

NORTHEASTERN CAVE CONSERVANCY, INC.

Minutes

March 9, 2014, 10:00 am at HRP Associates, 197 Scott Swamp Road Farmington, Ct.

Meeting called to order at 10:20

1. Introduction and greetings – President Bob Addis
2. Attendance:
Officers: B. Addis, V. Kappler, B. Folsom, C. Hay
Trustees: M Chu, T. Engel, P. Youngbaer, M. Berger, P. Woodell, M. Ingalls
3. Absent with Proxy
 - Hicks – Warner is proxy
4. Absent without Proxy
 - Dumont – Board filled with Lee Del Vale
 - Traino – Board filled with Chuck Porter
5. President's Report – Bob Addis- Attachment A
 - Bensons could be closing on March 11 !
 - Issue with survey – file with an amended deed description.
6. Vice President's Report –Vince Kappler – Attachment B
7. Treasurer's Report –Bill Folsom - Attachment C
 - Merlins property is now off the tax rolls
8. Secretary's Report – Christa Hay
 - Status quo
 - Help coordinate bat surveys with DEC
 - February EC meeting minutes – Attachment D
9. Science Committee – Larry Davis - Attachment E
 - We received from Dr. Luis Espinaza of Marist College, a research permit application (attached) for Clarksville. I have conferred with the Clarksville managers and would like to present my recommendations to you for transmittal to the Board for their consideration.

I recommend that we permit this research project in Clarksville Cave with the following requirements

That Dr. Espinaza obtains a "permit" for each trip into the cave following the usual permitting regulations for college trips.

That Dr. Espinaza and his students will follow all the established rules for visiting Clarksville Cave and will do their collecting in such a way so as to minimize any impact on the cave and on other visitors. Preferably, collecting should be done in such a way that no other visitors can see it.

That upon completion of the research, Dr. Espinaza should submit a summary of the research and results (along with any reports) to the Board for conveyance to the managers and the Science Coordinator

That, in any publication or report, Dr. Espinaza (and his students) will acknowledge the Northeastern Cave Conservancy for granting permission to conduct research in the cave.

My feeling is that this is a very interesting project and that it could lead to some serious, region-wide research later. Dr. Espinaza has visited Clarksville many times and he appears to know what he is doing in regards to both the scientific and the caving aspects of this proposed project.

NOTE: there are time constraints here—the academic calendar. Dr. Espinaza has requested that the Board do what it can to expedite their decision. Once the decision is made, if you let me know what it is and what requirements the Board wished to impose, I will be happy to notify him and convey the requirements to him.

10. Acquisitions Committee –Chuck Porter

11. Bylaws Committee Report – Joe Levinson
12. Publications/Publicity Committee Report - Christa Hay
 - Status quo
 - Will start setting up publicity event for Benson
 - Looking to have the preserve managers on a schedule to send reports/articles to the editor so we have a preserve mentioned in each newsletter.
13. Fundraising Committee – Open
14. Office Committee Report – Emily Davis / Mike Warner
 - Office reopened March 4th
 - Status quo.
15. Knox Cave Preserve Report –Emily Davis , Mitch Berger
16. Onesquethaw Cave Preserve – Thom Engel
 - As is typical for the winter, it has been slow. Only 4 permits have been issued.
17. Sellecks Karst Preserve – Alan Traino
18. Clarksville Preserve – Mike Chu, Thom Engel, Chuck Porter
 - Nothing to report
19. Bentleys Preserve Report - Jonah Spivak
 - I drove by the property yesterday and the site is well snowed in. There was one set of tracks going up... probably not caving related. I plan on visiting the cave in late April or early May to check on the kiosk and trail, and to plan on spring maintenance. I've had a few calls/emails on the cave since my last report, but I don't think any of those resulted in trips since the big snow we had a couple of weeks ago.
20. Ella Armstrong Preserve – Alan Traino
21. Merlins Cave Preserve – Morgan Ingalls
 - We will be doing a bat count with New York DEC on March 14th. I've made some changes to the management plan specifically updating language regarding the access policy and the conservation easement. These changes will be discussed at next meeting.
22. Bensons Cave Preserve Committee -Luke Mazza ,interim
 - Bat count was conducted
23. Education Committee – Thom Engel
 - I will be representing the NCC at the annual Shenendehowa/ SAGE Science and Health Discovery Night on April 25, 2014 from 6:30-9:00 pm. Anyone interested in assisting would be welcome.
24. Membership Committee – Peter Youngbaer Attachment F
25. Website Subcommittee – Mike Chu
26. Legal Committee Report – Open
27. Special and Group Use Coordinator –Thom Engel Attachment G
 - The annual report sent to the EC about two months ago is attached. Since the first of the year, 8 permits have been issued for Clarksville and 3 for Onesquethaw.
28. Financial and Investments Committee – Joe Levinson
29. Volunteer Value Committee – Vince Kappler

Progress: VV totals for 2013: 1916.5 hours of work and 20,522 miles driven to/from projects for a total value of \$70,268.00. These totals represent a significant increase in volunteer hours due to the major projects the NCC has adopted: the Thatcher Park Karst Survey, the Surprise Cave Stewardship, the prep work for the Bensons acquisition, and the storm remediation at Gregorays. The Membership Committee and the ad hoc

Risk Management Committee were very active and contributed many more hours in 2013 than in years past and new caver training was a relatively new category for VV with several members documenting time spent introducing new cavers to the sport and our preserves.

The below chart shows that we are reasonably consistent in the hours members contribute to the NCC with the increases in yearly totals typically occurring when we acquire a new preserve or launch a new initiative. Many thanks to all who have supported the NCC Mission over the years and have reported their personal contributions to the preservation of karst in the northeast.

VOLUNTEER VALUE STATS

	Hours	Miles	Dollar Value
2006	1389.5	20,862	\$29,955.00
2007	1571.5	14,607	\$35,542.00
2008	1680.5	14,143	\$36,926.00
2009	1440.5	10,442	\$39,564.00
2010	1234.0	10,949	\$42,211.00
2011	1546.0	14,118	\$54,684.00
2012	1483.5	13,951	\$51,605.00
2013	1916.5	20,522	\$70,268.00
			\$360,755.00 TOTAL

The IRS has increased the mileage rate for 2014 to \$.56 per mile which is the amount we will use to calculate our VV dollar totals.

2014 VV totals to date: 141.75 hours and \$3974.00

Plans: I will send periodic VV reminders to the membership and monitor data collection.

Problems: None at this time

30. Nominating Committee – Bob Simmons

The nominating committee is soliciting nominations for candidates for the NCC Board for 2014. Three of the nine board seats are up for election. This year Alan Hicks, Morgan Ingalls and Mike Chu's terms are up. I have heard from two candidates that they are running for reelection. If you know of anyone that would make a good candidate, please have them contact Bob Simmons.

In addition to the Board elections each year, the nominating committee is also looking for volunteers for various positions and committees within the NCC such as fundraising chair or assisting with one of the cave preserve management teams.

We anticipate that the same process as was used with such great success for last year's Board elections will be used again this year, without substantial modification.

31. Thacher Park Committee – Thom Engel

- March 22 surface work. No caving but need GPS
- May 3rd. Love My Park Day – work day on trails.

32. Surprise Cave Committee– Bob Simmons

Things have been quiet since the December Board meeting. Starting process for AANR renewal which expires (3 year term) in July of this year. I will distribute a draft to the Board for comment of a renewal request to go to DEC by end of April. USGS/DEC Team looking at getting into the cave this month, would like us to check and see if they are iced out of the entrance as they have been in the past, before they mobilize to the cave. I do not have a schedule from them as of this time.

33. Ad hoc Committee- Tory's Cave – Bob Simmons

I had a very productive meeting with new staff at Weantinoge Heritage Land Trust on 2/27/2014. They are in the process of completing the requirements for LTA Accreditation which requires that all of their fee-owned and leased properties have a complete management plan in place. I am assisting with the cave-related portions of the plan and am on target to provide a draft by Mid-April. I intend to incorporate a formal management agreement between NCC and WHLT to take over the day to day management of the cave property. Future discussions will include the possibility that the property ownership might be transferred to NCC at some point in the future.

On another note, the adjacent property, a former gravel pit, is presently being considered for a zoning change from R-80 Residential to Industrial. WHLT is intervening in this process, based in part on their abutter status. They believe that this zone change will not likely pass, as there is no public water or sewer available and local sentiment is decidedly against it. They note however, that the new owners of the property might then propose a residential subdivision of the parcel which would increase visibility/visitation/trespass of the cave property. I will be attending the Connecticut Land Conservation Council annual meeting on March 15th. The CLCC is a state-wide umbrella organization for land trusts and other conservation organizations. Looking to learn a few things (it is a full day of seminars and courses on a variety of tracks) and schmooze with some of the representatives of the trusts that have (or may have) cave properties, or could be acquiring such.

34. Ad hoc Risk Management Committee - Bob Addis, Peter Youngbaer, Vince Kappler

35. Mohawk River Basin Karst Ad hoc committee- Chuck Porter and Art Palmer

36. Addis moved to open the Committee of the Whole. The Vice President will preside. Items can be entered as new business.

2nd by Berger

Passed Unanimously

- GeoCaching – what are we doing with this. I will check for minutes and what was discussed
- Engel – snowplowing at Clarksville, Thom personally paid for plowing twice this year. Discussion will happen between Clarksville managers and treasurer to add to next years budget.
- Engel – policy for filming in NCC caves, will now be in the management plan to contact the managers
- Merlins – changes due to conservation easement with CLC are being worded. (Merlins will be next on management plan review) we have to be careful of wording to not include “Guide” This is also important to Merlins, Stewardship is good term. Morgan will add new wording and send around to board before the next meeting so we can accept
- Bensons Gate discussion – rethought the legal thoughts on the cave concerning liability. But consensus is to keep it as remove the gate.
- Brochure – we did not get the grant. But will work on getting a brochure out now. Grant was given to Secretary/Publicity chair to get started. Will try for the grant again for other publicity needs
- Grant – are we going to try again for this coming year? Peter does not think we will get any more funds so we will have to decide if we are going to do it again.
- Bob Simmons – CLCC Connecticut Land Conservation Council (?) other states have as well. Learning opportunity and to meet other conservancy groups. Should we be sponsor or attendees

37. Folsom moved to close the Committee of the Whole.

2nd by Morgan

Passed unanimously

38. Hay moved to accept the minutes of the December 2013 meeting.

2nd by Engel

For Rest Abstained Hay, Porter, Del Valle

Passed

39. Kappler moved NCC Act 75-49 is amended as follows: <remove> <<insert>>

Act 75-49 Dollar Value for Volunteer Work 12/06/09, 12/10/06

The Northeastern Cave Conservancy will follow the guidelines found in Appendix <AN> <<AD.1>> of the NSS Board of Governors Manual in calculating Volunteer Value for NCC projects. The "dollar" amount credited for labor may be adjusted periodically to reflect the current value generally credited by non-profit organizations for volunteer labor.

This a "housekeeping" move to keep our VV guidelines in sync with the NSS model. The NSS renegotiated it's Memorandum of Understanding with the US Forest Service and the VV guidelines were moved from Appendix AN, made an attachment to Appendix AD and renamed Appendix AD.1. The NSS VV guidelines can be found at <https://secure.caves.org/nss-business/bog/Append-AD.1.pdf>

2nd by Folsom

Passed unanimously

40. Addis moved to sponsor the North American Symposium for Bat Research, Act 65-88, at the \$1000.00 level.

2nd by Engel

For Rest Opposed Folsom abstained – Porter, Del Valle

Passed

41. Addis moved that we approve the research in Clarksville as long as they fix the following issues: apply for special use permit and send results to Journal of Karst.

2nd by Berger

Passed unanimously

42. Hay moved that Bob Simmons be NCC representative to the CLC Conference.

2nd Porter

Passed Unanimously

43. Engel moved to authorize the President to appoint representatives at his discretion for LC/LT gatherings in 2014 at personal costs.

2nd by Warner

Passed Unanimously

44. Informational Point: Executive committee meeting will be April 24, 2014 at 7:00pm. NCC Conference Call: 605-475-6111, Access Code: 814008

45. Addis moved that the next NCC Board meeting will be at Mike Chu's house June 8th at 10:00am.

2nd by Folsom

Passed unanimously

46. Addis moved to thank Bob Simmons and HRP for hosting the meeting.

2nd by Lee

Passed unanimously

47. Addis moved to adjourn

2nd by Hay

Passed unanimously

Meeting adjourned at 12:45

Attachment A
PRESIDENT'S REPORT

1. **Bensons Cave.** The acquisition of Benson's Cave, Schoharie County, NY seems to be the biggest item over the winter. The United States Cave Conservancy (USCC) bought the cave and approximately 6.5 acres of land in 1993 and more recently has been preparing to donate it to the NCC. Over the past few months, the NCC has done its due diligence in drafting a management plan, completing a new land survey, title search, and arrangements for liability insurance once the closing occurs. The NCC at the December 2013 meeting authorized the President to sign the papers although the actual closing and NCC ownership commences with the signing by the USCC's President first. I sign later and some paperwork is recorded in the Schoharie County Courthouse.

So where is this process right now? Our attorney has gotten the proper forms for recording to their attorney. We believe that at this time, the new deed has been written by their attorney. The dangling phrase we hear now is that their attorney has experienced delays due to "illness and travel" on the part of the USCC President. Rest assured that the NCC Board and in particular the Executive Committee is directly on top of this situation and will announce the signing-closing the moment it happens. The Benson's Cave Preserve will need a thorough clean up as soon as the NCC takes ownership – watch for details if you can help. As well or in addition, the Spring NRO will be held at nearby Hideaway Campgrounds in Central Bridge and hopefully Bensons will play a part in that weekend.

2. **End of the Year Donations.** We had a modest response to our request for donations in December with one major exception. A member we don't see often if ever mailed us \$3,000 with a note that it was for "all the good work that you people are doing". He had caved there several years ago and had a number of questions about passage connections in Clarksville, particularly the Ward-Gregory link. Along with a thank you letter and my answers to his questions, I include a full-sized Clarksville poster. This is the one used at the kiosk with cave map and several photographs showing areas of the cave. Nice, on both parts!
3. I have agreed to author a motion for a \$1,000 sponsorship of the North American Symposium for Bat Research to be held later in 2014. Personally I am in favor of strengthening our partnerships with the scientific community as a demonstration of the NCC Mission Statement, although as President I generally do not vote.

Attachment B
Vice President's Report

NCC Manual

Twelve pages of the manual were updated after the December meeting and posted to the web site a few days later.

Liability

I received assurance from our liability carrier that the Bensons Preserve would be added to our policy as soon as we closed on the property. The additional premium was estimated at \$160 annually plus tax and would be pro-rated to coincide with our current policy term.

The question of dropping liability waivers and any impact on our liability policy is an ongoing email conversation with our insurance broker. Because I'm working through a broker, the conversation is slow because she has to confer with the legal department of our policy carrier, Seneca Specialty. I'm trying to shift the discussion to a direct dialogue between us and Seneca because Seneca, although a New York based company, may not be fully aware of the protections afforded landowners by the NY sportsmen's law.

EC Conference Call 2/14

The February conference call was probably the shortest I've participated in. The primary topic was progress on Bensons and how we, the NCC, anxiously await word that the USCC has signed the paperwork transferring the title to us.

Miscellaneous

I assisted the President by personalizing and mailing his "end of the year" letter to all Life Members.

Attachment C
Treasurer's Report
March 3, 2014

Balance Sheet 03/03/2014

As of March 3, 2014

Mar 3, 14

ASSETS

Current Assets

Checking/Savings

 Checking 1,857.00

 Money Market 20,000.87

 NSF Account 50,642.27

 PayPal Checking 63.68

 Total Checking/Savings 72,563.82

The Merlins Preserve property is now off the Town of Canaan's tax rolls, confirmed via email on 1/15/14 by Kimberly Cammer, Tax Assessor.

Profit & Loss Budget vs. Actual

03/03/2014

January 1 through March 3, 2014

	<u>Jan 1 - Mar 3, 14</u>	<u>Budget</u>
Ordinary Income/Expense		
Income		
Donations		
Auction Donations	0.00	2,000.00
Donations - Other	<u>3,306.04</u>	<u>3,500.00</u>
Total Donations	3,306.04	5,500.00
Interest Earned	1.45	5.00
Membership Income	<u>260.00</u>	<u>4,260.00</u>
Total Income	3,567.49	9,765.00
Expense		
Acquisitions	0.00	855.00
Bank Charges	3.76	25.00
Development	0.00	1,000.00
Donations-outgoing	0.00	200.00
Easements	0.00	0.00
Education	0.00	100.00
Executive		
President	0.00	150.00
Secretary	0.00	75.00
Treasurer	0.00	275.00
VP	<u>0.00</u>	<u>75.00</u>
Total Executive	0.00	575.00
Insurance	0.00	1,200.00

Legal Fees	0.00	2,000.00
Licenses & Permits	0.00	150.00
Meeting Expense	0.00	100.00
Membership Expenses	0.00	100.00
Miscellaneous	0.00	100.00
Office Expense	0.00	100.00
Postage	0.00	100.00
Preserves-Maintenance		
Bentleys	0.00	100.00
Clarksville	0.00	300.00
Ella Armstrong	0.00	100.00
Knox	0.00	100.00
Merlins	0.00	100.00
Onesquethaw	0.00	100.00
Sellecks	0.00	100.00
Total Preserves-Maintenance	0.00	900.00
Printing	0.00	100.00
Promotion/Fundraising	0.00	800.00
Publishing		
Mailings	0.00	100.00
Website	0.00	60.00
Total Publishing	0.00	160.00
Sponsorships	0.00	500.00
Taxes on Properties	661.87	700.00
Total Expense	665.63	9,765.00
Net Ordinary Income	2,901.86	0.00
Other Income/Expense		
Other Income		
In Kind donations	0.00	0.00
Volunteer Value	0.00	0.00
Total Other Income	0.00	0.00
Other Expense		
In Kind Out	0.00	0.00
Volunteer Value Exp	0.00	0.00
Total Other Expense	0.00	0.00
Net Other Income	0.00	0.00
Net Income	2,901.86	0.00
Net Gain or Loss from NSF Fund	0.00	
NET Income after NSF Fund Gain/Loss	2,901.86	

Attachment D
EC Minutes

EC Meeting
02/11/2014
Conference Call

Conference call: Bob, Bill, Vince, Christa, Paul

Hofstra University Sabrina Yates asked about filming (student film project) in a wild cave. She contacted Bill and Bob. Bill contacted her stating she should check on using Clarksville cave stating issues with WNS. She wants to use a cave sooner to NYC. She also called Bob after.... Bob will call her as well and reiterate what Bill said.

DEC bat counts are under way. I will ask Ryan if DEC can just go onto property if owners do not cooperate.

Bensons Caves - Bob has been in discussion with Jim concerning the mapping and the description. Jim will write the deed and then to Harry Brandle will sign to turn over to the NCC.

Christa – we should have a promotional party at Bensons with a press release.

Vince – we should re address the gating issues at the cave. He thinks he over stated what the attorney said would happen if we fixed / added gate.

Christa – add to committee on the whole should we revisit the gating issue.

Has Thom finished the Benson management plan? Bob will check.

Attachment E

Promoting undergraduate research in large classrooms:

DNA sequencing of *Stygobromus* amphipods from the Ice Caves at Sam's Point Preserve and from Clarksville Cave Preserve; Same species or different species?

Luis Espinasa

Associate Professor. Marist College. 3399 North Road, Poughkeepsie, NY 12601. Luis.espinasa@marist.edu (845) 851-4022.

Abstract

Students of the BIOL320 Genetics undergraduate course at Marist College will be given the opportunity to participate in an actual novel research project. *Stygobromus allegheniensis* is a small aquatic, troglitic amphipod crustacean. The species has been reported in two of the most-visited, undeveloped caves in the Northeast. The Ice caves at Sam's Point Preserve and Clarksville Cave. But these two caves are 65 miles distant from each other and on different geological formations, so therefore it is impossible that there is a cave connection between the two. Since in theory troglitic cannot survive on the surface, both populations could actually belong to different species. Students will sequence their 16S DNA in an effort to resolve if they belong to the same species or to different species, in which case one of the two cave populations could be a new, previously undescribed species.

Introduction

In recent years, the inclusion of research in undergraduate work has been deemed as one of the best practices in undergraduate education. While this is acknowledged by most, efforts are typically restricted to providing just a handful of outstanding students the opportunity of working on a research project. The great challenge is how to bring large classes into the laboratory and involve them in novel research. At Marist College we have been able to create an extremely successful model. The key for this achievement has been combining two tools: molecular genetics and a cave/karst-related educational program.

Since my beginnings at Marist College in 2007, and as a professor of Genetics, the most relevant pedagogical innovation I have been conducting is the inclusion of novel research projects as an integral part of the laboratory component of my courses. This involves 24 undergraduate students per course while fulfilling the standard academic goals of an upper level course in Genetics. Instead of purchasing standard educational kits, the students get to use real reagents and real samples. The research goals in my course of Genetics have been to sequence the DNA from new species or populations of cave organisms such as cave fish and insects. There are so many unanswered and interesting questions regarding cave organisms that can be approached by sequencing DNA, a technique which is well within the capabilities of undergraduate students, that finding novel research projects every year is relatively simple.

The goals of these projects have been ambitious and the results were published in peer-reviewed journals. Students get to experience how scientific research is really conducted, and while they do so, they became familiar with cave and karst resources, and proficient in techniques used in modern genetics such as DNA extraction, PCR, DNA sequencing, and genomic analyses. Some students have then collaborated in the description of various species. As a cave biologist, my undergraduate students regularly appear as authors or co-authors on scientific papers. Marist College students from my mentored projects have published, or have in-press, 24 articles in peer-reviewed journals. You will find the list of these publications in my cv.

Statement of Problem

Stygomobromus allegheniensis is a small aquatic, troglotic amphipod crustacean. The species has been reported in two of the most-visited, undeveloped caves in the Northeast. The Ice caves at Sam's Point Preserve and Clarksville Cave. But these two caves are 65 miles distant from each other and on different geological formations, so therefore it is impossible that there is a cave connection between the two. Since in theory trogloticites cannot survive on the surface, both populations could actually belong to different species. DNA sequencing of their 16S rRNA should resolve if they belong to the same species or to different species.

Background

Over the past years and in collaboration with the authorities of Sam's Point Preserve and The Nature Conservancy, Students of Marist College have been participating in an inventory of the fauna that inhabits their ice caves. The most interesting discovery was a troglotic amphipod crustacean. These specimens were identified by John R. Hollinger, a specialist of amphipods, as *S. allegheniensis*.

Stygomobromus allegheniensis is believed to occur in Maryland, Pennsylvania and New York. The species is not considered threatened and is not included in any endangered species list. It has not been granted any special conservation status. One particular cave where it has been reported is Clarksville Cave. In the Northeastern Cave Conservancy's management plan for Clarksville Cave preserve it states "The invertebrates found in the cave are not endangered and do not appear to have been affected by human visitation. These include: *Stygomobromus allegheniensis*, an aquatic, troglotic amphipod."

While the two populations may not have distinguishing morphological features, the distance and isolation between the two caves support that they should have derived from independent colonization events of the cave environment. As such they could be included in different species, if genetic evidence could support them being significantly different.

Research Methods

Samples from the Ice caves have already been obtained and multiple specimens are available and ready for DNA extraction. These specimens are currently held at Marist College. For this study, new samples of *S. allegheniensis* from Clarksville cave have to be obtained. Since this is a pilot taxonomic study, with 2-5 specimens only would be more than sufficient to fulfil the goals of this study. As mentioned before, this species is not in any conservation list. The population appears to be large. The author of this proposal has seen them in multiple trips and they appeared abundant. While we are not aware of any actual study attempting to calculate their population size, the author of this proposal estimates that they are within the thousands based on informal observations. The species also appears to be very resilient to accidental mortality. Specimens are observed in pools and portions of the stream that are constantly being trampled by the many visitors to the cave. Undoubtedly scores are accidentally killed. Nonetheless, throughout the years the population does not appear to have been affected by the heavy human visitation. It is our belief that extracting 2-5 individuals will not cause permanent damage to the cave's biota, nor interfere with its natural processes.

To collect specimens, less than 10 students accompanied by 2-3 highly experienced cavers will visit the cave on one or two occasions. Students will bring or be provided with at least the following minimum equipment: helmet with a chin strap; three (3) sources of light, one of which will be helmet mounted and knee pads. All students will be instructed and expected to abide by the normally accepted rules of safe and conservation minded caving as outlined by the National Speleological Society. Furthermore, students will be educated into treating Clarksville Cave as a unique natural resource, where nothing should be taken out of the cave except trash and the specific specimens accepted for the protocol of this study.

Specimens will be collected by hand with the help of a pipette or with a small baited trap left for less than 24 hrs. All trapped specimens not necessary for the study will be returned unharmed. Two-five specimens will be deposited in 100% ethanol so as to best preserve their DNA and transported to Marist College. During the laboratory activities of the course of Genetics, students will extract genomic DNA using Qiagen's DNEasy® Tissue Kit by digesting a leg in lysis buffer. Amplification and sequencing of the 16S rRNA fragment will follow standard protocols and primers for the 16S rRNA fragment (Espinasa and Giribet 2009).

Analysis Methods

Chromatograms obtained from the automated sequencer will be read and contigs will be made using the sequence editing software Sequencher™ 3.0. External primers will be excluded from the analyses. Alignment of DNA sequences and phyletic analyses will be performed using ClustalW.

Expected Results

- 1) DNA sequences of the 16S rRNA from both populations will be obtained.
- 2) Sequences will be submitted to GenBank.
- 3) Samples of previously unstudied population of cave organisms will be available for the students of the Genetics course at Marist College to do their laboratory work. This allows for undergraduates in a large classroom to conduct real, novel research whose results are publishable.
- 4) Students having the experience of participating in collecting field expeditions to caves.
- 5) Depending on the results obtained, results will be sent for publication to the NRO Northeastern Caver bulletin or to the journal of Biospeleology Notes.

Estimate of the beginning and ending dates of the research

Study will be conducted during the spring semester at Marist College: January-May, 2014

Other information that will help the Science Coordinator and the Board to understand the research and its importance

The proposed study meets the following general objectives:

- 1) Increases the understanding of processes and features on NCC property: In particular it helps to give a precise species identity to the troglobite that inhabits this preserve.
- 2) Could lead to a better management of an NCC property: By defining if the troglobite belongs to a common species or to a unique, endemic species, better informed conservation decisions could be made.
- 3) Improves the overall “experience” of those visiting NCC property: If the species is shown to be of interest, visitors could have access to this information in the future. It would further enhance their perception of the cave being “special”.

In addition, the research carried out on NCC property will meet the following criteria:

- 1) The goals and objectives of the research must be clearly defined: Sequence the DNA of amphipod troglobites that inhabits Clarksville cave and compare it to the ones that inhabit the Ice caves at Sam’s Point Preserve. Results will support or reject if they belong to the same species.
- 2) The research must not duplicate research already carried out: This is novel research. Not only have these two populations not been studied genetically, but the species’ DNA has never been sequenced for any of its genes.
- 3) There must be a clear beginning and end to each project: Jan-May, 2014.
- 4) The work must not cause permanent damage to any caves, natural features, biota, or historical resources nor interfere with natural hydrologic or chemical processes: Students will be thoroughly educated on proper caving behavior, techniques and “etiquette”, so as to conserve the natural resources of the cave. Regarding the biological impact, only 2-5 specimens will be extracted from a large population. The species is also quite resilient to the abundant accidental mortality caused by the normal trampling of heavy visitation to this cave. As such, the biological impact of this study is minimal in comparison and therefore of little to no effect.
- 5) The research plan must assure the maximum safety of all concerned: All students will be provided with proper caving equipment and will be instructed on safe caving techniques. The team will be of a maximum of 13 individuals. There will also be a ratio of 3:1 students to a highly experienced caver.
- 6) Unless specifically authorized by the NCC Board, researchers must operate within the confines of the established management plans for each property: Visitations will operate within these confines.
- 7) The work must not interfere with the “experience” of other property visitors: Our team will visit the cave one or two times. Students will be instructed to be respectful of other visitors. Our collecting activities should not interfere with other visitor’s experience. It could actually enhance them since we could make them aware of the unique biota that inhabits the cave.

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PROFESSIONAL EXPERIENCE

<i>Associate Professor of Biology</i> , School of Science, Marist College, Poughkeepsie, New York	2006-present
<i>Associate Professor of Biology</i> , School of Arts & Sciences, Shenandoah University, Winchester, Virginia	2005-2006
<i>Assistant Professor of Biology</i> , School of Arts & Sciences, Shenandoah University, Winchester, Virginia	2003-2005
<i>Associate Professor of Biology</i> , Center for Research on the Biosphere Reserve at Sierra de Huautla, Morelos State University, Morelos, Mexico	1997-2003
<i>Visiting Researcher</i> , Laboratory of Dr. Gonzalo Giribet, Department of Organismic and Evolutionary Biology, Harvard University	2001, 2004
<i>Visiting Researcher</i> , Laboratory of Dr. Randall T. Schuh, Division of Invertebrate Zoology, American Museum of Natural History	2001

EDUCATION

<i>Postdoctoral Fellow</i> , Laboratory of Dr. William Jeffery, University of Maryland at College Park	2002-2003
<i>Ph.D.</i> , New York University, New York, NY, (Biology)	1997
<i>B.S.</i> , National University of Mexico (UNAM), Mexico City, (Biology with honors)	1992

TEACHING EXPERIENCE

School of Science, Marist College, Poughkeepsie, New York Undergraduate level: Genetics, Research I and II, General Biology, Cave Biology, Molecular Biology, Invertebrate Zoology, Life on Earth.	2006-present
School of Arts & Sciences, Shenandoah University Undergraduate level: Genetics, Cell Biology, General Biology, Animal Behavior Vertebrate Zoology, Tropical Field Ecology, Ocean Field Ecology, Desert Field Ecology	2003-2006
Department of Biology, Morelos State University, Undergraduate level: Population Genetics, Biospeleology, Human Evolution, Evolution, Systematics, Paleontology	1997-2001
Institute of Ecology, National University of Mexico, Graduate level: Host-Parasite Interactions: An Evolutionary Perspective	1998
<i>Teaching assistant</i> , Department of Biology, New York University, Undergraduate level: Tropical Field Ecology	1995-1996

NEW SPECIES OF ORGANISMS DESCRIBED

- One genus of worm (Polychaeta Nereididae): *Lycastilla cavernicola*
- Three genera of silverfish (Zygentoma: Nicoletiidae): *Squamigera latebricola*, *Acanthonima veracruz* and *Speleonycta ozarkensis*.
- Fourteen species of silverfish (Zygentoma: Nicoletiidae): *Squamigera cumcalcaris*, *Squamigera jaureguii*, *Anelpistina musticensis*, *Anelpistina ariasae*, *Anelpistina inappendicata*, *Anelpistina cuaxilotla*, *Anelpistina puertoricensis*, *Anelpistina doradoi*, *Anelpistina acanthocruris*, *Anelpistina yatbalami*, *Prosthecina avita*, *Cubacubana mexicana*, *Cubacubana asymmetrica*, and *Cubacubana parkerae*.
- Two new blind cave fish populations (Pisces): *Astyanax aeneus* and *Cottus sp.*

PUBLICATIONS

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2. Espinasa, L. Collins, E., and Botelho, J. (Submitted) Two new nicoletioid species (Insecta: Zygentoma) from the Yucatan Peninsula, México. *Proceedings of the Biological Society of Washington*.
3. Espinasa, L. and Socci, K. (Submitted) A new species of Anelpistina (Nicoletiidae: Zygentoma: Insecta) from the Selva Lacandona rainforest in Mexico. *Proceedings of the Biological Society of Washington*.
4. Espinasa, L. and Botelho, J. (Submitted) A New Species of Speleonycta (Insecta: Zygentoma) from the bay area of San Francisco, California. *Proceedings of the Biological Society of Washington*.
5. Espinasa, L. and Mathes, J. (Submitted) A new species of genus *Anelpistina* (Insecta: Zygentoma: Nicoletiidae) from Todos Santos, Baja California Sur, Mexico. *Proceedings of the Biological Society of Washington*.
6. Collins, E. and Espinasa, L. (Submitted) Assessing the effects of ecotourism on whale sharks (*Rhincodon typus*) from Holbox, Mexico using boat propeller wound data. *Revista Mexicana de Biodiversidad*
7. Espinasa, L., Gardner, B., Graening G. O., and Cahill, M. (Submitted) Genetic support for silverfish insects (Zygentoma: Nicoletiidae) colonizing caves during the Wisconsin Ice Age in the Sierra Nevada Mountains, California. *Journal of Cave and Karst Studies*.
4. Espinasa, L. and Espinasa-Pereña, R. (Submitted) Sistema Huautla: Deep cave exploration and the opportunity for new molecular studies of its fauna. *Speleobiology Notes*.
8. Espinasa, L., Bartolo, N. D., Newkirk, C. E. (Submitted) DNA sequences of troglotic nicoletioid insects support Sierra de El Abra and the Sierra de Guatemala as a single biogeographical area: Implications for *Astyanax*. *Speleobiology Notes*.
9. Espinasa, L., Stahl, B. A., Krutzler, A. J., and Gross, J. B. (In press) Mutations in the Mc1r gene support parallelism at the molecular level across species in the evolution of troglomorphic characters. *Speleobiology Notes*.
10. Espinasa, L., Centone, D. M., and Gross, J. B. (In press) A contemporary analysis of a loss-of-function of the oculocutaneous albinism type II (Oca2) allele within the Micos *Astyanax* cave fish population. *Speleobiology Notes*.
11. McCaffery, S., Collins, E., and Espinasa, L. (2014) Eye histology of the Tytoona cave sculpin: Eye loss evolves slower than enhancement of mandibular pores in cave fish? *Speleobiology Notes* 6: 1-7.
12. Bibliowicz, J., Alié, A., Espinasa, L., Yoshizawa, M., Blin, M., Hinaux, H., Legendre, L., Père, S., and Rétaux, S. (2013) Differences in chemosensory response between eyed and eyeless *Astyanax mexicanus* of the Subterráneo cave. *EvoDevo* 4(25): 1-6.
13. Espinasa, L. and Mendes, L. F. (2013) The first cavernicolous Nicoletiidae (Insecta: Zygentoma) from The United Arab Emirates. *Journal of Cave and Karst Studies* 75(2): 121–125.
14. Espinasa, L., Cahill, A., McCaffery, S., and Millar, C. (2013) Partial sequence of a gene involved in skin coloration (MC1R) from the Pennsylvanian Grotto Sculpin. *Speleobiology Notes* 5: 60–65.

15. Espinasa, L., Taylor, S. J., and Espinasa, M. (2013) A new record of *Nicoletia phytophila* (Nicoletiidae: Zygentoma: Insecta) from a cave in Belize. *Speleobiology Notes* 5: 38-42.
16. Espinasa, L., Mendyk, A., Schaffer, E., and Cahill, A. (2013) The Second Northernmost Cave-Adapted Fish in the World? Groundwork on the Tytoona Cave Sculpin Population. *Northeastern Naturalist* 20(1):185-196.
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18. Espinasa, L., Collins, E., and Socci, K. (2012) A New Species of Genus *Anelpistina* and the Second Described Nicoletiid (Zygentoma: Insecta) Species from the Mayan Ruins of Palenque, Chiapas, Mexico *ISRN Zoology* 2012: 1-4 Article ID 802371, doi:10.5402/2012/802371
19. Espinasa, L., Socci, K., McCaffery, S., and Cahill, A. (2012) A New Species of *Anelpistina* (Nicoletiidae: Zygentoma) from Sumidero Canyon National Park, in Chiapas, Mexico. *Proceedings of the Entomological Society of Washington* 114(3): 285-292.
20. Espinasa, L., Pape, R. B., Henneberry, A. and Kinnear, C. (2012) A New Species of Nicoletiidae (Insecta: Zygentoma) from Kartchner Caverns State Park, Arizona. *Journal of Cave and Karst Studies* 74(1): 82–89.
21. Espinasa, L. and Lang, A. (2012) A New Species of *Anelpistina* (Nicoletiidae: Zygentoma: Insecta) from los Tuxtlas Biosphere Reserve in Mexico. *Proceedings of the Entomological Society of Washington* 114(4):456-463.
22. Espinasa, L., Dunfee, M., Lettieri, C. and Walker, J. (2011) Cosmopolitan Dispersion in a Parthenogenetic Insect (*Nicoletia phytophila*; Zygentoma): Human Facilitated or Much Older? *Proceedings of the Biological Society of Washington* 124(4): 310-317.
23. Espinasa, L., Furst, S., Allen, T., and Slay M.E. 2010. A new genus of the subfamily Cubacubaninae (Insecta: Zygentoma: Nicoletiidae) from caves in south-central and southwestern USA. *Journal of Cave and Karst Studies* 72(3): 161–168.
24. Espinasa, L., Henneberry, A., and Turner, T. (2009) Cenozoic colonization of the Lesser Antilles by Nicoletiid insects (Zygentoma, “Apterygota”) and a new species of *Anelpistina* from Mustique Island. *Proceedings of the Biological Society of Washington* 122(4): 449-459.
25. Espinasa, L. and Boyko, Y. (2009) A new troglobitic species of *Anelpistina* (Hexapoda: Zygentoma: Nicoletiidae) from northern Mexico. *Texas and Mexico Memorial Museum Speleological Monographs, 7. Studies on the cave and endogean fauna of North America* 5: 79-86.
26. Espinasa, L., and Giribet, G. (2009) Living in the dark—species delimitation based on combined molecular and morphological evidence in the nicoletiid genus *Texoreddellia* Wygodzinsky, 1973 (Hexapoda: Zygentoma: Nicoletiidae). *Texas and Mexico. Memorial Museum Speleological Monographs, 7. Studies on the cave and endogean fauna of North America* 5: 87-110.
27. Espinasa, L. and Vuong, N. H. (2008) A new troglobitic species of *Anelpistina* (Hexapoda: Zygentoma: Nicoletiidae) from Yextla cave, Guerrero, México. *Proceedings of the Biological Society of Washington* 121(3): 382-390.
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29. Espinasa, M. and Espinasa, L. (2008) Losing Sight of Regressive Evolution. *Evolution: Education and Outreach* 1(4): 509–516
30. Espinasa, L. and Cappuccio, E. (2008) New genus allocation for the cavernicole Nicoletiids (Insecta: Zygentoma) of Aruba and description of their previously unknown males. *Proceedings of the Entomological Society of Washington*. 110(2): 292–299.
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33. Espinasa, L. and Fisher, A. (2006) A cavernicole species of the genus *Anelpistina* (Insecta: Zygentoma: Nicoletiidae) from San Sebastian cave, Oaxaca, Mexico. *Proceedings of the Entomological Society of Washington* 108(3): 655-660.
34. Espinasa, L. and Rishmawi I. J. (2005) A new species of the genus *Cubacubana* (Insecta: Zygentoma: Nicoletiidae) from a cave in Hidalgo, Mexico. *Proceedings of the Biological Society of Washington*. 118(4): 802-807.
35. Espinasa, L. and Espinasa, M. (2005) Why do cave fish lose their eyes? *Natural History*. 114(5): 44-49.
36. Espinasa, L., Yamamoto, Y. and Jeffery, W. R. (2005) Non-optical releasers for aggressive behavior in blind and blinded *Astyanax* (Teleostei, Characidae) *Behavioural Processes*.70(2): 144-148.
37. Espinasa, L. (2005) A new species of the genus *Anelpistina* (Insecta: Zygentoma: Nicoletiidae) from Peru. *Proceedings of the Biological Society of Washington*. 118(2): 337-345.
38. Espinasa, L. (2005) A new genus of the subfamily Cubacubaninae (Insecta: Zygentoma: Nicoletiidae) from Veracruz, Mexico *Proceedings of the Entomological Society of Washington*. 107(3): 510-516.
39. Espinasa, L. and Burnham, B. (2004) Revision of the genus *Squamigera* (Insecta: Zygentoma: Nicoletiidae) with description of two new species. *Proceedings of the Biological Society of Washington*. 117(4): 582-593.
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41. Espinasa, L. and Jeffery, W. R. (2003) A troglomorphic sculpin (Pisces: Cottidae) population: Geography, morphology and conservation status. *Journal of Cave and Karst Studies*. 65(2): 93-100.
42. Espinasa, L. and Baker Alpheis, M. (2003) A new cavernicole species of the genus *Anelpistina* (Insecta: Zygentoma: Nicoletiidae) from the Guánica subtropical dry forest, Puerto Rico. *Proceedings of the Biological Society of Washington*. 116(2): 503-508
43. Espinasa, L. and Baker Alpheis, M. (2001) A new species of the genus *Anelpistina* (Insecta: Zygentoma: Nicoletiidae) from the Biosphere Reserve Sierra de Huautla. *Proceedings of the Biological Society of Washington*. 114(2): 489-496.
44. Espinasa, L. and Borowsky, R. (2001) Origins and relationship of cave populations of the blind Mexican tetra, *Astyanax fasciatus*, in the Sierra de El Abra. *Environmental Biology of Fishes* 62: 233-237.
45. Espinasa, L., Rivas-Manzano, P. and Espinosa Pérez, H. (2001) A new blind cave fish population of genus *Astyanax*: Geography, Morphology and Behavior. *Environmental Biology of Fishes*. 62: 339-344.
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49. Espinasa, L. (1999) A new genus of the subfamily Cubacubaninae (Zygentoma: Nicoletiidae) from a Mexican cave, *Proceedings of the Biological Society of Washington*. 112(1):52-58.
50. Espinasa, L. (1999) Two new species of the genus *Anelpistina* (Zygentoma: Nicoletiidae) from Mexican caves, with redescription of the genus, *Proceedings of the Biological Society of Washington*. 112(1): 59-69.
51. Espinasa, L. and Borowsky, R. (1998) Evolutionary Divergence of AP-PCR (RAPD) patterns, *Molecular Biology and Evolution* 15(4): 408-414.
52. Espinasa, L. (1991) Descripción de una nueva especie del género *Cubacubana* (Zygentoma: Nicoletiidae) y registro del género para América Continental, *Folia Entomológica Mexicana* 82: 5-16.
53. Solis-Weiss, V. and Espinasa, L. (1991) Lycastilla Cavernicola, a new fresh water nereid from an inland Mexican cave (Polychaeta: Nereididae: Namanereidinae), *Proceedings of the Biological Society of Washington*. 104(3): 631-639.

Text book chapters

1. Espinasa, L. (2000) Chapters 2, 4 and 5. In: *Morelos: Espacio y Tiempo*. Gobierno del Estado de Morelos. México. 246 pp. (9th grade textbook for the state of Morelos, Mexico).

PROFESSIONAL SOCIETIES

The Entomological Society of Washington (USA)	2004-present
National Speleological Society (USA)	2003-present
The Explorers Club	2007-2009
Sociedad Espeleologica de Cuba (Cuba)	2002-2002
The Biological Society of Washington (USA)	1997-present
The Explorers Club (USA)	1996-1996
MetGrotto (Caving group of New York City)	1994-1997
Sociedad Mexicana de Entomología (Entomological Society of Mexico)	1988-2002
Sociedad Mexicana de Exploraciones Subterráneas (Mexican Society for Underground Exploration)	1982-present

LANGUAGES

English, Spanish, Catalanian.

Attachment F
Membership Committee Report

It was with great disappointment that we were not successful with the Parks and Trails New York membership development grant. This grant was designed to build membership in our organization by updating our brochures, table displays, and web materials. Total amount requested was \$2730. We committed \$1300 of NCC funds: \$1000 from the Development line of the budget and \$300 from the \$800 promotion budget, as well as volunteer time for the in-kind match.

We will now have to do the new brochures and any table displays on our own, and without the \$2,730 of PTNY funds. We desperately need new materials, as our current ones are both out of date in terms of the Preserves, membership information, and liability concerns.

I would also point out that the budget we adopted for 2014 assumed the increase in memberships driven by new brochures and other outreach described in the grant. So, in addition to the updating of information and legal issues, our budget depends on growth – so we can't let the lack of grant funds get in the way of our much-needed update.

I do have all the materials we prepared for the grant, including the rationale, a timetable, and the various vendor quotes for prices. I will prepare a ring binder with these and bring them to the meeting to give to Christa, who, as Secretary, is responsible for the materials. Anyone who wants to work on this can take a look and help out.

In addition, for the September NCC meeting, I had prepared a thorough analysis of all our web materials and flagged all those items either out of date, or in need of changing as a result of the legal liability reports we received and adopted. I've recently sent these again to Mike Chu, so he can make some obvious changes on his own. Others will require additional committee and board work for guidance.

In terms of the usual membership outreach and renewal activities, all renewal notices for memberships up by March 31 have been sent, and new memberships and renewals have been acknowledged and entered into the data base. It is current as of March 1. Second reminders were sent to those November/December maturing memberships who had not yet replied.

As of information reported to me by Feb. 28, 2014, our current membership stands as follows, compared to the baseline of April 22, 2012:

Feb. 28, 2014

April 22, 2012

Life:	30	Life:	18
Family Life:	0	Family Life:	0
Benefactor:	15	Benefactor:	10
Regular:	100	Regular:	88
Family:	17	Family:	16
Student:	3	Student:	0
Institutional:	7	Institutional:	3

TOTAL: 172 (vs. 162 in Dec.)

TOTAL: 135

In terms of additional outreach, I posted a notice on the NCC Facebook page (thanks, Bill, for the idea). We suspect there are many people who see that page and are not NCC members. The notice begins with a question: Have you ever visited Clarksville Cave? Onesquethaw, etc... and points out this is thanks to the all-volunteer NCC. Other membership benefits are then touted, and the dues information is presented. Let's hope this nets some new members.

Further, one of the best ways to grow membership is to not let people get away. Any non-profit development director will tell you that maintaining current members is far easier than getting new ones. To that end, here is a list of the people whose NCC memberships have lapsed in the past year. I ask all Board members who know any of these people to reach out to them and ask them to renew. If their membership is more than 6 months old, we'll re-set their renewal date and give them a full year's membership – such a deal! So please, Board Members, we need your help:

Finally, here's a list of our current Institutional members. If your grotto or outing club isn't here, please put in a plug. If you know a camp or other group that we should solicit, please do so, or let me know. With your help, we can grow this list, and likely recruit more individual members, as well:

Camp Scatico, Elizabelle, NY
Vermont Cavers Association
Boston Grotto
Metropolitan Grotto
Helderberg Hudson Grotto
Onondaga Community College, Syracuse, NY
Central Connecticut Grotto

Attachment G
Place holder