and replacing two rotten posts.

Many thanks to all those that came to help!



In addition to general trail work, NCC members work to repair the information kiosk and changing area at the Clarksville Cave Preserve during the April 2018 cleanup effort. Clarksville Cave is one of the most popular and heavily visited caves in the Northeast. All photos on this page by Shirley Madewell.

NSS MEMBERS CAVING WEEKEND AT THE SCHOHARIE CAVERNS NATURE PRESERVE (SCHOHARIE COUNTY, NY) — August 16 - 19, 2018

The Central Connecticut Grotto would like to extend an invitation to all NSS members to come and join us for four days of caving in the Schoharie County (New York) area. Our goal is to give cavers from other regions an opportunity to visit some great cave preserves owned by the NSS and Northeastern Cave Conservancy. There will be guided trips for cavers of different experience levels.

Members are invited to come and stay free of charge at the Schoharie Caverns Nature Preserve, which includes a large cabin, areas for tent camping, and a 4,000-foot-long cave that has been owned and managed by the NSS for almost 25 years.

We are excited to invite cavers to come and visit nearby McFails Cave. This wet, vertical cave has been surveyed to over seven miles in length, and is actually the very first cave owned by the NSS. McFails was donated to the NSS in 1967, 51 years ago, and exploration still continues today.

The preserve has limited amount of space, and we require all participants to RSVP so we can best plan for accommodating everyone who wishes to join us.

This event is inspired by the Louisville Grotto's NSS Members Free Camping Weekend that several cavers from the Northeast attended in 2017. We encourage more grottos to host similar events in their own regions.

Website: ctcavers.org/nssmembersweekend Email: info@ctcavers.org

Facebook Event Page: <https://www.facebook.com/events/1624109097682412/> Phone: Steven Millett - 203-640-6703



NYSDEC BAT ACOUSTIC SURVEY - SUMMARY REPORT 2017**— Katelyn Ritzko and Samantha Hoff —****Introduction**

The state-wide acoustic monitoring program in New York is a valuable and effective means of generating data representing the summer distribution and abundance of bats within the state. Bats in North America today are encountering multiple threats to population levels, including the infectious fungal disease known as White Nose Syndrome (WNS), and wind energy generation. As WNS continues to spread farther across North America, we continue to rely on the consistent year to year collection of acoustic data as a means of evaluating the populations of several bat species. This method remains our only way of monitoring New York's tree bat populations, which are especially vulnerable to mortalities caused by wind turbines. There are also cave bat species more prone to wind turbine mortalities, which have been decimated by WNS. The efforts completed by the volunteers of this program help us to evaluate a proactive approach to our other monitoring programs.

New York State hosts three migratory bat species: Eastern red bats (*Lasiurus borealis*), Hoary bats (*Lasiurus cinereus*), and Silver-haired bats (*Lasionycteris noctivagans*). These species are difficult to track, and their migratory patterns are not well known. Mortalities of these species often occur in the summer, which coincides with the presumed migratory season of July, August and September. Acoustic monitoring is our best tool at detecting the presence of these species.

Six species of hibernating bats can be found in New York. Of these, the Northern long-eared bat (*Myotis septentrionalis*), Indiana bat (*Myotis sodalis*), Little brown bat (*Myotis lucifugus*), and Tri-colored bat (*Perimyotis subflavus*) have all experienced a heavy impact from WNS; since the discovery of WNS in 2007, we have seen declines in both our winter hibernacula survey counts and our summer acoustic detections. The two other cave species, Big brown bats (*Eptesicus fuscus*) and Eastern small-footed bats (*Myotis leibii*), have not experienced these same declines. The reason for this is not yet understood, but could be due to multiple factors. Winter hibernacula counts are not considered a reliable means to track the population trends of these two species due to their roosting habits. However, Big brown bats are easily and consistently detected during the acoustic surveys, and this provides a reliable method to tracking their population. Small-footed bats remain difficult to detect using acoustic surveys, although some routes in western NY may be increasing our understanding of detecting them. During the summer survey season of 2015, we observed some faint calls from Letchworth State Park, and when we suspected Northern long-eared bats, went to try and catch them in 2016. To our surprise, we ended up catching Small-footed bats. We will hopefully continue this endeavor in the coming summers.

Results

This survey season marks the ninth year for our statewide acoustic surveys. This summer, 5,804 miles were driven by volunteers, resulting in over 480 hours of volunteer time. This was an incredible effort put forth by our volunteers.

Figure 1 depicts the total detections on each route that were run during the 2017 season (5/26-7/9). There were a few issues this year with finding enough coverage for certain routes, technical difficulties, and an abundance of heavy rains that made getting surveys run difficult. Despite that, a total of 44 routes were surveyed, resulting in 82 route nights (many were run twice during the survey period). Percentage of detections by species is depicted in Figure 2 and Chart 1 details detections by species and year.

Two of our migratory bat species, Eastern red bats and Hoary bats, have populations that are monitored almost exclusively in New York using the mobile acoustic surveys. Although we see fluctuations year to year, we are still seeing an overall positive trend (Figure 3).

Silver-haired bats pose a particular issue in tracking their population trends. The echolocation calls made by this species look structurally similar to Big brown bats, so the detections from Silver-haired bats and Big brown bats are grouped together (see Figure 4). Due to the rarer nature of Silver-haired bats found across New York, we assume most of the calls are created by Big brown bats. As mentioned before, although Big brown bats are a hibernating species, mobile acoustic surveys continue to be our best way of determining their population trend. Big brown bats can be very opportunistic and variable with hibernation options, often spending the winter in human structures, making them difficult to count year to year during the winter surveys.

In 2015, we saw a small increase in the amount of Little brown bat detections. The two subsequent years have shown a mild decrease (see Figure 5); however, this still could show evidence of possible stabilization. Considering the results of all monitoring efforts, New York has seen about a 90% mortality rate for the Little brown bat, and other states are faring worse. We hope to continue to see at least a stop in the dramatic decrease in New York. The Myotis Index, by which we compare the averages of Myotis bats detected vs total bats, supports the possibility of stabilization for the Little brown bat population in New York State (Figure 6).

This indication of stabilization still does not apply to other Myotis bats, and detections of the three other species remain a rare occurrence across the state. One exception is Northern long-eared bats in Long Island, where we are currently working to figure out why we can still find these bats in better numbers than the rest of the state. Northern long-eared bats, which became state and federally listed as Threatened in 2015 due to WNS decimating populations, are not easily detected using driving surveys. They are by nature found more in forested areas with plenty of leaf clutter and emit quieter echolocation calls than other species, which makes stationary acoustics a better means of detecting them. Indiana bats are similar in this regard, and continue to be found in only a few areas across the state due to declines from WNS. Indiana bats, which were federally listed as Endangered in 1973, were seeing an increase in numbers before the onset of WNS. Now Northern long-eared bats are hovering above a 98% mortality rate, and Indiana bats are at just above a 75% mortality rate.

Tri-colored bats have seen one of the most dramatic decreases in population. They are being proposed for both state and federal listing as Endangered. We have never detected them in high numbers on acoustic surveys, but both acoustic and hibernacula surveys show an alarming decline, and less driving routes are getting detections (see Figure 7). This species has also shown a greater susceptibility to wind turbine mortality.

Conclusions

The mobile acoustic survey program is a valuable and vital resource for understanding bat abundance and distribution within the state. The network of volunteers we have remains unparalleled across the nation, generating informative data used to help both monitor and protect the bats.

Continuing these efforts will give New York a long-term perspective on bat population trends, and aid in directing other monitoring efforts, as well as management practices.

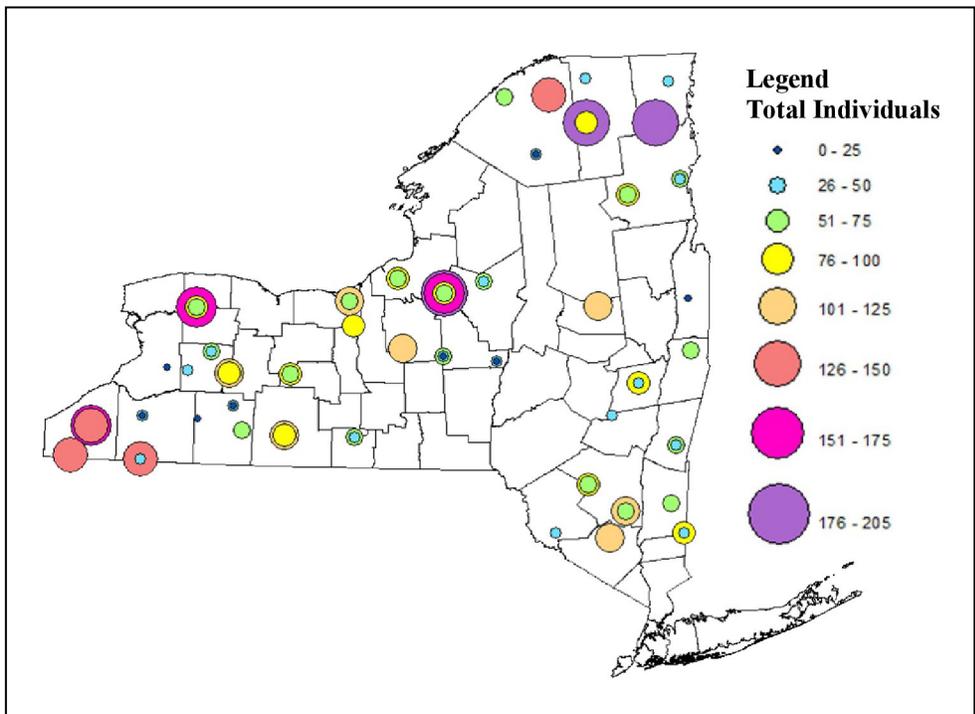


Figure 1. Total detections for all species across all routes completed in the 2017 mobile acoustic survey program. Warmer colors with larger circles represent routes where more bats were detected while smaller circles of cooler colors represent less individuals. Detections range from 14 bats per route night to 205 bats per route night. Concentric circles indicate the route was surveyed two nights during the survey period (May 26th to July 9th), resulting in 44 routes for a total of 82 route nights.

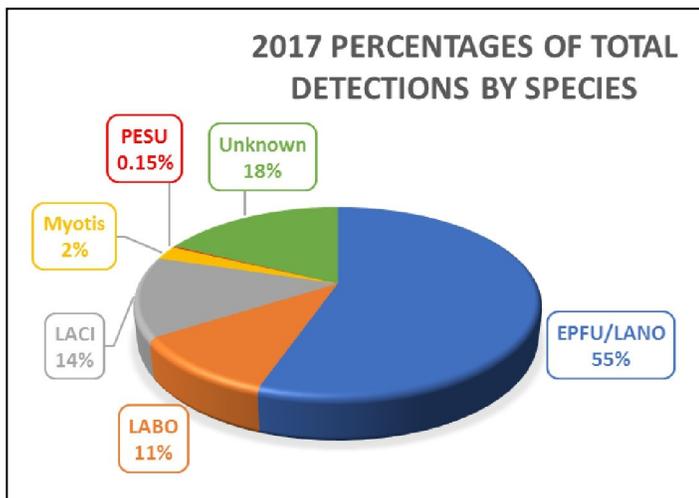


Figure 2. Big brown bats/Silver-haired bats (EPFU/LANO) make up the majority of the detections at 55% while Tri-colored bats (PESU) hold the smallest percentage of total detections at 0.15%. Files that contain bat pulses but were unable to be identified due to poor quality comprised 18% of files.

Key for Figure 2	
EPFU/LANO	Big brown bat/Silver-haired bat
LABO	Red bat
LACI	Hoary bat
Myotis	Little brown, Northern long-eared, Indiana, Small-footed bats
PESU	Tri-colored bat

	2009	2010	2011	2012	2013	2014	2015	2016	2017
TOTAL INDIVIDUALS	4414	4985	4868	5289	5556	6200	5350	4993	6111
EPFU	1280	1579	1351	1269	1602	1827	2201	1889	2376
LANO	656	905	1101	1321	1300	1303	882	1061	1017
LABO	325	319	259	363	354	549	381	440	645
LACI	479	414	591	615	651	842	833	788	839
PESU	54	41	39	51	21	35	13	6	9
MYLE	0	3	1	3	0	1	0	1	2
MYLU	575	407	301	295	194	147	161	132	139
MYSE	60	12	31	31	13	4	5	2	1
MYSO	24	16	15	9	7	6	3	9	4
MYOTIS	659	438	348	338	214	158	169	144	146
UNKNOWN	961	1289	1179	1332	1414	1486	871	665	1079

Chart 1. Total counts of detections per species for 2009 – 2017. Big brown (*Eptesicus fuscus* – EPFU); Silver-haired (*Lasionycteris noctivagans* – LANO); Eastern red (*Lasiurus borealis* – LABO); Hoary (*Lasiurus cinereus* – LACI); Small-footed (*Myotis leibii* – MYLE); Little brown (*Myotis lucifugus* – MYLU); Northern long-eared (*Myotis septentrionalis* – MYSE); Indiana (*Myotis sodalis* – MYSO); Tri-colored (*Perimyotis subflavus* – PESU). MYOTIS shows total of individuals from each Myotis species, and is not counted in the ‘Total Individuals’ column.

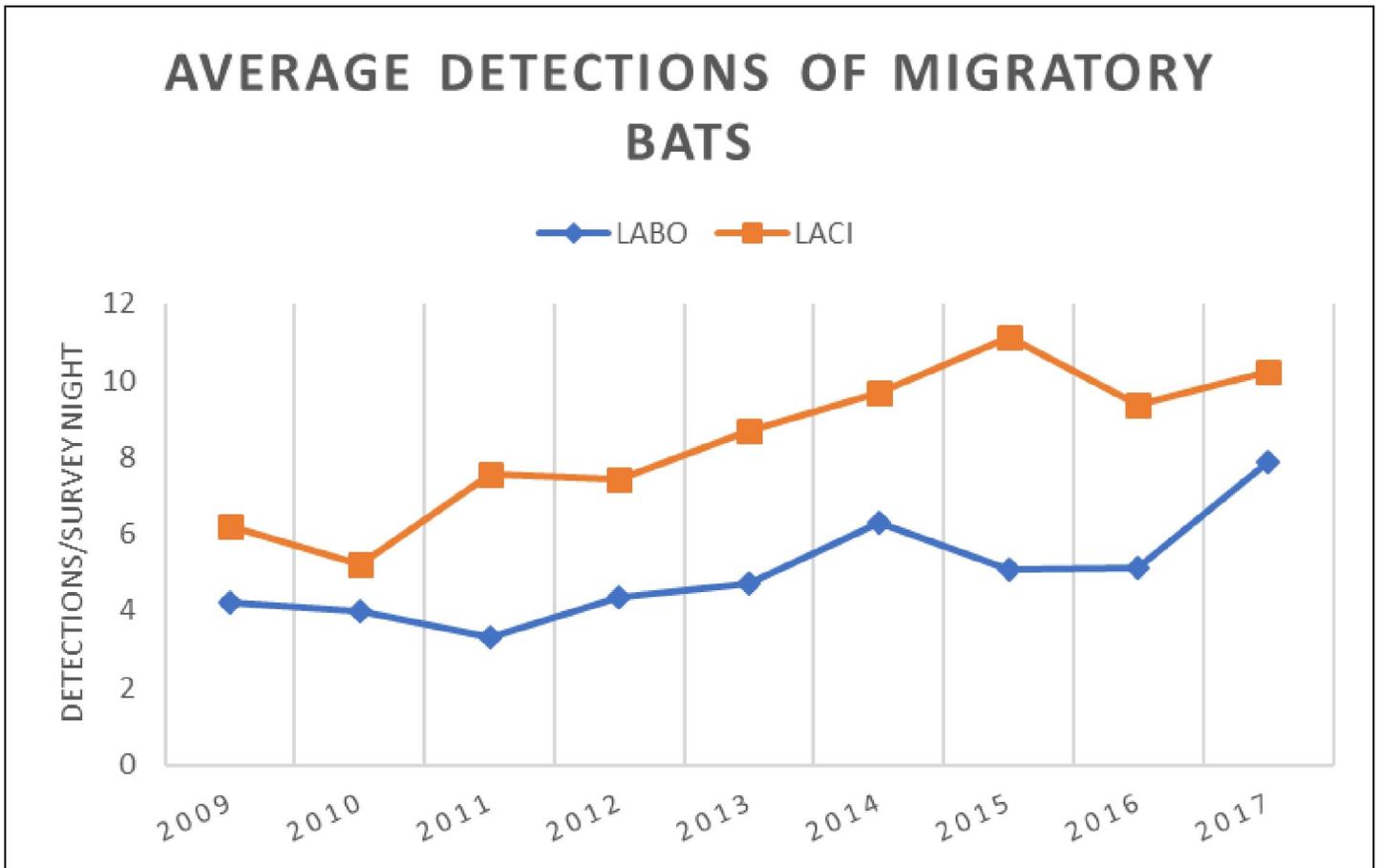


Figure 3. Average detections per route night for Eastern red bats (LABO) and Hoary bats (LACI).

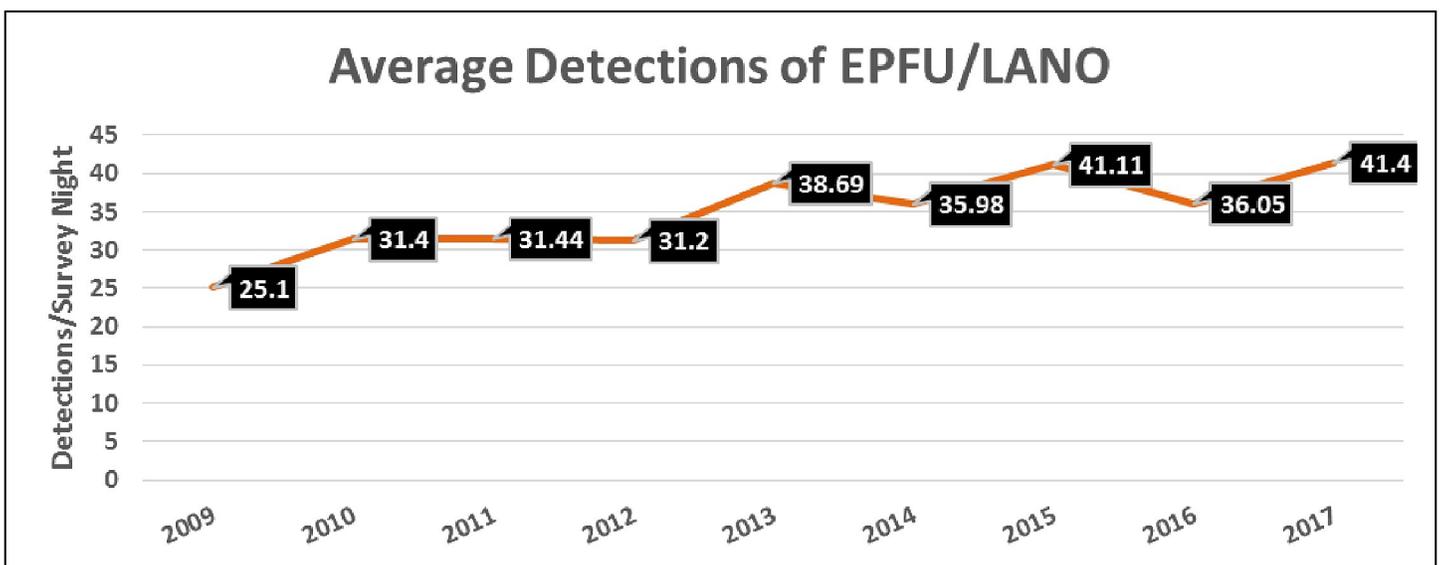


Figure 4. Average detections per route night of the Big brown bat (EPFU)/Silver-haired bat (LANO) complex.

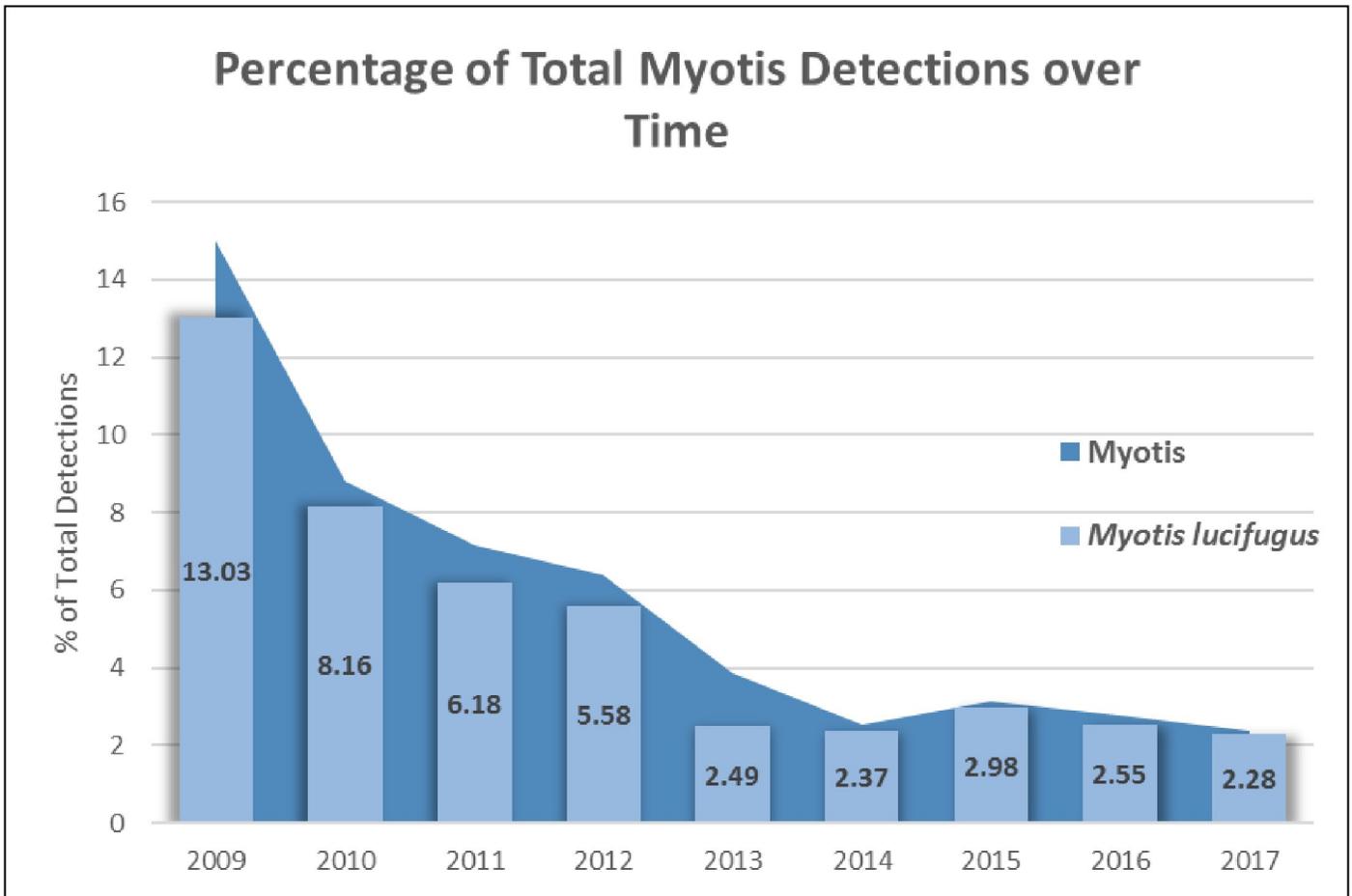


Figure 5. Percentage of Myotis bat detections comprised of little brown bats (*Myotis lucifugus*). Myotis bats includes Northern long-eared bats (*Myotis septentrionalis*), Small footed bats (*Myotis leibii*), and Indiana bats (*Myotis sodalis*).

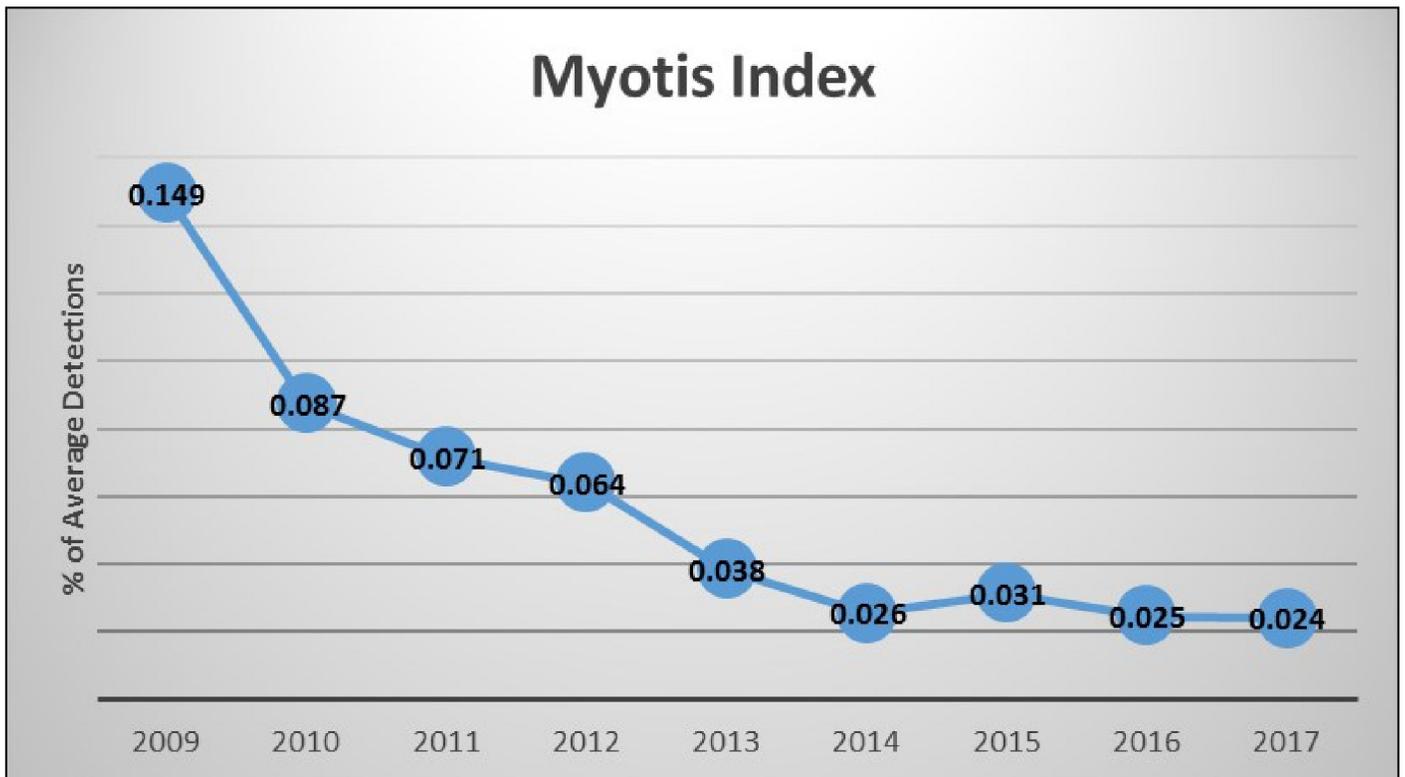


Figure 6. Percent of total Myotis detections out of total bat detections.

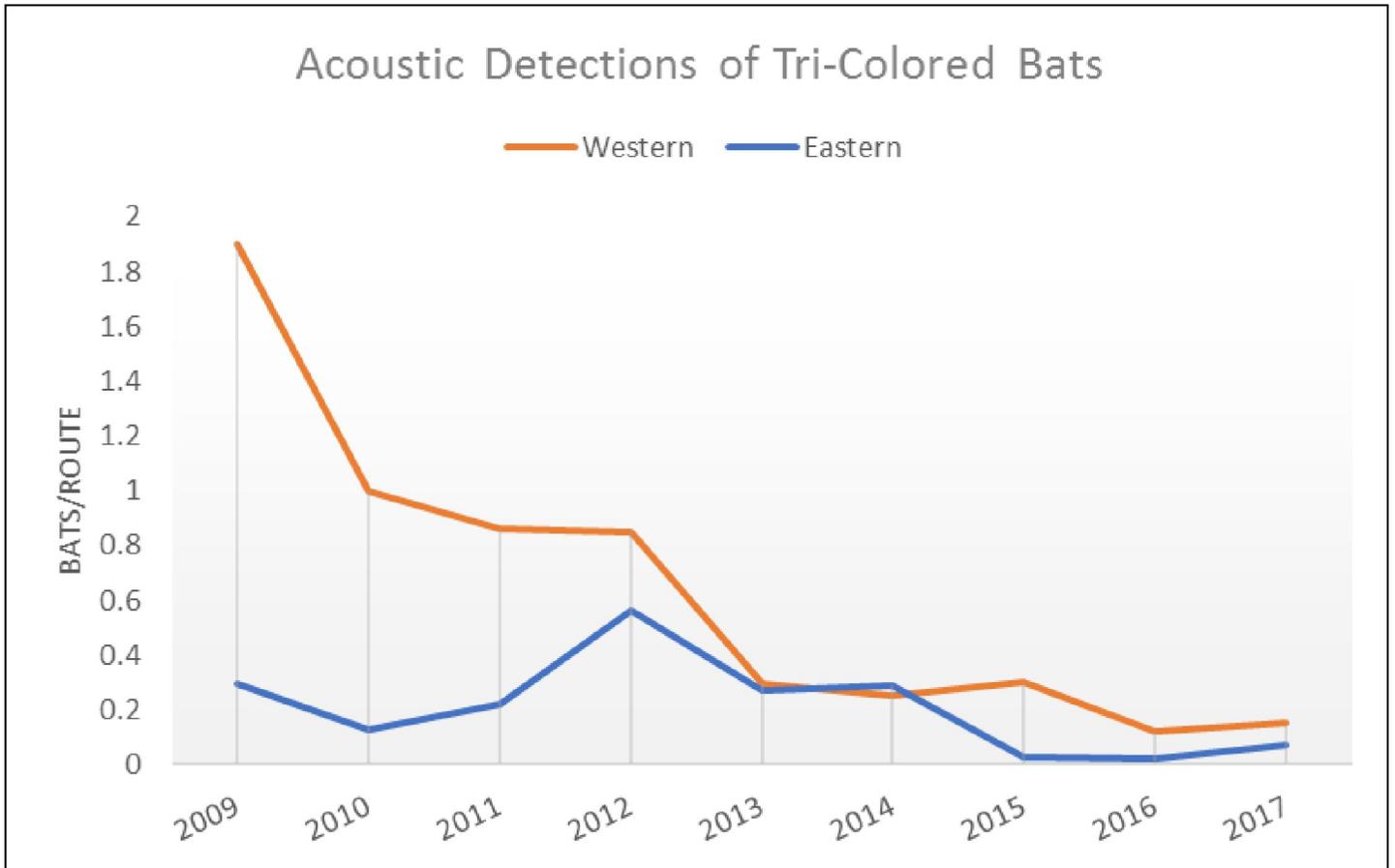


Figure 7. Average detections of Tri-colored bats (*Perimyotis subflavus*) per route night, showing eastern routes vs western routes.



ADDITIONAL ACOUSTICS WORK COMPLETED AT TORY'S CAVE

Big brown bats (*Eptesicus fuscus*) were confirmed at the entrance which re-affirms the importance of this site for bats. Although it is not state or federally listed, this species is of Greatest Conservation Need according to the CT Wildlife Action Plan due to the ~40 % population decline attributed to white-nose syndrome. Other species detected in previous efforts were not detected during this survey period. This does not mean they were absent, however, just unconfirmed. The timing of emergence is influenced by a lot of factors including fat consumption rates, number of arousals during hibernation, spring weather fluctuations, spring insect availability, etc. Having little brown and tri-colored bats confirmed in previous seasons still underscores the importance of this cave to multiple bat species. If not for the unfortunate occurrence of a battery failure this spring, other species may have been detected.

If you have plans for cave visits during the summer while bats are not hibernating, here are some resources you may find helpful.

[The Responsible Caver and White-nose Syndrome Decontamination \(video, Cave Research Foundation 2016\)](#)

The Cave Research Foundation in partnership with the USDA Forest Service's Monongahela National Forest produced this 21-minute video for training people who conduct approved research in caves on the Forest. The film provides an overview of the importance of bats, the threat of white-nose syndrome and the importance of decontamination. It is also a great example of the importance of working together to conserve bats.

[United States National White-nose Syndrome Decontamination Protocol \(April 12, 2016\)](#)

The latest formal revision of the United States National White-nose Syndrome Decontamination Protocol to prevent the spread of the fungus that causes white-nose syndrome. This document is the product of a collaborative effort between multiple federal and state agencies and several non-governmental organizations.

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Editor's Note - Previous articles on acoustic bat survey studies, conservation efforts, and unauthorized cave visitation during winter months at Tory's Cave can be found in the March 2017 issue of the *Northeastern Cave Conservancy News*.

