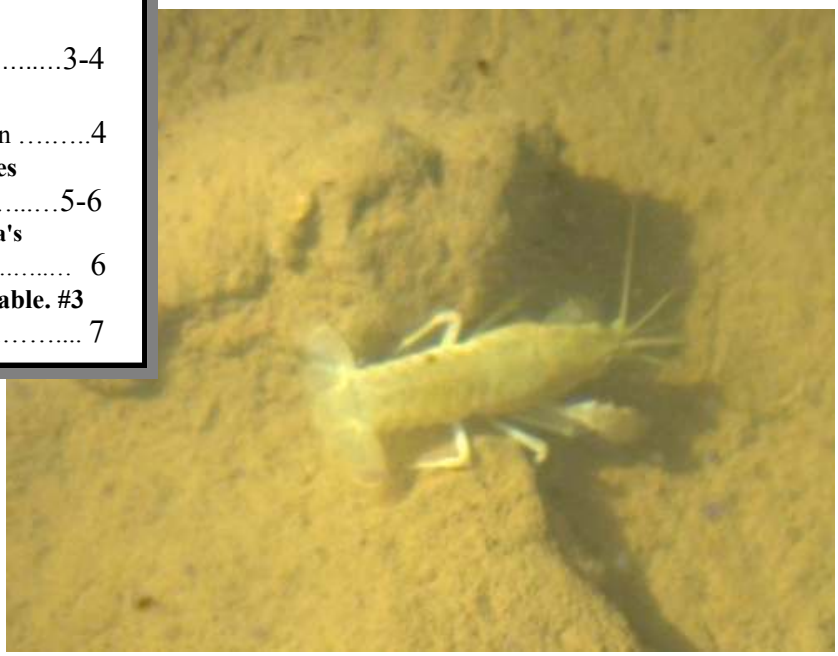
CENTRAL OKLAHOMA GROTTO
OF THE NATIONAL SPELEOLOGICAL SOCIETY,INC

C.O.G.nizance

Inside this Issue

Announcements ……..……...……...…....2
Minutes……...……..……..……..……2
Treasurer's Report ……..……...……...……..3
Trip Reports
Jester Bat Count; Feb. 16, 2013
written by Duane Del Vecchio ……...…3-4
Potpourri
Bat Count Summary for 2013; by Sue Bozeman ……..4
White-Nose Syndrome Fungus Persists in Caves Even when Bats are Gone 1/10/2013 ……...…5-6
Caves Point to Thawing of Siberia: Thaw in Siberia's Permafrost May Accelerate Global Warming ……..…. 6
3 Preludes to Caving: The Mystery, The Unknowable. #3
Music written by Steve Beleu…….…….... 7

The March meeting of the Central Oklahoma Grotto will be held Friday, March 8, 2013, at 7:30 p.m. The meeting will be at the home of Dale Amlee.



Right: Cave Crayfish found in Jester Cave in only water left in the cave during Jester Bat Count. (Photo by Dave McDermott)

Lower Left: Pair of Long Ears found in Homestead Entrance in the Jester Cave Complex during Bat Count 2013 (photo by Duane Del Vecchio)

Lower Right: Cave Myotis bat mat in Glade Entrance during Bat Count 2013 (Photo by Carole Town)

ANNOUNCEMENTS

*Northwest trips are scheduled the third Saturday of every month. Contract Sue or John Bozeman for details.

*The March meeting of the Central Oklahoma Grotto will be held Friday, March 8, 2013 at 7:30 p.m, at the home of Dale Amlee.

National White-Nose Syndrome Decontamination Protocol - Version 06.25.2012
The fungus *Geomyces destructans* (*G.d.*) is the cause of white-nose syndrome (WNS), a disease that has devastated populations of hibernating bats in eastern North America. Since its discovery in New York in 2007, WNS has spread rapidly through northeastern, mid-Atlantic, and Midwest states and eastern Canada. It continues to threaten bat populations across the continent. For the protection of bats and their habitats, comply with all current cave and mine closures, advisories, and regulations on the federal, state, tribal, and private lands you plan to visit. In the absence of cave and mine closure policy, or when planned activities involve close/direct contact with bats, their environments, and/or associated materials, the following decontamination procedures should be implemented to **reduce the risk of transmission** of the fungus to other bats and/or habitats. For the purposes of clarification, the use of the word "decontamination," or any similar root, in this document entails both the 1) cleaning and 2) treatment to disinfect exposed materials.
Under no circumstances should clothing, footwear, or equipment that was used in a confirmed or suspect WNS-affected state or region be used in a WNS-unaffected state or region. Some state/ federal regulatory or land management agencies have supplemental documents1 that provide additional requirements or exemptions on lands under their jurisdiction.
I. TREATMENTS TO REDUCE RISK OF TRANSFERRING *GEOMYCES DESTRUCTANS*2: Applications/Products:
The most universally available option for treatment of submersible gear is:
Submersion in Hot Water: Effective at sustained temperatures ≥50ºC (122ºF) for 20 minutes
Secondary or non-submersible treatment options (for a minimum of 10 min.) include:
PRODUCTS: **Clorox® (6% HOCl) Bleach**
Lysol® IC Quaternary Disinfectant Cleaner
Professional Lysol® Antibacterial All-purpose Clean

MINUTES

CENTRAL OKLAHOMA GROTTO
Minutes of the February 8, 2013

Host: the home of COG members John and J.T. Van Dyke

Attendees: Dale Amlee, Sue Bozeman, Duane Del Vecchio, John Talbot, Dale and Carol Town, Jon and Kelley Woltz, S. Beleu

Grand Potentate Woltz opened the meeting at 8:08

OLD BUSINESS

We discussed the upcoming bat count of February 16.
Dale Amlee noted that he had e-mailed the various Boy Scout organizations that have contracted COG about a summer cave trip but had received no replies.

Duane told us about creation of a "Bats of Oklahoma guide" (not exact title) for biologists and others to use when in the field that is being created by the Oklahoma Department of Wildlife Conservation's "Oklahoma Bat Coordinating Team". They will also create a "Bats of Oklahoma" poster. These will probably be for sale from ODWC.

NEW BUSINESS

Duane showed us two new gadgets that he will use for caving, a $95 LED flashlight and a digital-readout humidity gauge.

TREASURER'S REPORT

John Talbot gave his treasurer's report.

END: we ended the meeting at 8:55. We thank John for hosting us and cooking us much good food.

TREASURER'S REPORT

INCOME			EXPENSES		
Dividends	$	0.01			
Dues	$	45.00			
TOTAL	**$**	**45.01**	**TOTAL**	**$**	**0.00**
CASH ON HAND	**$**	**148.10**			
CHECKING	**$**	**342.95**	**TOTAL FUNDS AS OF 2/6/2013**		
SAVINGS	**$**	**2,134.43**			
TOTAL	**$**	**2,625.48**	*PREPARED BY TREASURER JOHN TALBOT*		

TRIP REPORT

Trip Report: Jester Bat Count 2013
Date: Saturday – February 16, 2013
Cavers: Duane Del Vecchio, David McDermott, Dale & Carol Town, John & J.T. VanDyke
Report by: Duane Del

Again we meet on what is (or used to be) the coldest weekend of the average by looking at NWS climate recordings (past 40 years). It's not too cold this time… a bit of a south wind for early in the morning but the afternoon is supposed to be in the upper 60's so we'll warm up a bit!

Dave and I pulled into our parking spot to find Dale and Carol already there. We waited a bit for John and J.T. and they showed a while after… seems fog slowed them down… we would have made fun of them but the same happened to us! <grin>

It was then that dumb butt Duane discovered he didn't have his camera... way to go dummy! We need pictures of the bats to send off to the bat experts so we'll have to do with cell phones. But then Carol saves the day and finds one in their car!! Whoo hoo!! We started toward the hike to the gate and found this really nice 'Roadmark' right at he intersection… seems the locals have decided to mark on the road the cave location… sigh…

Well… all parties suited up and did our hike to the cave. There must have been a nice winter storm around here lately as there was snow on the sides of the road and trail as we were walking to the cave… the ground was really squishy and muddy…gosh… hope we don't track mud into the cave! <grin>

It hasn't rained or had any system around for about a week so this was a bit of a surprise!!

We got to the resurgence entrance and got all of our gear together and ready to start. Duane has a new instrument that he was ready to try out… a thermometer/humidity reader. As we know WNS (White Nose Syndrome) need cold AND humid conditions to thrive, these readings may help with us in the pre-WNS stage (let's hope it doesn't get to that!) L Bats were within the twilight area of the entrance… packed tightly in the cracks and a few small mats… nothing to take a packing rate…little mats. From examination, they looked like they were in good shape… but we'll submit our photos and temp/humidity reports to the experts and let them look for any signs of WNS. (keep your fingers crossed!) By the time we got to the usual pond where you either tough it and wade in to your waist (or above) or try to not kill yourself going on the little ledge, the bats were beginning to stir… and then we also noticed… even though it was muddy outside… there was NO water in the little pool that we always try to avoid… the drought is here… 2nd year in a row with no water here!! This is also a nice dome area so climbing to the top found it 10 degrees warmer and almost 90% humidity… but only a few pips here… and a lot of raccoon poop in an almost looking like nest area.

We went down what we call Pip Hall (as it always had a lot of pips in it by being warmer than the regular cave but only found 4 bats in it…3 pips, and 1 myotis… sigh… not a good indicator… everyone went out the short-cut but Duane and Dave as Duane lost his new 750 lumen flashlight somewhere near the entrance… Found it right in

the area where we have to climb over the boulders to enter the cave proper just laying in a snowbank… that's why he didn't hear the clank!

But what was funny was when we got to the surface and went to the road, there was no sign of the rest of the party… we waited a bit and then figured they really got a good start on us… but no… when we got the gate and back to the road, we see them coming down the road… they didn't turn coming out so went cross country until they hit the road.

The others went to wait by the gate to hike to Glade Entrance but Dave, Duane, and J.T. went to do the count in Train Tunnel… only a few bats but almost all were long ears so it made it worth the trip.

We then all hiked over to Glade entrance. The drought last summer was tough as there was an entire giant dead broken Oak tree covering the entrance. Dave, Duane, and J.T. went down to check on big ears in Homestead entrance while Carol, Dale, and John started the count inside Glade.

We found 5 big ear in Homestead and one in the tunnel connecting to Glade…. and then to the group trying to figure out the packing rate of a large mat. They were really packed tight this year... tighter than we've seen in many years! Finally we rolled a big bolder over and John climbed up on it and we held him while he precariously balanced while physically measuring the mat with a tape measurefor packing rate and size. We found that there was a 20x20 (or 400 bats per square foot) packing rate! Wow!! They are tight in there!! Unfortunately, these were the only large mats and didn't help our count much in the long run. Once again the groups split with David, Duane, and J.T. cutting out and doing the side passages while the main gang (Carol, Dale, and John) did the main passage. This kept both groups almost even with each other throughout the count. The side group did get ahead near the maternity colony area and went to the waterfall and started counting back to the exit area… but the counts were few and far between. We all exited out Stovepipe Entrance, exit in our case, and walked back to the cars.

The entire count from start at the parking lot to final at the cars after the north end was four hours… we kept looking at the clock saying… remember when we used to come out and it was dark??? What's up??

Well… the count was that small… figures at the end of the report but basically we had a whole lot less bats than we've had in a long time… no sign of disease… the ones we saw were healthy…but its been another very warm winter with few cold spells in-between… hopefully counts will be higher in the neighboring northern states where they went up to 'Cold Country' rather then here in the new developing return of the dust bowl!

As it was only about 2:30 p.m. and Lugi's doesn't open until 5 p.m…. we all took off in our own directions… John and J.T. to go back home, Carol and Dale to work on the new gate at their new ranch, and Dave and Duane went Geocaching! It was a good time for all to meet and greet each other, tell stories, and still get some good science feel good time together!! Thanks gang… good count… or fun count… or whatever…. <grin>

Jester Bat Counts Total
Totals

Bat	Single	Group	Total
Myotis	**196**	**11,014**	**11,210**
Pips	**24**	**0**	**24**
Big Ear	**5**	**4**	**9**

BAT COUNT SUMMARY 2013

Here is the summary data from our bat counting for 2013:

Jester:
- 11,210 Myotis velifer
- 24 Pipistrelle subflavens
- 9 Corynorhinus (big-ears) palescens

Nescatunga:
- 10,321 Myotis Velifers
- 3 Pipistelles

Greene's Cathedral:
- 10,033 Myotis Velifers
- 9 Pipistrelles

Submitted by Sue Bozeman

POTPOURRI

EDITOR: TO SHOW OUR MEMBERS ARE VIGILANT BAT COUNTERS:

Reported by Theresa Martinez, on March 1, 2013:

I have a bat count of 1 bat in my middle bedroom. But since that is not in Oklahoma guess it doesn't count.

White Nose Syndrome Fungus Persists in Caves Even when Bats are Gone

From USGS.Gov – January 10, 2013
http://www.usgs.gov/blogs/features/usgs_top_story/wns-fungus-persists-in-caves-even-when-bats-are-gone/?from=title

White Nose Syndrome Fungus Persists in Caves Even when Bats are Gone Categories: Featured
Posted on January 10, 2013 at 11:35 am
Last update 4:24 pm ***By: Jeff Lorch, jlorch@usgs.gov, and Gail Moede Rogall, gmrogall@usgs.gov***

Amount of soil (about 200 mg) from which Geomyces destructans was cultured. This shows the small amount of soil needed to harbor live fungus and the threat that humans might pose in moving it around from cave to cave on their gear, boots, and clothing.

The fungus that has killed millions of bats in eastern North America since 2006 can survive in the environment for long periods of time, according to new research conducted by the USGS National Wildlife Health Center and collaborating partners at the University of Wisconsin-Madison, Wisconsin Veterinary Diagnostic Laboratory, and U.S. Forest Service.

What is White Nose Syndrome?

White-nose syndrome (WNS) is a disease that has resulted in large-scale population declines for many species of North American bats. It is caused by *Geomyces destructans*, a fungus that is only capable of growing at cool temperatures; for this reason, the pathogen can only grow on bats when they are hibernating and have a depressed body temperature.

The WNS Causing Fungus Can Survive for Years

Scientists were previously unsure of how the fungus survived during the summer months when a bat's body temperature is above that which is permissible for the growth of *G. destructans*. A new study published in Applied and Environmental Microbiology sheds light on this mystery, demonstrating that the fungus can survive over the summer in the soil of the caves and mines where bats hibernate. Researchers at the USGS National Wildlife Health Center used culture techniques to analyze soil samples collected from 14 caves and mines in which bats with white-nose syndrome had been previously observed. The scientists found that *G. destructans* remained viable in the soil of these sites over the summer when bats were absent. The findings reveal that caves and mines, which remain cool year-round, can serve as reservoirs for the fungus and that bats entering previously infected sites may contract white-nose syndrome from the environment.

In addition, the researchers found that *G. destructans* could persist in caves and mines for periods of time much longer than several months. At one site, the fungus was still surviving in soil two years after bats had been excluded from the mine. Similar species of fungi that are not pathogenic to bats appear to play out their entire life cycles in the soil of caves, and it is plausible that *G. destructans* is capable of doing the same. Once *G. destructans* arrives at a cave or mine, it is possible the site could remain contaminated indefinitely.

What these Findings Mean for Bats and Humans

This research has important implications for managing WNS and vulnerable bat species by revealing the important role that the environment plays in the disease. For example, the findings suggest that susceptible bats may not be able to effectively re-colonize caves and mines that have been previously contaminated and that the reintroduction of certain bat species to such sites may not be a sound strategy for reestablishing lost populations. Although bats likely play a major role in transporting the fungus, the work additionally highlights the potential for *humans* entering contaminated caves and mines to come into contact with *G. destructans* years after bats have disappeared from those sites.

The same study also used molecular techniques to examine the distribution of *G. destructans* in eastern North America and provided new evidence that the fungus is not native to the continent. These findings support a

previous hypothesis that *G. destructans* may have been introduced from Europe where bats do not appear to die from infection by the fungus. Using these molecular techniques, the scientists looked for the fungus in the soil of 55 caves and mines where bats hibernate in the eastern U.S. They found that *G. destructans* was limited to caves and mines within the range of the disease, but the fungus could not be detected in sites that remained disease-free. In addition, the investigation found that the fungus' presence correlated with the arrival of white-nose syndrome at sites sampled before and after the disease was observed. These results indicate that a pre-existing form of the fungus was not present prior to the manifestation of disease and argues against *G. destructans* being native to parts of eastern North America prior to the emergence of white-nose syndrome.

The molecular techniques used in the study represent the first successful attempt to use high-throughput screening, a method to rapidly test large numbers of environmental samples, for *G. destructans* and accurately distinguish it from the large number of similar fungi that occur in caves and mines. Such a technique has great utility in monitoring sites for the fungus and could serve as a means by which the disease agent can be detected prior to the disease itself being observed. This could allow for proactive management strategies that may reduce the number of bats lost and prevent or slow the spread of the fungus across the landscape.

Early Detection of WNS

Amount of soil (about 200 mg) from which Geomyces destructans was cultured. This shows the small amount of soil needed to harbor live fungus and the threat that humans might pose in moving it around from cave to cave on their gear, boots, and clothing.

Caves Point to Thawing of Siberia: Thaw in Siberia's Permafrost May Accelerate Global Warming

http://www.sciencedaily.com/releases/2013/02/130221143910.htm

Feb. 21, 2013 — Evidence from Siberian caves suggests that a global temperature rise of 1.5 degrees Celsius could see permanently frozen ground thaw over a large area of Siberia, threatening release of carbon from soils, and damage to natural and human environments.

A thaw in Siberia's permafrost (ground frozen throughout the year) could release over 1000 giga-tonnes of the greenhouse gases carbon dioxide and methane into the atmosphere, potentially enhancing global warming.

The data comes from an international team led by Oxford University scientists studying stalactites and stalagmites from caves located along the 'permafrost frontier', where ground begins to be permanently frozen in a layer tens to hundreds of metres thick. Because stalactites and stalagmites only grow when liquid rainwater and snow melt drips into the caves, these formations record 500,000 years of changing permafrost conditions, including warmer periods similar to the climate of today.

Records from a particularly warm period (Marine Isotopic Stage 11) that occurred around 400,000 years ago suggest that global warming of 1.5°C compared to the present is enough to cause substantial thawing of permafrost far north from its present-day southern limit.

A report of the research is published in this week's Science Express. The team included scientists from Britain, Russia, Mongolia and Switzerland.

'The stalactites and stalagmites from these caves are a way of looking back in time to see how warm periods similar to our modern climate affect how far permafrost extends across Siberia,' said Dr Anton Vaks of Oxford University's Department of Earth Sciences, who led the work. 'As permafrost covers 24% of the land surface of the Northern hemisphere significant thawing could affect vast areas and release giga-tonnes of carbon.

'This has huge implications for ecosystems in the region, and for aspects of the human environment. For instance, natural gas facilities in the region, as well as power lines, roads, railways and buildings are all built on permafrost and are vulnerable to thawing. Such a thaw could damage this infrastructure with obvious economic implications.'

The team used radiometric dating techniques to date the growth of cave formations (stalactites and stalagmites). Data from the Ledyanaya Lenskaya Cave -- near the town of Lensk latitude 60°N -- in the coldest region showed that the only period when stalactite growth took place occurred about 400,000 years ago, during a period with a global temperature 1.5°C higher than today. Periods when the world was 0.5-1°C warmer than today did not see any stalactite growth in this northernmost cave, suggesting that around 1.5°C is the 'tipping point' at which the coldest permafrost regions begin to thaw.

Dr Vaks said: 'Although it wasn't the main focus of our research our work also suggests that in a world 1.5°C warmer than today, warm enough to melt the coldest permafrost, adjoining regions would see significant changes with Mongolia's Gobi Desert becoming much wetter than it is today and, potentially, this extremely arid area coming to resemble the present-day Asian steppes.'

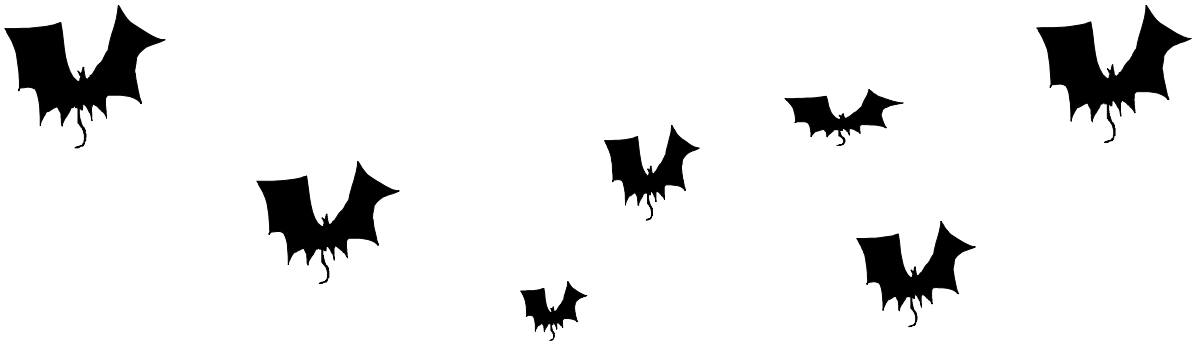
Icy grotto in Baikal, Olkhon Island, Siberia

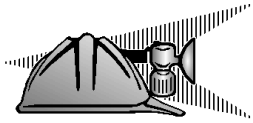
3 Preludes to Caving: The Mystery, The Unknowable. #3

(c) 2012 Steve Beleu

Central Oklahoma Grotto is a non-profit organization and a chapter of the NSS (National Speleological Society), Cave Avenue, Huntsville, AL., 35810. Dedicated to cave conservation and safety, C.O.G. published general information in a monthly newsletter ($6.00/year) and detailed cave surveys and related Speleological items in a yearly publication, *The Oklahoma Underground* ($3-$8/issue) Membership is by sponsor and is $12 per year for adults, $6 for spouses and students, and $3 if under 18. Central Oklahoma Grotto meets once a month on the second Friday of each month. For information, write Lil Town, 25692 Mosier Circle, Conifer, CO 80433: All submissions to the newsletter should be sent to the editor: Lil Town, 25692 Mosier Circle, Conifer, CO 80433: Telephone: (580)471-1238: E-mail: cavemoose@gmail.com. The deadline for submissions for any particular month's issue is the 20th day of the previous month. If you wish material returned. Please include a SASE with submission. All materials in this newsletter is available for reproduction, provided proper credit is given with the article when you print it. Trade publications are welcomed. *Cave softly and safely!* Website: http://www.okcavers.com

The March meeting will be
At Dale Amlee's house
Friday, March 8, 2013.





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