



July,
2012

Volume 51,
Issue 2



Cascade Caver



Cascade Grotto of the National Speleological Society

Vol. 51, Issue 2, Copyright 2012 by the Cascade Grotto. All rights reserved.

The *Cascade Caver* is published periodically throughout the year by the Cascade Grotto, a local chapter of the National Speleological Society. Any material in this newsletter that is not copyrighted by an individual or another group may be copied or reprinted by internal organizations of the National Speleological Society provided that credit is given to the author and to the *Cascade Caver* and that a copy of the newsletter containing the material is sent to the Editor. Other organizations must contact the Editor.

Opinions expressed in the *Cascade Caver* are not necessarily those of the Cascade Grotto, the editors, or the NSS. Unsigned articles may be attributed to one of the editors. Great pains is taken to assure proper attribution of copyright and to use works in the public domain when the copyright is not clear in the case of illustrations. If you feel that this publication has infringed upon your copyright, please let the editor know immediately.

All material to be published, corrections, subscription requests, renewals, address changes, and exchange publications should be sent to Cascade Grotto, P.O. Box 66623, Seattle, WA 98166.

About the Cover...

"Can you name this caver?"
Alfredo Moreno captures images of some tight squeezes in Lake Cave near Mt. St. Helens. See article on page 16.

Inside This Issue...

Articles, Research, Trip Reports

- 1 Newton Cave Trip Report--Sept. 21, 2011
--*Danny Miller*
- 7 Oregon Caves Cleanup Project Draws Volunteers From Three Northwest Grottos
--*Elizabeth Hale*
- 10 Accidentally Lava Tube Caving in Iceland
--*Jacob Earl*
- 12 Intelligently utilizing lithium-based rechargeable batteries underground
--*James Mooreshire*
- 16 Grotto's Youngest Caver Visits Lake Cave
--*Kathryn DiFoxfire Wilson*
- 24 A Perspective on the Western Region NSS Speleo-Ed 2012
--*Jerry Thompson*

News and General Information

- 26 Former Grotto Member, Roger Cole, 62, Dies
--*Jerry Thompson*
- 27 Upcoming Meetings, Cave Trips and Events
- 29 NCA Regional--Schedule and Registration
- 31 Monthly Meetings & Minutes, Feb to June, 2012

From the *Cascade Caver* Co-Editors...

A lot has happened in the past few months since our last issue (Feb. 2012). With *Cascade Caver* Co-Editor James Mooreshire also taking on the role of Trip Coordinator/Quartermaster, Cascade Grotto has been able to offer several beginner-level cave trips. While James (and I, to a lesser degree) has been out caving, my two-year-old son is just starting to grow out of his daily nap, which severely cuts into the time I have to edit the *Cascade Caver*. We're also still working out the kinks with our Scribus publishing program (astute readers will notice that this issue is published in printer-friendly 8.5" x 11" instead of the European-style A4 size of the last issue). So a little later than planned but better late than never, welcome to issue two of this year's *Cascade Caver*.

Since our last issue (Feb., 2012), Cascade Grotto members have been caving both locally, regionally and even overseas; they have participated in several local and regional events, including Oregon Caves cleanup, NSS Western Region's Speleo-ed, NCRC training, vertical practice, bat programs, and we've had several monthly meetings. We couldn't fit all of it in this issue, so if you submitted an article and/or photos and don't see them in this issue, rest assured that they will be published in the next (which should be out in less time than it took to put this one together now that we have material in hand to work with). That being said, we could always use more articles, and we especially love pictures! So if you plan to be doing something cave-related, bring your camera, jot down a few notes, and send the results to us. --Kat DiFoxfire Wilson

GROTTO MEMBERSHIP / SUBSCRIPTIONS:

Membership in the Cascade Grotto is \$20 per year (includes electronics copies of publications) or \$28 (includes printed copies of publication). Membership for each additional family member is \$5.00 per year. Non-member subscription to the *Cascade Caver* is \$15.00 per year. All fees due Oct. 1 of each year (pro-rated for new members to next October).

GROTTO ADDRESS:

Cascade Grotto, P.O. Box 66623, Seattle, WA 98166.

This post office box should be used for both the grotto and for the *Cascade Caver*.

Please keep in mind it is usually checked about once monthly.

GROTTO OFFICERS:

President:	Vacant	No Phone	Email: Chair@casdegrotto.org
Vice Chairman	Robert Mitchell	(206) 715-5315	Email: Vicechair@casdegrotto.org
Secretary/ Treasurer:	Kat Wilson	(206) 484-3894	Email: Secretarytreasurer@casdegrotto.org

OTHER POSITIONS:

Trip Coordinator / Quartermaster:	James Mooreshire	(814) 769-6502
Librarian:	Michael McCormack	(425) 941-4619
Program Chair:	Jake Earl	No phone
Conservation Chair:	Hester Mallonée	(253) 838-6464
<i>Cascade Caver</i> Co-Editors:	Kat Wilson	(206) 484-3894
	and James Mooreshire	(814) 769-6502

Newton Cave Trip Report--Sept. 21, 2011

By Danny Miller

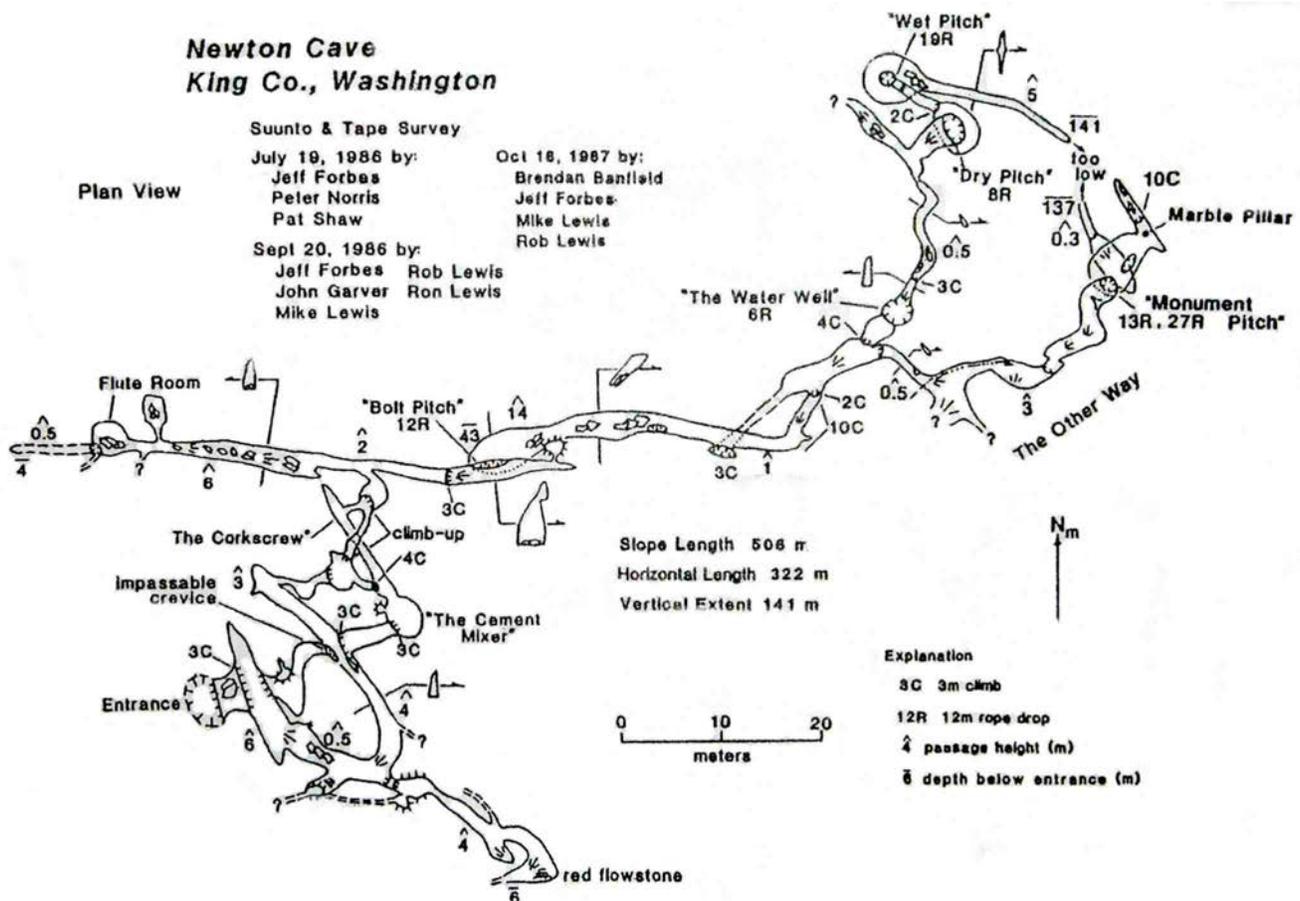
I have wanted to visit the bottom of **Newton Cave** since probably around the late 1990's. Considering how obsessed I am with Cave Ridge, and how I do about a half dozen trips up there each year, and that I've been almost every other place you can go on the ridge and inside those caves, the bottom of Newton has been very conspicuously not checked off my "to do" list for a very long time. So Neil Marchington and Lonnie Seiders and I made an attempt to do just that.

Our First Attempt: Fighting Snowmelt

Neil's first time on the ridge was last summer to join some grotto caving trips, and the two of us

did a whirlwind tour of almost all of the caves in a single day. Lonnie first came up for this summer's trips. Both of them are from the Bend, Oregon area where they are affiliated with the Oregon High Desert Grotto (among many others). They expressed an interest going all the way down Newton. The three of us made our first attempt on Fri., Aug. 12, 2011.

Now it had been a very prolific winter for snowfall. Actually, I should say it had been a very prolific spring. Winter saw very little snowfall with less than 60% of normal on the ground in mid-February. But it more than made up for it with a whole lot of spring dumps, and the snowpack was almost 150% of normal on



Map previously printed in 1993 NSS Convention Guidebook

May 1. And the cool "summer" which Seattle experienced caused less melting than usual.

The result of all of this was that by mid-August, Newton Cave almost had to be dug out in order to explore it. Luckily, a channel had melted through to the cave entrance, but nonetheless, there was still almost six feet of snow covering the entrance pit. **Clark** and **Flute** caves were still completely underwater at the time.

This led to a lot of water rushing into the cave during the day. It felt more like river wading than caving at times.

We only made it to the bottom of the 2nd drop that day because some of the tighter passages were filling up with water as the day warmed up, and we were actually concerned that we wouldn't be able to get back through some of the tighter spots without scuba gear unless we were back through before noon (or waited it out until evening).

Did I mention that it was snowmelt? I didn't have a waterproof suit, and it was quite cold! And we were not yet at the section of the cave marked the "wet" section. That was a little intimidating.

Lonnie and Neil went back after dark that night to try again after the snow stopped melting for the day, and they got to the bottom of the 4th drop, but after the "Colon Crawl" they were back in rushing water through tight passages. Some sections need a long dry period of days to stop the water flowing. Therefore we decided to come back on a different day.

The Challenges of Newton Cave

But first, a few words about Newton for those of you unfamiliar with it... it is the deepest cave on Cave Ridge; indeed, it is the deepest cave in Washington State. The bottom is about 600 feet underground, but the horizontal distance you travel is only 1,050 feet! That's an average pitch of 30 degrees for an entire day of caving.

There are five rope drops with rappels of about 60', 15', 60', 60' and 90', and one passage where your distance travelled measures in inches per minute. . .

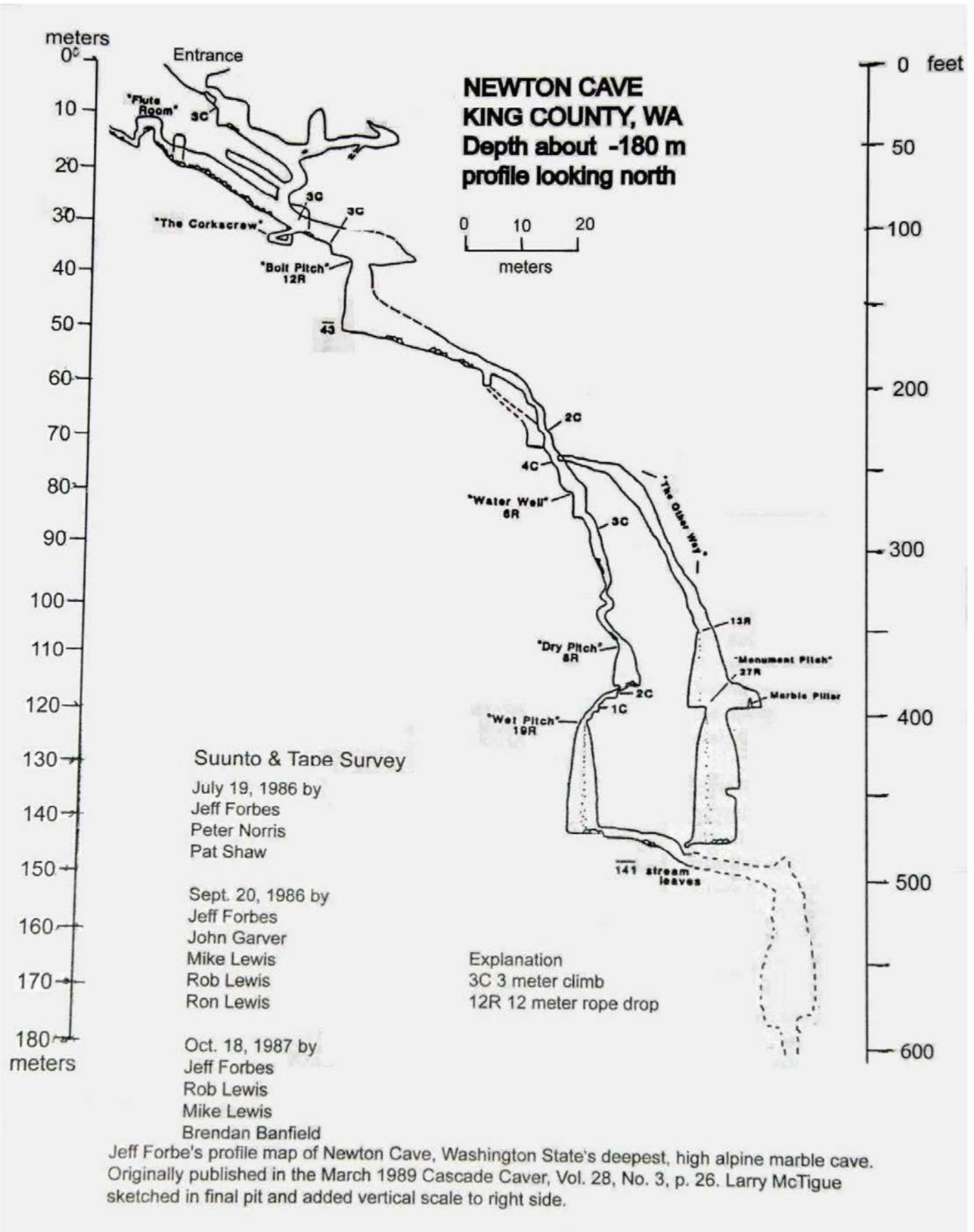
it has been known to take two days to get to the bottom.

There are five rope drops with rappels of about 60', 15', 60', 60' and 90', and one passage where your distance travelled measures in inches per minute. In other words, to get back out after a tiring day of caving, you have to ascend 300' of rope and rock

climb 300 more feet.

This feels about 10 times harder than hiking the equivalent elevation. And the 4th and 5th drops, along with a significant portion of the climbing between the 1st and 2nd drops, is usually through water. (After our second attempt the following month, I was about as tired as I was climbing Mt. Adams with skis on my back and doing more than 6000' vertical feet in a day. But then again Neil, Lonnie and I went both up and down the ridge on the same day we did the Newton trip because of time constraints, so that probably didn't help).

It has been known to take two days to get to the bottom. To bring in that much rope with you is slow going, so you crawl through rigging as you go as far as you can, come out when you're tired, and finish up the next day.



Jeff Forbe's profile map of Newton Cave, Washington State's deepest, high alpine marble cave. Originally published in the March 1989 *Cascade Caver*, Vol. 28, No. 3, p. 26. Larry McTigue sketched in final pit and added vertical scale to right side.

It's also been done in one day, but it makes for a long trip. For instance, last year, Tom Evans, Aaron Stavens and Michael McCormack brought in rescue caches all the way to the bottom of the 4th drop, something even more arduous than bringing in ropes, and they did it in a single 14-hour trip.

But now that the 2nd through 5th pitches are rigged, you only need to bring one rope for the first drop, and this makes a Newton trip much more practical. Be sure and check the safety of the existing ropes, they are quite old (labeled 1992). More on this later.

Our Second Attempt

We realized that Newton would have a very short season in 2011: we calculated that Sept. 21 would be in a very tiny window after the snow finished melting and before the rains started filling the caves with fresh water again.

For this trip, I also got a waterproof PVC suit and a Swaygo backpack that has no straps to hang up on anything. It makes a huge difference... my time and energy pushing a Swaygo through the passages were both cut in half compared to a regular pack that gets straps caught up on every little sharp corner.

So now to the actual trip report. We left the parking lot at 8:10a .m., climbed up the ridge in about 90 minutes, set up our gear and entered the cave at 10:10 a.m.. We were delighted to find the cave not exactly dry, but much more so than the previous month. Things went pretty smoothly and quickly until the 4th drop. During the last trip, Lonnie and Neil had noticed that the rope was badly frayed at one point, so they tied

a knot in it around the damaged area.

Now I've practiced rappelling past a knot a number of times while fresh and perky, but it was quite another thing for me after a climb up Cave Ridge, three rope drops, and almost 300' of down climbing.

*Now I've practiced rappelling
past a knot a number of times
while fresh and perky,
but it was quite another thing for
me after a climb up Cave Ridge,
three rope drops,
and almost 300' of down climbing.*

I am a skier, which is a polite way of saying that I have no upper body strength, so it doesn't take much for me to lose all power in my arms. It must have taken me half an hour to have the strength to stand up in my foot loop and move my Croll past the knot, with lots of rest breaks. How embarrassing. Kudos to Lonnie and Neil for having the patience to wait for me (it didn't give them any trouble at all; I guess they don't ski). I wondered if, tired as I was, the safest idea would be to turn around, but they talked me into continuing, and I am glad they did.

Now we were at the bottom of the 4th drop, and although it sounds like it's 80% of the way to the bottom, it is really only about halfway because next comes the "Colon Crawl."

The "Colon Crawl"

Now I've heard stories of the infamous "Colon Crawl" for years, and I've always wondered why it's so notorious. Sure, it's supposed to be really tight and awkward, but there are countless tight awkward spots on Cave Ridge that one can barely fit into. We've all crawled through many a spot for which you may need to take your helmet off, move along only inches at a time and feel pressure on your back and stomach at the same time. So why is this one any crazier than any

other tight spot? It's not even the smallest space I've fit into. Well, I'll tell you why.

This part of the cave is a big vertical crack in the wall, about 15 feet high or so but too thin to walk through, except for one bulge in the centre of it where it widens a little bit.

It looks exactly like those pictures you've seen of a snake that's eaten a rabbit or something and ends up with a big bulge in its belly. Now just imagine that snake standing straight up on its tail.

So you have to go up to the bulge, lie completely horizontal and crawl on your stomach... but unlike most any other small crawl, you are 5-10 feet above the bottom of the crack watching water flow down there and wondering all the time if you are going to fall through and get wedged helplessly, but (thankfully?) it's always very tight and not really an issue.

The crack then squeezes smaller and smaller until you have to back out and start again unless you had the foresight to keep one arm above your head and one arm at your side to minimize your profile. Heaven help you if you drop your pack down there. I don't think you'd ever be able to get it back. I've never been so happy to have a large pack. I half expected to find the creek down there littered with lost and fallen packs of unlucky cavers, but we didn't see anything.

This is why, for the longest time, we thought the cave ended after the fourth drop. You can't get anywhere trying to follow the creek... you have to stay on a contour above the creek to find a way through because the shape of the crack is not readily apparent at the beginning of the passage.

The Fifth and Final Drop

After that, you drop down to the creek and follow it through a lightning-shaped passage back and forth a short ways and get to the final drop! This is where too much water flow turned Neil and Lonnie back last time.

The 5th rope drop, like the 3rd and 4th, is a re-belay because there is no good fall line from the edge of the cliff where you meet it. The re-belay takes you to a ledge you can stand on to switch ropes, so it is not much of an issue.

However, when Neil inspected the rope and rigging, he discovered that a bolt from the re-belay tie off had loosened and was no longer safe, so he removed it and turned it into a simple single 90' rope drop. No more re-belay. That was the good news.

..if somebody discovers or digs out more passage so that it ever goes deeper, I will have to kill them before they alert the media.

The bad news? The reason for the re-belay was that the drop is right through a waterfall. I was pretty much ok with rappelling through the freezing water (wet suits rule!) until I imagined climbing back up: 90 feet of ascending in the rain. Now that is a pretty long climb by Cave Ridge standards to begin with, but it's especially long when you're under a waterfall.

I remember thinking two things when I finally got down to the bottom and tagged the lowest passage where it chokes out rather quickly: 1) now I never have to do this again, and 2) if somebody discovers or digs out more passage so that it ever goes deeper, I will have to kill them before they can alert the media.

Returning to the Surface

Ascending was pretty straight forward, except for the 4th drop where we had to pass the knot, and go over quite a prominent annoying lip. None of the other lips are any trouble at all. It took four

hours to get down and hang out, including some time where Lonnie and Neil looked for new passage while I napped, and four hours to get back up and out. Add to that time for packing up my bags and 53 minutes for me to descend the ridge and actually make it to rehearsal on time. Total time car to car: 11 hours 45 minutes, including an hour or so total of Neil and Lonnie patiently standing around or waiting for me while I tried to muster the arm strength to pass the knots.

I was pretty sore. I couldn't really walk that night, and it was Sunday before I stopped visibly limping.

Recommendations for Newton Cave:

This cave is challenging enough without making it worse with things that can be improved, so I recommend the following:

1. Stick to the dry season after all the snow on

top has melted, and no rain has fallen recently.

2. Wear a completely waterproof PVC suit, wet suit or other equivalent, even in the dry season.

3. The 4th drop rope should be replaced, not just to eliminate the knot, but on general principle of safety.

4. Be cautioned that the re-belay on drop #5 is gone, and you are in the waterfall. Somebody might want to tighten the bolt and put it back in. I'm not really sure how good a place there is for putting in the re-belay, but Neil remembers there being a small ledge that could be used for assistance.

5. Three is the ideal party size for Newton. Three has always been considered a good safe minimum, and for this cave, three is a good maximum, or there will be a lot of waiting around extending the trip time.

Register now for the 2012 NCA Regional!

**Northwest Caving Association Regional
Labor Day Weekend (Aug. 31- Sept. 3)**

-----Hosted by the Oregon Grotto-----

Camp at the base of Mount St. Helens
within walking distance from more than a dozen caves
and a short drive from more than 200 caves!

Details and registration form can be found on p. 29-30 & at
<http://www.oregongrotto.com/regional2012.shtml>

Oregon Caves Cleanup Project Draws Participants From Three Northwest Grottos



Above: **Dean and Parker clean the Paradise Lost pools In Oregon Caves National Monument (OCNM).** Bottom right: **Swade mixes cement for rimstone repair work: “In case you can’t tell, I’m smiling.”** Photos courtesy of OCNM.

By Elizabeth Hale

Editors' Note: A version of the following article was originally published as a PDF document circulated by Oregon Caves National Monument (OCNM).

Thirteen cavers representing three grottos in Washington and Oregon traveled to Oregon Caves National Monument (OCNM) near Cave Junction, Oregon for President’s Day Weekend to spend the coldest weekend of Winter volunteering on cave restoration projects. Oregon Caves benefitted from the collective experience and enthusiasm of the crew.

The weekend resulted in significant lint reduction at Paradise Lost, restoration of the pool next to Niagara Falls, progress on rimstone reconstruction, and a start on removal of the “red abomination” in the Souvenir Room.

On Sunday the cavers were treated to an off-trail caving trip to the south end of the cave led by resource managers John Roth and

Participants:

Cascade Grotto

John Darby

Gretchen Huning

Dean Lambert

Parker Lambert

Hester Mallonée

Robert Mitchell

James Mooreshire

High Desert Grotto

Kevin Branscum

Wade Garrett

Neil Marchington

Genevieve Mattar

Willamette Valley Grotto

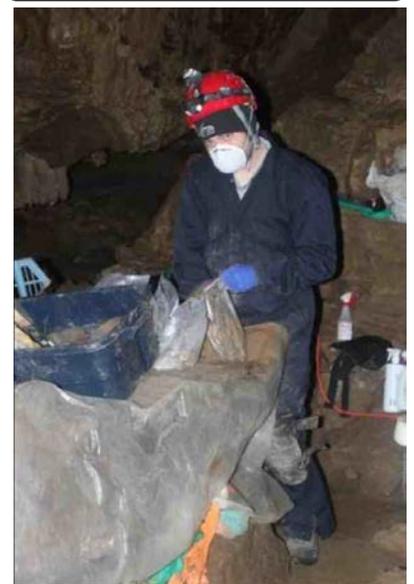
Chris Molyneux

Steve Wade “Swade”

NPS

Elizabeth Hale

John Roth



Elizabeth Hale. The group enjoyed a rare opportunity to view ancient bear claw marks that are “preserved” in clay sediment.

Thanks to all the volunteers who made a difference this weekend!



On rope below "Paradise Lost," Kevin Branscom safely reaches the “hard-to-reach” lint. Photo courtesy of OCNM.

How the weekend was organized

Earlier in the week Elizabeth staged 5-gallon buckets below drip points in the Ghost Room, Paradise List, and near the Grand Column to collect cave water for cleaning.

After the Saturday morning briefing, Elizabeth oriented volunteers to the four work sites in the cave:

- 1) Pool next to Niagara Falls – pool bottom completely coated with sediment tracked in from visitors’ shoes,
- 2) Rimstone room – long-term project to

reconstruct damaged rimstone from salvaged pieces of the formation,

3) Paradise Lost – a dome pit with significant lint buildup, and

4) Souvenir Room – remnant of cement work from an earlier era leaching a red color (and possibly chemical) into the surrounding water and sediment.

The Ghost Room served as HQ. Buckets of restoration supplies and a bin of safety equipment were located on the platform. Neil Marchington led the Paradise Lost cleanup efforts. Hester Mallonée presided over the rimstone room. Robert Mitchell organized group meals.

Significant improvement in the condition of the Niagara Falls pool and at Paradise Lost.

Working as a team, Steve Wade (“Swade”) and Chris Molyneux successfully cleaned the human-tracked debris out of the pool next to Niagara Falls. By Saturday afternoon they had exposed the rock of the pool bottom.

Working just as efficiently, Neil rigged Paradise Lost ready for three cavers to go on rope after lunch on Saturday. The cavers were able to reach epic-size deposits of lint in hard-to-reach places and discover a rat nest composed of the lint filter used in the tray-and-tarp set up on the stairs, which was cleaned up. At the top of Paradise Lost, the formations were sprayed and lint-picked with tweezers.

On Sunday morning Dean Lambert and his son, Parker, used brushes in the Paradise Lost pools to remove lint, hair, and eventually, surprises such as broken glass from the impressive buildup of “muck” in those pools. By spraying water from hand-pump bottles and the backpack sprayer, large amounts of lint were able to be washed down to the pit, accessible from the Ghost Room floor. Volunteers spent several hours collecting lint from the pit with tweezers. The lint bags grew heavy, and musings were

rampant about “the stony navel.”

Chipping away the “red abomination”

The red cement used in a bygone era of the cave’s history is well known to all who have participated in any restoration work in Oregon Caves. Remains of it can be seen from the tour path at Miller’s Chapel, but most appallingly in the Souvenir Room, where blood-colored water pools up in the wet season.

A strategy for removal of the red cement in the Souvenir Room was discussed on a planning walk-thru with cavers at the 2010 President’s Day Cave Cleanup Event. This year we moved forward on it.

On Saturday Gretchen Huning and John did the preliminary work of finding the extent of the red cement and worked with steel brushes, hand trowels, and other light-use hand tools. They discovered the cement was attached to a single large piece of loose bedrock.

On Sunday Chris and Robert applied rock hammers and a flat head screwdriver to the task of removing the cement. As they carefully



John and Gretchen excavated the extent of the red abomination on Saturday. Photo courtesy of OCNM.



On Sunday, Robert Mitchell (not pictured) and Chris Molyneux made careful progress chipping away at red abomination with rock hammers. Photo courtesy of OCNM.

removed cement in flakes, they occasionally encountered pockets of red “goo” as if paint. Cement chipped away filled over a bucket.

Follow up work at this site will be needed to complete the removal and restore the site to a natural appearance.

Accidentally Lava Tube Caving in Iceland

By Jacob Earl
March 1-7, 2012

So how does one go caving by accident? It happened when my wife and I took a six-day trip to Iceland at the beginning of March. On our journey we saw some very cool places, and, of course, one of them was a lava tube. Iceland is a very neat and interesting place, with hot spots, barren landscape, gusting winds, and an interesting history.

The lava tube that we visited was by accident. On our way to the blue lagoon (which was very cool), we had stopped by a pull-off and were looking around, and what do you know, there was a hole in the ground with a ladder going down also. We decided to come back after soaking in the blue lagoon.

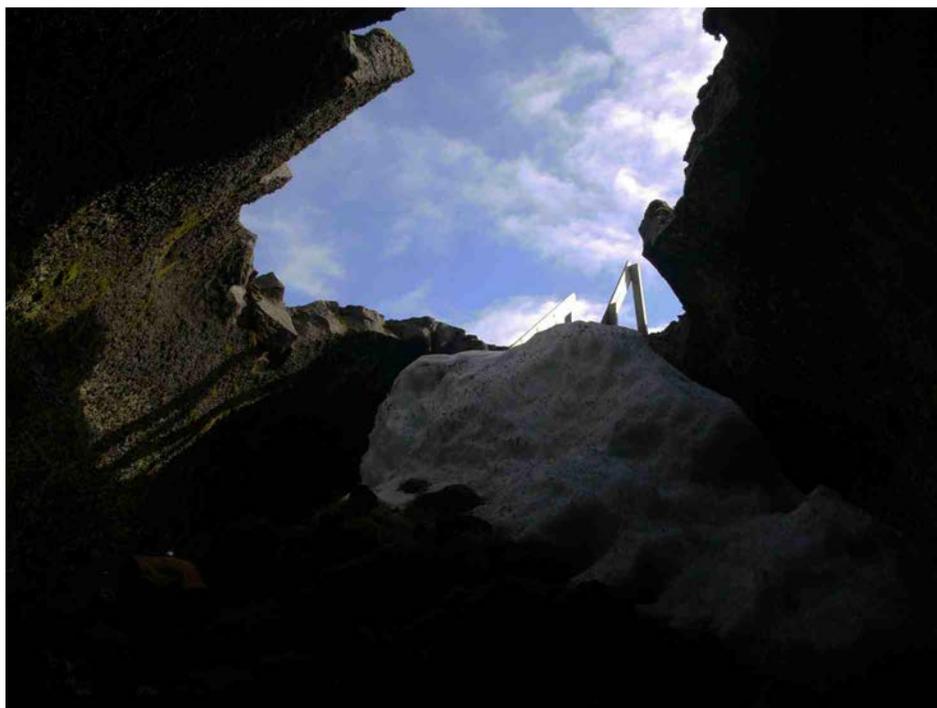


Beach along Kleifarvatn Lake, Iceland. Photo by Jacob Earl.

We stopped back at the pull-off and grabbed the headlamps and camera before descending into the cave. There was a big mound of snow still in the center of the entrance that took up the bottom half of the ladder. We looked around and soon found the entrance into the rest cave.

It was a low stooping crawl and led into a bigger chamber where we could stand and walk to the other side. It soon stooped down again and back into another chamber, but much bigger this time. We looked around and poked our heads into small side holes, but with no luck: they all ended.

At the opposite end of the chamber there was a small climb up and a body-sized tube



Lava tube entrance, looking up. Photo by Jacob Earl.



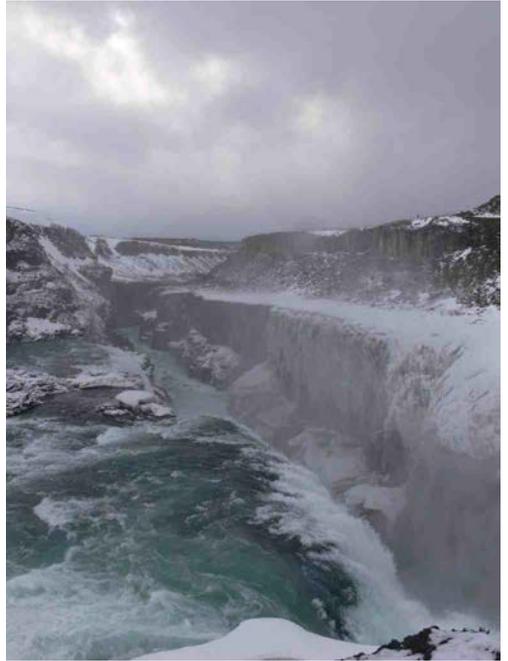
Ladder leading down into cave. Photo by Jacob Earl.

heading out of the big room. I crawled up and looked in; it appeared to be a dead end. I took a few pictures and decided to head back out and onto the next adventure that awaited us.

On our trip we also visited Gullfoss Waterfall, which was amazing, along with a geyser, barren landscape with no trees, great locals, good food, and good beer!



Passage inside cave. Photo by Jacob Earl.



Gullfoss Waterfall. Photo by Jacob Earl.



The Geysir. Photo by Jacob Earl.

Intelligently utilizing lithium-based rechargeable batteries underground

By James Mooreshire

A lithium battery fire can be dangerous enough above ground, and any lithium cell is capable of failing in a way that results in a truly dramatic chemical fire. In an enclosed space a lithium battery fire could be an unquestionably deadly event. Scalding explosions aside, the massive quantity of noxious smoke produced by a burning lithium cell would rapidly render even a relatively spacious cave passage immensely toxic.

While the most effective precaution would obviously be to avoid lithium batteries altogether while caving, it is possible to significantly minimize this risk by properly matching your hardware and battery selections. Some cavers regularly use disposable lithium primary cells purchased at the supermarket while fearing to use a properly constructed lithium-ion battery pack. I hope here to shed some light on the complicated reality of lithium batteries.

Several Types of Lithium Batteries

There are several different chemistries implemented today in lithium cell technology, and their safety properties have improved with industry innovations driven by the portable electronics and electric car markets.

Disposable primary cells, which I will not be going into in this essay, can come with numerous chemistries--some of which have remarkable properties such as being able to function at very low temperatures or being less prone to catastrophic failure when abused.

While disposable primary cells are built to emulate 1.5v alkaline batteries and rarely exceed

1.8v, rechargeable lithium batteries can range from 4.2v to 3.1v, but only a few of the many technologies are readily available to the consumer market.

Without further dividing and confusing the situation by describing all of the available electrode material combinations and electrolyte options, we can generalize that two of the three readily available lithium rechargeable battery types listed below are built with an eye for safety.

1) Hobbyists regularly utilize **Lithium-Polymer (LiPo)** batteries in their remote controlled devices and, while they can offer the greatest capacity for battery size and weight, they are among the most volatile and should be avoided, in this case, in favor of more stable chemistries.

2) Cellular phones and laptop computers utilize **Lithium-Ion (Li-ion)** batteries which have slightly lower capacities and voltages, but are significantly safer and often built utilizing desirable precautionary components.

3) Fancy new Lithium **Iron Phosphate (LiFePO4)** cells are designed with the hopes that they will resist exploding even if your electric car is in a high speed crash, with an additional tradeoff of voltage and capacity, but a surprisingly high current output capability.

Battery Housings and Enclosures

The inherent stability of a battery's chemistry is only the beginning of the precautionary selection process. Inbuilt protection circuitry and a cell's or pack's exterior construction make a significant difference in the safety and ruggedness of a battery.

Individual cells such as the familiar button-topped cells house the components in an only moderately crush-resistant cylindrical housing.

Hobby battery packs for remote-controlled vehicles or robot building usually utilize several flat foil-contained rectangular “prismatic cells” held together with plastic shrink-wrap, and offer little to no physical protection.

Cylindrical cells can also be connected and then shrink wrapped into higher voltage and/or higher capacity battery packs, and due to their wiring are slightly less protected from physical trauma than their individual cells.

Electrical Protection Features

Small purpose-built Printed Circuit Boards (PCBs) or programmed microcontroller chips capable of performing electrical protection duties are not always but can be easily integrated into any variety of battery. A simple label claiming that a battery cell or pack is “protected” is insufficient information for a proper safety assessment, however, as there are several such precautionary tasks that a PCB can implement; and they must be properly matched to their cells and application.

Most battery fires occur during charging, and the most common precaution for a PCB to provide is a check against overcharging or overvolting. Short circuit protection should also be sought after as it will protect an otherwise healthy cell from damage caused by malfunctioning equipment or improper handling. Low-voltage cutoff protection features are also regularly implemented to prevent the cell from being drained too low and ruined, unable to be recharged.

Not always present, overcurrent protection is also quite important as it keeps the battery from being asked to provide more current than it can do so safely, which can lead to a fire. While this protection feature is perhaps less vital for lower

draw applications, for uses where high or unregulated current will be required careful selection of high quality batteries is necessary.

For flat battery cells/packs with no rigid housing or packs of wrapped cylindrical cells with no inbuilt protection, the PCB is usually contained inside along the top or side of the shrink wrapping which may prove vulnerable to damage. Some battery packs feature balance charging, which allows a compatible charger to individually monitor the health of each cell in the pack but requires a separate balance-plug to be wired and used while charging.

Cylindrical cells have their protection circuitry contained inside the housing, and are either a few manageable millimeters oversized as a result or have a slightly lower capacity than an unprotected cell of the same manufacture. Lithium rechargeable cylindrical cells are rarely built in the same size as alkaline/NiMH batteries as a simple misidentification can result in serious damage to most devices likely intended for only a third of the voltage of a single lithium cell.

The usual naming scheme for cylindrical lithium cells pertains to the measurements of their dimensions, with a AA battery size being a “14500,” and the most common similar lithium battery slightly larger and named “18650.” The 18650 cells, mainly due to the increasing use of that size and the manufacturer competition that has resulted, are rapidly proving to be the best consumer-grade cylindrical rechargeable lithium cells currently available. An 18650 Li-ion cell with no protection circuitry is unlikely to truly hold more than 3100mAh, and the inclusion of protection circuitry might reduce available capacity by between 400-600mAh.

Most of the cylindrical lithium batteries on the market today boast unrealistic capacities while their actual capacity is much lower: online research can usually either confirm a claim or

provide the correct information for the brand in question. Similarly, the overvolting claims are usually lower than true performance reveals but still well within safety parameters for the cell. Third party analysis is the only trustworthy source for critical information on precise protection circuit and capacity performance.

Appliances such as headlamps featuring cylindrical cell holders sized for lithium batteries such as 18650s are becoming increasingly common, and a well-designed device will safely house and provide additional physical protection for the batteries inside it.

What Users Should Be Aware of

Physically protecting spare cylindrical batteries or battery packs while transporting them is very important too, although most of the battery holding cases sold are merely organizational and are constructed of light plastics with simple hinges and latches providing little to no strength against abuse and are not waterproof at all. Waterproof battery enclosures on the devices themselves as well as waterproof cases or bags for carrying spare batteries are essential precautions against failures due to water.

An awareness of the maximum current draw of your equipment in relation to any overcurrent limits or lack thereof is essential as well--don't go underground with a new absurdly bright light without knowing that it won't demand enough current to cause your protected cell to cut out or unprotected cell to overheat.

Battery packs containing multiple cells wired together can also come housed within their own hard enclosures. Some are protected inside a plastic box with a cable jack and power switch on one end such as the common inexpensive 12v closed circuit television battery packs utilized by the newly-released Blind Bat cave photo/video light. Some headlamps or other devices contain or require proprietary battery packs with specific protection attributes and

custom connectors for attaching the battery to its device and the charger such as Petzl's lithium power packs. Enclosed hard battery packs are safer than their wrapped cousins (even wrapped cylindrical cell packs), but are rarely waterproof unless built for an outdoor related purpose such as powering a bicycle light.

A shrink-wrapped pack might be further protected underground by making sure it stays in a plastic bag with only its cable running out or even tightly wrapping the pack in kitchen cling wrap, then placing it inside a slightly padded and/or semi-rigid case or pouch; the use of waterproof connectors and plugs helps prevent a short circuit.

So Which is the Safer Battery?

LiFePO₄ batteries, with their reduced capacity in a given size, are unlikely to be more desirable than Li-ion batteries, although this difference is much less noticeable with large packs such as those that might be powering video or communications equipment. A properly protected Li-ion cell can prove nearly as safe in a damaging accident as a LiFePO₄ cell will, and the added capacity will reduce the need for additional spares. LiFePO₄ batteries are, however, usually capable of safely delivering significantly higher amperage than other lithium cells and perform better in truly high output scenarios such as sustained overly-bright spotlights, video lamps, power tools, or even portable defibrillators. Though harder to initiate than in other varieties, the catastrophic failure of a LiFePO₄ battery can still result in the generous production of toxic smoke.

The first sign of a failing battery will be it getting noticeably hot after which a distorting or swelling of the cell itself will signify that damage has already be done, and the battery should be retired. Next will come the fire itself.

Lithium cells require special disposal or recycling and should never be opened or punctured or

bent or dented or burned. As with any battery, the voltage coming off a cell when completely full after a fresh charge is higher than the listed voltage, and equipment must be rated to work within this peak voltage range. Each Li-FePO4 cell is likely to start producing 3.3v, drop quickly to 3.0v, and shouldn't be discharged below 2.8v. Li-ion cells can put out 4.2v right off the charger, drop quickly to 3.7v, and shouldn't be discharged below 2.7v.

Battery packs configured using series-wired cells in order to increase final voltage are subject to a compounding peak-voltage effect due to addition, while packs configured in series to add capacities will average the peak variation between cells and therefore have a narrower peak range.

Battery Charging Precautions

Chargers are NOT cross-compatible between lithium battery types due to these differences in voltage, and using a charger intended for one type on another is likely to result in severe damage to the battery or even a fire. Single purpose lithium battery chargers should only be used to charge the type and configuration batteries they were designed for. Most featureful programmable hobby chargers are capable of charging all three of the readily available chemistries, but great care must be taken to not charge a battery with the charger in the wrong configuration (though many such chargers can detect a discrepancy and abort automatically).

Many users choose to charge their lithium batteries in fireproof bags or boxes, and most manufacturers warn against leaving lithium batteries charging unattended. Cylindrical cells with proper protection PCBs are of significantly less concern and can usually be safely charged on a simple matched regulated wall-charger with the assurance that between the charger's monitoring circuitry and the battery's PCB any malfunction will be averted.

Videos of Lithium Battery Fires

It is likely that many readers have at least seen a video of a lithium fire. Almost all of the popular and informative YouTube videos showing a failing lithium battery in all of its glory are featuring the volatile LiPo batteries, but the severity of the smoke produced during failure is indicative of the technology. Li-ion batteries are far less prone to failing, as Bear Grills demonstrated on his popular survival show by wrestling for some time with a hunting knife trying to coax a cell phone battery to start a campfire for him. The image of an electric car in a high speed collision is enough to invoke a sense of the additional safety element inherent of Li-FePO4 batteries. An additional dangerous component that isn't demonstrated in any such video is the quantity of heat produced when a lithium battery fails, which is substantial enough to severely injure anyone in contact with the burning cell and do substantial damage to equipment.

Conclusion

In conclusion, the dangers of lithium batteries failing catastrophically in a caving scenario are indeed very real. Proper cell selection, pack construction, and handling can reduce these risks to within a reasonable margin as to fully justify their use, but care must be taken both below and above ground to protect your batteries from water and trauma. Significantly higher capacities and voltages and available current await cavers willing to engage in the necessary research, equipment pairing, and general caution. Rechargeable lithium batteries are the present and future of compact mobile energy storage but far from all of them are cave worthy.

Grotto's Youngest Caver Visits Lake Cave

By Kathryn DiFoxfire Wilson

On the surface, our son is a typical two year-old. Like most boys his age, he loves trucks, trains, boats, planes and anything else with wheels. He actually looks forward to traffic jams caused by road construction so he can identify every piece of construction equipment by name as we drive by--“Mom, bulldozer, backhoe, excavator, crane, roller, dump truck!” Like his daddy, he is also mechanically-inclined, and will get out his toy tools whenever anything needs fixing, or a battery needs changing.



Getting ready to enter Lake Cave. Photo by Kat Wilson

Like many kids, he is also a budding geologist and a nature nut. He loves collecting rocks, throwing rocks, climbing rocks and jumping off of rocks. He loves going for walks, exploring seashores, feeding birds, and sitting by the campfire and sleeping in a tent.

Unlike most two-year-olds, however, he is also a caver, and is arguable the most fearless toddler on the block.

The son of two caving parents, (Kat and Jeff Wilson), Derek T. Wilson, NSS# 62787, has been caving since he was seven weeks old (or earlier if you want to count the cave trips he made while he was still in the womb). A trip to Lake Cave near Mt. St. Helens on March 3, 2012 marked Derek's 7th trip to a wild cave and his first lava tube. It was also his (and my) first trip with Cascade Grotto.

Our first main challenge occurred before we even got to the cave, and it meant overcoming a

new obstacle. Just inside the cave entrance was a 14-rung metal ladder which we would have to climb down to explore the rest of the cave. While the ladder was bolted to the walls and simple enough for an adult to navigate, we

knew Derek would want to climb the ladder on his own, and that meant getting him into a harness so we

could belay him down in case he slipped.

Finding harnesses for two-year-olds is difficult at best, and as we had signed up for the trip only a week in advance, we didn't have time to order him one and get him used to it. Therefore, it meant a quick trip to REI (Recreational Equipment, Inc.) to buy him some webbing to fashion a homemade harness.

As we had recently moved from Missouri, we

Unlike most two-year-olds, however, he is also a caver. . .

also needed to replace all of our helmets & lights and other gear to comply with current U.S Fish and Wildlife Department White Nose Syndrome (WNS) protocols (which states that clothing and equipment which has been used in a state with or adjacent to confirmed cases of WNS, a bat-killing disease, should not be used in a non-affected state).

Luckily, Derek already had his own helmet--he has been zooming around the neighborhood on a two-wheeled Strider-brand running bike since age 18 months. At REI, he picked out a nice Black Diamond Wiz (pink) to complement his blue bicycle helmet while Jeff and I picked out new helmets and lights for ourselves.

At first, things went better than expected. Jeff rigged a harness seat for Derek with the webbing, attached a carabiner, and hoisted him a foot or so off the ground which Derek seemed to enjoy. But when we tried to rig webbing around his chest, Derek balked.



Kat and Derek descend the Ladder in Lake Cave while Jeff belays. Photo by Alfredo Moreno.

When it's time to teach your kids to use the potty, you go to the library, pick up a couple of kids books on potty training and read them to your kids. When you're expecting a second child and are preparing your toddler for a younger brother or sister, you go

When it's time to teach your toddler to go caving, you go to the library and wait...that won't work.

to the library, pick up some books about new siblings and do the same sort of thing. When it's time to teach your toddler how to go caving, you go to the library and wait...that won't work. Unfortunately, I have yet to find the kids' book on how to take your toddler caving.

Not daunted, I remembered when Derek first got his running bike: he initially balked at wearing a helmet until I held him in the mirror and showed him that he now looked just like the big kids. I was hoping the same ploy would work with getting him to wear a harness.

I got out some back issues of the NSS News.

Derek immediately saw the cave photos on the covers and "ooohed" and pointed and said, "Cave." "Do you want to go caving?" I asked.

"Yes," he replied.

"Well, you'll have to wear a harness," I replied.

"No," he said.

I flipped through the issues and showed him a couple of cavers wearing harnesses. He was interested in the cave pictures, but I didn't have enough close-ups of the harnesses, and, of course, there weren't any pictures of kids

in harnesses.



Kat, Derek and Jeff Wilson head into Lake Cave while others descend the ladder.
Photo by Michael James Montgomery.

Looking for more resources, I went to the Internet and Googled “kids rock climbing.” I found some images of kids wearing harnesses, mostly in climbing gyms. I downloaded some of the photos, added some text and created a Powerpoint slideshow/storybook which I read to him over the course of the next few days. He still wasn’t convinced, and refused to put on the chest harness.

I then took him to a local climbing gym which allows kids of any age to climb, hoping that if he saw other kids climbing, he would be interested in wearing a harness. Unfortunately, when we arrived at the gym, they were changing the climbing routes so the loud noise of the drills was less than conducive to his exploring the gym, and there were no kids present.

We were running out of time. It was the day before the trip, and Derek STILL did not want to wear his harness.

Finally, in desperation, I remembered we had a big teddy bear about Derek’s height. I ran upstairs, grabbed the teddy, and we put the harness on Mr. Bear. We then swung Mr. Bear around the room, and let Derek drag him around the house. Mr. Bear then asked if Derek wanted a turn swinging on the harness. When we heard a quiet “yes,” we tried one more time. Derek let us put the full harness on him, and when Jeff hoisted him up and swung him around the room, Derek finally laughed and giggled with delight.

I crossed my fingers, and hoped we were finally ready for the trip, and put Derek to bed.

Since birth, Derek has been on a number of adventures so when we got up just after dawn and started loading the car, Derek was excited. While most people would dread taking a toddler on a three-hour car trip, we weren’t too nervous: there were lots of trucks, buses, planes and even abandoned trains for Derek to watch as we headed south on Interstate 5, and he pointed out

each and every one.

By 10 a.m., we arrived at our meeting place, the newly remodeled rest area in the tiny town of Cougar, WA. One member of our group, Michael Montgomery, was already there. Soon, our trip leader, James Mooreshire, arrived with another caver, Alfredo Moreno. While we waited for the arrival of newcomers Ira Small and Devlin Bentley, we debated what kind of vehicle they would show up in. Since they had described themselves as “so white collar we couldn’t find a decent pair of coveralls,” I figured they would not be driving a pickup. Sure enough, they arrived in a small but apparently fast car, having made the four-hour trip from Seattle in just under three hours, luckily avoiding patrol cars.

In a way, this was a beginner’s trip all around. Our trip leader, James, (also incidentally the son of two caving parents) had just volunteered to be Cascade Grotto’s trip coordinator despite not owning a car. Ira and Devlin had just connected with the grotto and had just gotten into caving. Michael Montgomery had recently begun dabbling in cave photography and decided to use this trip to practice some cave photography, as the slow speed of the group would allow him to lug all his extra gear and not slow down the group. Despite having caved for a number of years, this was also my first lava tube, and Derek’s as well, and for Jeff, only his second time in Lake Cave, the first being many years ago.

Derek was ready and raring to go. Dressed in



“Is there any passage under here, Dad?” Photo by Kat Wilson.

his spandex Batman outfit (one of the few non-cotton outfits I could find for him) with a heavy black winter coat pulled over it and a pair of laced-up leather shoes, he kept saying “Go, Mom, go” while we waited for the rest of the group to gear up. He was relieved when we got back in the car and drove the short distance to the trailhead.

While we hadn’t seen much snow so far on our drive, the amount increased as we climbed higher in elevation. The snow plows had cleared the road only to the Trail of Two Forests trailhead in Gifford-Pinchot National Forest (which luckily for us was where we wanted to park). The plowed road did not go all the way to the parking lot for the more popular and better-known Ape Cave, located about a half-mile further down the road. Consequently, when we got out of the car, we saw several people, all of whom had flashlights, but none of whom had helmets, meandering like lost sheep in the parking lot, probably looking for Ape Cave.

With a foot or two of snow on the ground, we

relied mostly on GPS coordinates to get us to the cave entrance. It was a delicate balance between trodding slowly enough through the snow to avoid falling into any unseen deep holes or tree casts and traveling fast enough that the GPS unit could tell in which direction we were headed. Jeff carried Derek upon his shoulders the short distance to the cave. As we reached the cave, we also noticed we had picked up several extra shadows following our footsteps: a young male-female couple, two young men on military shore leave, and another pair of young men.

James proceeded to take Devlin and Ira into some short crawling tunnels near the cave entrance while Michael set up his

camera equipment. Jeff and I took Derek a few feet down the main passage to get him into his harness and clip on the rope. Luckily, he didn't make a fuss. I think he was too excited to finally go caving again after an eight-month hiatus.

The approach to the ladder was a sloping floor leading to a wide overlook that narrowed to a single file passage with a drop off on one-side. Jeff approached the ladder first and braced himself against it with the rope, then I led Derek to the ladder. Not at all disturbed by the height, Derek watched as I climbed onto the ladder first, then Jeff helped him onto the first rung. I helped guide Derek's feet on the way down (he only

slipped once or twice), but Derek did the rest by himself.

At the bottom, I unclipped the rope. Jeff followed. It was our intent to wait for the rest of the group since standard procedure in my book is to let the trip leader be in front. But Derek had other ideas. He ambled down the main passage without scarcely turning around to see if Mom

and Dad were following. Since I figured we would be moving slow enough that it would be easy for the rest of the group to overtake us, and that there was only one real side passage near the back, we headed into the cave.



Jeff helps Derek climb over some breakdown. Photo by Kat Wilson.

Derek had a grand time. He loves tried

climbing up every bit of breakdown he could find. He also kept getting down on his hands and knees to peer under crevices, looking for the crawl spaces and side passages more common to limestone caves. He kept looking puzzled whenever he didn't find any spaces large enough for him to crawl into or under.

The majority of Lake Cave is easy, walking passage, and we settled into a nice rhythm of alternating between snapping pictures, helping Derek over larger pieces of breakdown, and occasionally helping him adjust his headlamp which would periodically fall off his helmet, since it was attached with zipties rather than helmet

clips. Predictably, the rest of our group leapfrogged past us, though because they stopped periodically to listen to James talk about lava tubes, or because Michael found another good section to photograph, we would sometimes leapfrog past them as Derek didn't feel like pausing for geology or photography lessons.

At one point, when we had gotten a little too strung out, we thought we had lost Devlin, and weren't sure if he was in front or us or behind us, James sent runners ahead and behind, but as there was no way to get lost and nowhere to

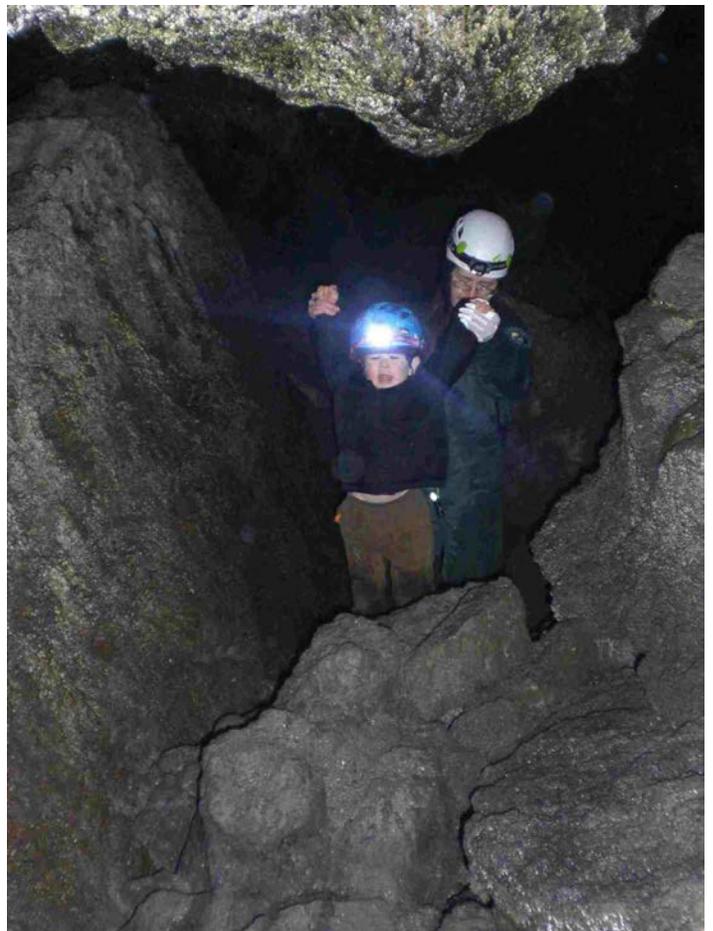


Kat and Derek soaked to the knees after splashing in puddles. Photo by Jeff Wilson.

hide, we weren't too concerned yet, and Jeff, Derek and I continued moving forward.

There were a few places where we had to negotiate a little more carefully, such as lifting Derek down some six or seven-foot high drops through breakdown, or crawling down short but steep low-ceiling sections. As we neared the back of the cave, we discovered an increasing number of puddles which delighted Derek to no end as he happily splashed through each one. Lake Cave, which is primarily a dry cave with not much in the way of active cave fauna, gets its name from the seasonal sump at the back of the cave, some 4000+ feet from the entrance. Calling it a lake is generous. On the surface, it would scarcely qualify as a pond.

Still, we were glad to have reached it (and were



Derek grins as he climbs over yet another rock. Photo by Jeff Wilson.

the first of our group to do so, with Derek having walked most of the distance on his own two feet). At that point, it was about 1 p.m., and already about an hour past Derek's usual naptime. We sat by the water's edge for a bit, ate a snack, then turned around.

That was when Derek balked. He kept pointing to the lake. "Go that way, Mom." Rather than explain to our two-year-old that we weren't prepared to scuba dive it (and wouldn't be in a million years), I said it was too deep, even for Mommy and Daddy. Derek didn't like that answer, and he promptly burst out wailing.

Practically the only time Derek cries is when he is tired, hungry or both. If Derek is well rested, and doesn't get his way, he may fuss for a bit and then respond reasonably well. If he's tired and hungry, his protests are stronger and louder. The return trip was thus a little more arduous. Thankfully, he generally does not like to throw tantrums in front of non-parental witnesses, so we quickly turned around and caught up with the rest of our group (who were just finishing up exploring the only side passage of any significance in the cave, accessible via a short

ledge). That was when James decided it was time to break out "The Feast."

Derek calmed down and perked up when he realized the Feast included gourmet cheese and crackers with brownies for dessert. James had packed enough for everyone, and a quick head count showed that we hadn't actually lost anyone--Devlin had at some point rejoined the group. In fact, it was probably the only time our whole group was in the same place at the same

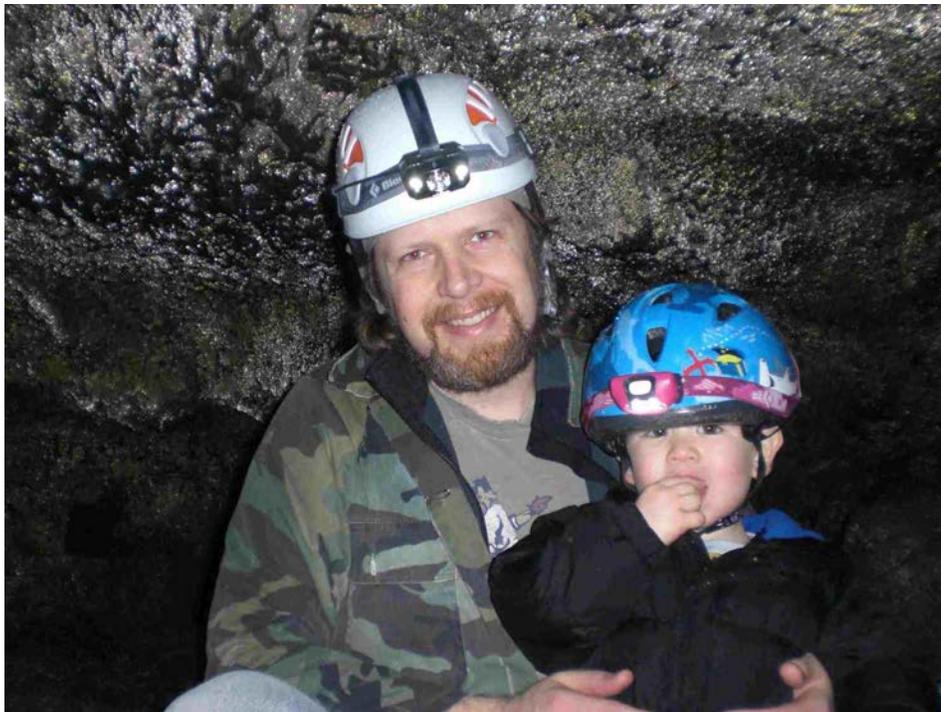
time in the cave for any significant amount of time on this trip.

The Feast was enhanced by James's "party headlamp." Unlike me (I am technologically-challenged at best), James loves to experiment with constructing new and improved headlamps. His latest version was a color-changing LED

that cycled automatically between red, green and blue lights. Cool.

After eating, we split up again, with James, Ira, Devlin and Alfredo heading to the back to see the "lake" and Jeff, Derek, Michael and I heading for the exit, over Derek's protests about leaving before everyone else. We met one other group on the way in as we headed out, a party of five

That was when James decided to break out "The Feast."



Derek rests on Jeff's lap and eats a bit of snack at the back of the cave. Photo by Kat Wilson

or so, again with no helmets, and just a few flashlights between them. Despite the fact that I thought it sounded like Derek was protesting bloody murder, they thought he was a real trooper for being that far back in the cave (and since James confirmed later that he didn't see that group at all on the way out, I assume they turned back before reaching the end).

On the way out, Derek was so tired he repeatedly asked for a nap (he's the only two-year-old I know who will ask to go down for a nap when he's tired). Jeff took some extra webbing and created a sling so he could more easily carry Derek. Since an extra 25 pounds takes its toll on the shoulder muscles, whenever we reached the flatter, sandier parts of the cave, we helped improve Derek's mood by doing that "one, two, three jump" thing where we swing him by his arms between us as we walk.

Still, even though at times I thought that Derek

could be heard the length of the cave, Derek didn't fuss the whole way out. Part way out I changed his diaper—does anyone else pack diapers in their caving pack? Thankfully it was just wet and not dirty. I then got him into dry clothes, dry socks and dry shoes, which seemed to help.

*Does anyone else pack
diapers in their caving pack?*

He quit crying entirely when he saw the ladder (and the daylight just beyond it). I thought he might be too tired to climb

it, but Derek insisted he wanted to climb out by himself, so Jeff put him back in his harness and climbed out first, then belayed from above while Derek climb up the ladder without any assistance.

At the top, we met Michael who had passed us earlier and was waiting for the rest of the group to exit. While normally we would also wait for the rest of the group, we needed to get Derek back to the car where he could rest. We



Derek walks unafraid into the awaiting dark of the cave.
Photo by Kat Wilson.

followed our tracks in the snow back to our car where we changed clothes and headed for home. Sure enough—even though he almost never falls asleep in the car—he fell asleep within minutes of getting onto the road. And except for the lovely windshield decorations we found on our vehicle—parking tickets for lacking Sno-Park passes—it was a great trip. Everyone else got out of the cave safely, too, and had a great time. We wish we could have seen some of the crawling passages.

Next step (and we're only half-joking) is to get a helmet camera to strap onto Derek's helmet and send him into the crawlways!

A Perspective on the Western Region NSS Speleo-Ed 2012

By Jerry Thompson

On Thursday, May 17, 2012, geriatric Cascade Grotto cavers Jim Harp and Jerry Thompson traveled south from soggy Puget Sound country heading for the high desert near the city of Bend, Oregon to participate in the mind-expanding event, Speleo-Ed 2012.

The first day they made it as far as Government Camp, Oregon where they secured accommodations in the lovely Mazama Lodge at the base of Mount Hood. They were the only guests present and were treated royally with five-star meals for a very modest price.

On Friday morning, with a little more than two hours of driving time remaining, they arrived at Sundance Meadows Ranch near Bend. Later in the day Harp and Thompson were joined by Cascade Grotto members, Hester Mallonée and Albert Meerscheidt along with Hester's two daughters.

Sundance Meadows Ranch is a nine-hundred acre non-profit horse ranch owned and operated by share-holders. It offers a lodge, bunkhouse,

large recreation hall, indoor swimming pool and a sixty-six space RV campground plus ample areas for tent camping. The ranch is situated a short driving distance from many of the lava tube caves as well as beautiful downtown Bend. The



Mazama Lodge at the base of Mt. Hood. Photo by Jim Harp.

Speleo-Ed weekend event was the ranch's first experiment at operating a venue for a meeting or conference. Most ranch owners and Speleo-Ed participants appeared very well satisfied with the event.

Saturday morning's seminars and activities were

organized into two tracks. Harp and Thompson selected the science track while Hester and company attended the cave survey track. The first science track seminar was about picas in lower elevation lava flows and included recent findings that have altered the general understanding of pica population distribution. The other science track seminars were changed, and Russell Harter presented a fine slide show and lecture entitled "Five Kinds of Lava Tubes."

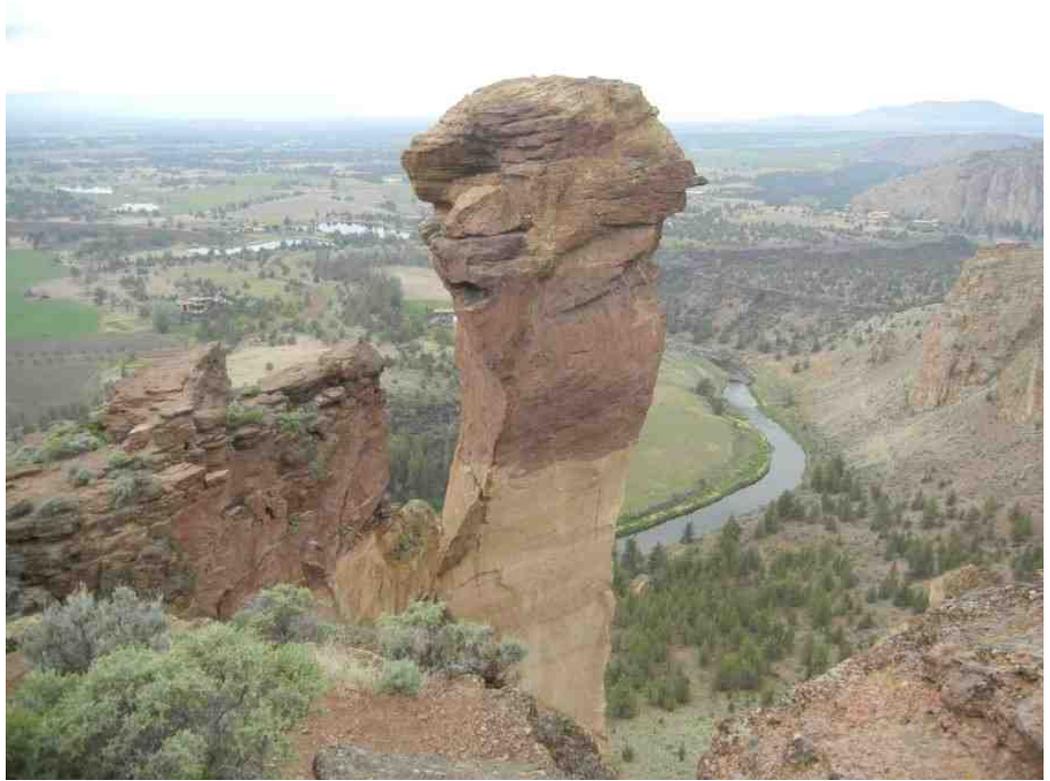
The survey track people enjoyed an in-cave survey practice and a session on cave

cartography using current software programs while Harp and Thompson attended a session on cave photography. They also did the self-guided tour of Pilot Butte State Park which is a cinder cone located in the center of Bend.

Saturday evening, after the Western Cave Conservancy Benefit Dinner, Harp and Thompson attended the Western Region business meeting with Thompson representing Cascade Grotto as approved by vice chair Robert Mitchell. Some of the business discussed included a proposal involving the possible merger of the Western Region and The Northwest Caving Association which was tabled indefinitely. Three thousand dollars of Western Region matching funds were allocated for the



Jerry in the playground at Sundance Meadows Ranch. Photo by Jim Harp.



Smith Rock State Park. Photo by Jim Harp.

NSS Headquarters Building Project.

On Sunday, Harp and Thompson followed cars headed to Arnold Ice Cave and wandered off to attempt locating the entrance to Hidden Forest Cave which they were unable to find. They did encounter a number of trenches and a couple of small caves. This was followed by a drive out to nearby Smith Rock State Park where they hiked the Homestead Trail.

On Monday morning, Harp and Thompson packed up and returned to Smith Rock State Park and hiked the spectacular Misery Ridge, Mesa Verde, and River Trails. High class rock climbing was happening all the way along their route. Later that day they headed north from Smith Rock with hopes of other adventures; however, as they drove north, rains increased and damped their enthusiasm, and they headed back to soggy Puget Sound country.

Former Grotto Member Roger Cole, 62, Dies

By Jerry Thompson, with excerpts added from the program at Roger 's memorial service

Former Cascade and Oregon Grotto member, Roger Cole, died in a Vancouver, Washington hospital on March 3, 2012 at age 62.

In the mid-1980's, when I first started attending Cascade Grotto meetings on a fairly regular basis, I soon became acquainted with Roger Cole. At that time, Roger was a regular at grotto meetings. One of my first memories of Roger was a report he gave on a trip he had taken with Jeff Forbes to Thanksgiving Cave on Vancouver Island. Roger was a dedicated and consummate outdoorsman. His standard uniform at grotto meetings included jeans and a bold plaid, flannel shirt. Roger regularly attended NCA Regionals during his many years as a Cascade Grotto member.

Roger was born in Vancouver, WA on July 11, 1950 to parents William A. and Rachel R. Cole. He graduated with honors from Hudson Bay's class of 1968 and from the University of Washington with a B.A. in Geography.

Professionally, he was a cartographer, starting as a locator for Land Title in Vancouver, then as a cartographer for NOAA in Silver Springs, MD, and Tillamook and Clark Counties, Washington, and then for the State of Washington. For most of the time I knew him, he lived and worked in Olympia. A number of years ago, he returned to his hometown of Vancouver, Washington.

For many years, Roger was involved in scouting. As a scout, he became an Eagle Scout, the highest scouting award. Later, as a scout leader and then District Commissioner, he received the Silver Beaver award, one of scouting's highest

adult leader awards.

In recent years, Roger was actively involved in conservation and environmental protection through the Sierra Club. Roger worked hard to block Portland from becoming a coal exporting port. Roger regularly attended public meetings on environmental concerns and was familiar to public officials and decision makers in the Vancouver/Portland area. His volunteer work also included serving on the Gifford Pinchot Task Force, Friends of the Columbia Gorge, Columbia River Keeper, and working with Sea Scouts, Common Cause, the Seaman's center, Clark County's Walk-and-Knock, and the city of Vancouver. Roger always had a huge heart for those less fortunate.

He was also an active outdoorsman. As an avid sailor, he commanded the Jolly Roger, the boat he learned to sail as in his youth. He continued sailing throughout his life, and was a past member of the U of W and Portland Yacht Clubs. He was also an avid cross-country skier, camper, hiker, and a past member of the Ptarmigans. He summited Mt. Hood and camped in all of the National Parks of the West. He served as vice-chair for the Oregon Grotto of the National Speleological Society.

Scouting and Sierra Club associates as well as members of the Cascade and Oregon Grottos fondly remember Roger. He will surely be missed.

Survivors include his brother, Douglas (wife Margie) of Bellingham, WA; cousin Steve Walton of Beaverton, OR; and his best friend, hiking, camping, bicycling and kayaking buddy, Lehman Holder (wife Barb) of Vancouver, WA.

Upcoming Meetings, Cave Trips and Events

MONTHLY CASCADE GROTTO MEETINGS

Third Fridays of the month at 7 p.m.

See page 31 for driving directions and details.

July 20	Shoreline Community Ctr.
Aug. 17	Milton Tavern
Sept. 21*	Shoreline Community Ctr.
Oct. 19	Milton Tavern
Nov. 16	Shoreline Community Ctr.
December	Holiday Party, date and location TBA

* Includes program, see below.

LOCAL & REGIONAL EVENTS

July 21-22, 2012

Spider, Gremlin, Flow, Manhole Caves--WA
near Mount Saint Helens. Date tentative. More details later.

Trip Leader: Kim Luper, Oregon Grotto

Contact: www.oregongrotto.com

July 27-29, 2012

2nd Annual All Girl's Cave Trip--OR

Location: Crane Prairie Resort, Bend Oregon
Fees: \$35 each person (includes Saturday dinner and donuts on Sunday).

Details: (Tentative Schedule):

- Friday 7/27: Girls-only camping/short cave trip
- Saturday 7/28: Girls-only cave trip: Cathedral Cave (vertical cave led by Erin Walker)? other caves TBA; Men could plan their own separate trip. Evening: Co-ed camping and gourmet fajita dinner with champagne provided. Live music? Any musicians offering? Possible "Battle of the Sexes" vertical obstacle course designed by Bob Johnson aka "Vertical Bob."

- Sunday 7/29: Doughnut Feast and Co-Ed Caving.

Contact: Lisa Bauman or e-mail

willamettevalleygrotto@gmail.com

July-Sept, 2012 (selected dates, see below)

Bats Northwest Bat Walks--WA

Details: Listen to a program about bats and watch local bats fly out at sunset. All programs are at Green Lake Park in Seattle, WA except July 27 which is at Kelsey Creek Farm.

- Mon., July 23, 8 p.m.
- Fri., July 27, 7:30 p.m.
- Thurs., Aug. 9, 7:45 p.m.,
- Wed., Aug. 22, 7:15 p.m.,
- Wed., Sept. 5, 6:45 p.m.

Contact: www.batsnorthwest.org for directions and details.

Aug. 1 -31, 2012

Cave Ridge Trips--WA

Trip Leader: Thomas Evans

Details: The following schedule is tentative and subject to change. Contact Thomas for latest details.

- Aug. 3-5: Probably a mapping trip
- Aug. 11: "Over the Edge" in Seattle
- Aug. 12: Probably a mapping trip
- Aug.13-19: Start paleontology project
- Aug. 24-26: End cave paleontology project; conduct a rescue exercise
- Select weekdays: Mapping trips
- *Other possible projects:*

Personally I would like to see a photography/painting weekend in Red and Ice caves this year (maybe even into Cascade where we found the formations last year). Also open to other suggestions.

Contact: cavertevans@gmail.com

Aug. 30- Sept. 3, 2012

NCA REGIONAL--WA

Trip Leader: Oregon Grotto

Details: See page 29-30.

Sept. 21, 2012

Cascade Grotto Meeting & Bat Program--WA

Location: Shoreline Conference Center

Program: Barbara of BatsNorthwest.org will present a program about bats either before or after the business meeting.

Sept. 28-30, 2012

WESTERN REGIONAL 2012, CA

Trip Leader: Stanislaus Grotto

Date subject to change. Vallecito, California near lots of limestone caves.

Dates TBA

Crystal Picking Projects--WA

Details: Pick through crystals (at Hester Mallonée's house in WA) as part of a cave restoration project.

Contact: Hester Mallonée,
hestermallonee@yahoo.com

Date TBA (sometime mid-July to Sept):

Wallowa Mountains Ridgewalking Trip--OR

Contact: Jerry Thompson at
thompsog@whidbey.net

Details: A strenuous 3-4 day mid-week trip to NE Oregon to the Wallowa Mountains wilderness area. Camp at lake (at about 8000 feet) and look for caves (including possibly some marble caves). Trip limited to about eight people.

Date TBA

White Nose Syndrome (WNS) Sign Installation Project--WA

Details: Install WNS signs at various caves, kiosks and campgrounds in the Trout Lake area. The list of caves and the dates will be determined by government agency personnel in charge of the project.

Contact: Ron Zuber

Date TBA

Gardner Cave Area Ridgewalking--WA

Details: Camp and investigate a bunch of cave leads near Gardner Cave near Crawford State Park

Contact: Robert Mitchell, caver@snail-mail.net

NATIONAL EVENTS

July 20-22, 2012

Karst-O-Rama--KY

Trip leader: Greater Cincinnati Grotto

Details: <http://karstorama.com> for details

20th Year at Great Saltpetre Cave Preserve in Mount Vernon, KY. There will be many cave trips including new discoveries and old classics, with caving activities such as "Grotto Grunge Wars."

July 28, 2012

Mother Lode Grotto 50th Anniversary--CA

At California Caverns, Mountain Ranch, CA

Details: www.motherlodegrotto.org

August 10-12, 2012

59th Annual Indiana Cave Capers--IN

Trip leader: Central Indiana Grotto

Contact: www.cavecapers.com or Ron Adams at 317-490-7727

August 27-31, 2012

Black Hills Cave Restoration Camp--SD

Hosts: Wind Cave National Park and Jewel Cave National Monument

Contact: Kelly Mathis by August 3, 2012: 605-673-8324 or kelly_c_mathis@nps.gov

Sept 24-28, 2012

Carlsbad Caverns Lint Camp 2012--NM

Details: Remove lint from cave.

Contact: P. Jablonsky at 970-874-8979 or patjabo@hotmail.com

NCA Regional--Schedule & Registration



Note: The following cave trips and events are scheduled for the Northwest Caving Association (NCA) Regional Event, Labor Day Weekend, August 30-Sept.3, 2012 near

*Mt. St. Helens, WA. For details contact:
<http://www.oregongrotto.com/regional2012.shtml>*

APE CAVE--Clean Up

Help clean the cave and see the cave for free. Over two-mile long cave. Biggest cave of Mount Saint Helens area.

BAT AND PRINCE ALBERT CAVES

Two very nice caves with some of the best Railroad Track formations.

BEAVER CAVE

This cave has a short vertical drop into some very large passage with some nice ledges. Not too much breakdown. Longer hike and some vertical gear recommended.

FALLS CREEK area - THREE SINKS

Very nice cave, almost all walking with large sand formations. Maybe an hour drive from camp.

FLOW CAVE has some nice colorful passages and railroad tracks.

LITTLE PEOPLE'S has some nice walking and crawling passage with levels.

GREMLIN CAVE

A nice cave with two entrances. One a vertical drop. Some nice formations. About half walking and half crawling. Near camp.

LAKE CAVE--Clean Up

Help clean the cave and see it for free. A cool side red passage and almost 100 percent walking. Near Ape Cave and Trail of Two Forests.

LITTLE RED RIVER CAVE

This cave has some very large lava falls and almost all walking passages and a river towards the end. A limited trip and some minor vertical required. Near camp, short hike.

OLES CAVE

One of the longer and nicer caves. Mostly walking passage and some cool features. Over one mile hike to cave.

PILLARS OF HERCULES CAVE

The most decorated cave and will be very limited. Cave is gated and permit required. Only four people per trip.

UTTERSTROMS CAVE SYSTEM:

Several small caves with some cool features. Includes **BREAKDOWN, RAILROAD TRACK, SURPRISE, ARCH, MOSS AND SPRING CAVES**

VERTICAL PITS

There are a few vertical pits near Mount Saint Helens. See website for more details.

VERTICAL PRACTICE

Two days only, details later. Trip Leader: Vertical Bob

CAVE PHOTOS

For pictures of some of the caves, see the following URL:
<http://www.oregongrotto.com/gallery/main.php>

2012 NCA Regional

August 31 - Sept. 3

Mount St. Helens National Volcanic Monument

Registration

Important!: To save what you fill in this form you must click on "SIGN" in adobe reader, fill in your information and then press "DONE SIGNING"

Name(s)

Address

City State ZIP

Grotto NSS #

Phone

Email

Emergency Contact Name Phone

	Quantity		T-shirt size quantity
Adults	<input style="width: 50px;" type="text"/> x 15.00=	<input style="width: 50px;" type="text"/>	Small <input style="width: 50px;" type="text"/>
Kids 17 & under	<input style="width: 50px;" type="text"/> x Free=	Free	Medium <input style="width: 50px;" type="text"/>
Saturday Dinner	<input style="width: 50px;" type="text"/> x 5.00=	<input style="width: 50px;" type="text"/>	Large <input style="width: 50px;" type="text"/>
Guidebook	<input style="width: 50px;" type="text"/> x 12.00=	<input style="width: 50px;" type="text"/>	XL <input style="width: 50px;" type="text"/>
T-Shirt	<input style="width: 50px;" type="text"/> x 12.00=	<input style="width: 50px;" type="text"/>	XXL <input style="width: 50px;" type="text"/>
Total		<input style="width: 50px;" type="text"/>	

Please register by August 1st. We cannot guarantee T-shirts and guidebooks for orders received after this date.

Print this form and mail it
with check or money order
for your total to:
OREGON GROTTO
PO BOX 1290
FAIRVIEW OR 97024

OR

Save this form and attach it to
an email to:
battycaver@yahoo.com

and
Send a PayPal payment to:
battycaver@yahoo.com

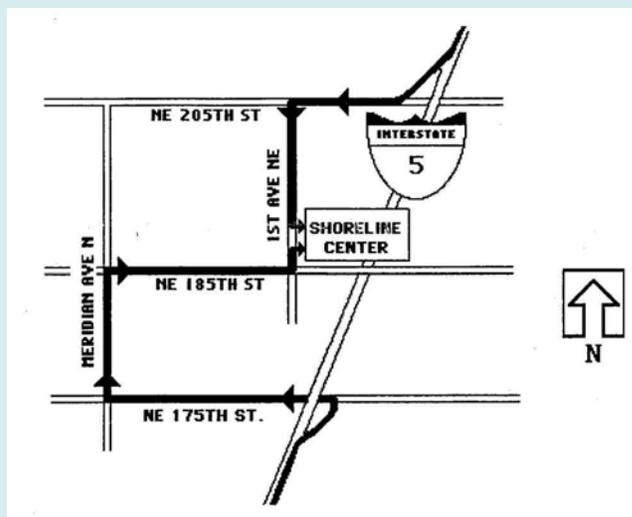
Cascade Grotto Monthly Meetings

The Cascade Grotto meets at 7 p.m. on the third Friday of each month (except December) alternating between the Shoreline Community Center north of Seattle, WA and the Milton Tavern south of Federal Way. Meetings consist of grotto business, followed by trip reports and scheduling of future cave trips. Some meetings also contain a program. After meetings in Shoreline, we usually drive to Spiro's Pizza for food, drinks and socializing. At the Milton Tavern, we can consume food and drinks during or after the meeting and stay at the Tavern for socializing afterwards. Meetings are open to all members of the public except that the Milton Tavern does not permit kids in the building after 4 p.m.

DIRECTIONS:

The **Shoreline Community Center** is located at 18560, 1st Ave NE in Shoreline. It's a large quiet conference room with easy access, free parking and full AV capability. See also <http://www.shorelinecenter.com>.

Directions from Seattle: Take Interstate 5 north to Exit 176 (175th St. N), and turn left at the light at the bottom of the off ramp. At the next traffic light (Meridian Ave. N) turn right. Turn right at 185th St. N (the next light). Turn left on 1st NE, which again is the next light. The Community Center is on the right. Don't get confused with the Senior Center, which is on the end of the building. Enter the building on the southwest corner and find the Hamlin Room.



The **Milton Tavern** is located at 7320 Pacific Highway East Milton, WA 98354, 253-922-3340. We meet in the upstairs meeting room. It's smaller and noisier than Shoreline, with no AV capabilities, but the tavern has great food and a wide selection of adult beverages. See <http://www.themiltontavern.com/> for menu. We encourage members and guest to support the tavern since they are supporting us by providing a free meeting room.

Directions from Seattle or Federal Way:

Take I-5 South. Take exit 142B. Merge onto S 348TH ST / WA-18 W. Cross over 16th Avenue S (Enchanted Pkwy). Get into left turn lane, onto Hwy 99. Go 2.9 miles (thru one traffic light). Turn left at the traffic light onto Porter Way, and make an immediate right into the parking lot.

Directions from Tacoma or Olympia:

Take I-5 North. Take exit 137 toward FIFE / WA-99 N / MILTON. Take the 54 Ave. E. North ramp toward FIFE / WA-99 N / MILTON. At the corner of 54th & Hwy-99 turn right, heading north. Go 1.3 miles (thru two traffic lights). At the traffic light at Porter Way, turn right, & make an immediate right into the parking lot.

Quick Tip:

How To Remember Where to Meet Which Month?

SHORELINE has an ODD number of letters.

MILTON (and TAVERN) has an EVEN number of letters.

Thus, in odd-numbered months we meet at Shoreline,
in even-numbered months, we meet in Milton.

Meeting Minutes--Feb. to June, 2012

Editors' Note: Due to the length of the meeting minutes, and the cost of printing, official minutes are posted on the Cascade Grotto's Member's-Only YahooGroups electronic forum, and are not included in the printed version of the *Cascade Caver*. A few highlights of each meeting are listed below. Official minutes are also available by request.

MINUTES: FEBRUARY 17, 2012

As many grotto members participated in the Oregon Caves cleanup project in Oregon on the date of the February meeting no official meeting was held. An informal gathering was held at the Milton Tavern. Three members and four guests attended.

MINUTES: MARCH 16, 2012

Location: Shoreline Conference Center with 10 members and five guests.

REPORTS

We received three membership renewals, one subscription and a donation. Due to an oversight at the bank, treasurer still does not have access to grotto savings account.

The *Cascade Caver* finally has new editors. Printing resumed in Feb., 2012 with a 30+ page color issue distributed primarily online.

OLD BUSINESS

Still no volunteers for vacant President's office.

Jeff Wilson replaced **Hester Mallonée** as NCA rep.

NEW BUSINESS

Cascade Grotto's public forum on Yahoo groups will be set up with an auto-reply when new

members join.

We discussed polling former members to ask why they did not renew their memberships. We reviewed a list of current members and analyzed how many members live withing driving distance of a meeting location (currently, 12 closer to Shoreline, and 12 closer to Milton). Suggestions were also taken for increasing membership.

We discussed establishing a grotto loaner-equipment inventory. Discussion followed, and **James Mooreshire** was approved as both Trip Coordinator and Quartermaster.

Robert Mitchell donated a laptop for use of the Secretary-Treasurer. The group voted to present Robert with an honorarium of \$100 for his donation.

TRIP AND PROJECT REPORTS

- Ron Zuber gave an update on some local bat conservation efforts.

- **Hester Mallonée** reported on Oregon Caves Restoration Weekend, Feb. 2012. Hester Mallonee said it was one of the largest groups we ever had with 13 attending from three grottos (Cascade Grotto, Willamette Valley Grotto and High Desert Grotto). An additional five had signed up but were unable to attend, which meant there was an extraordinary amount of leftover food. It also meant we need clearer rules regarding refunds/cancellation. Hester said it was also the best cleaning we ever had on "Paradise Lost." Neil Marchington (High Desert Grotto) worked with James Mooreshire to do some of the vertical stuff. Dean Lambert, Steven Wade of WVG helped get some heavy specimens put back into place. Other cavers worked hard at removing a strangely persistent

red marking paint that was used in the old days of the cave and which seemed to be leaching out of everything. The cleanup involved an area near a staircase with a footprint about the size of a small bathroom. The upper part is tight and now has a catchment, but still gets lots of traffic. The lower half of the area descends about four stories down. Ron Zuber complimented Hester on her remarkable efforts to foster good fellowship between various grottos, healing old wounds, and suggested her next job might involve some diplomatic work in the Gaza Strip. Hester stayed another three weeks and worked on restoring some rimstone.

- James Mooreshire reported that he attempted to lead a trip into Lake Cave. The trip happened, there were some unnecessary costs, and at one point we thought we had lost someone. Lessons learned: Group members should stay close together, inquire about parking permits BEFORE arriving at the parking area, be aware that when the snow plow stops at the Trail of Two Forests parking lot a lot of non-cavers looking for Ape Cave will follow your footsteps straight to Lake Cave instead; caving with a 2-year-old is awesome; and it is possible to organize and lead a cave trip despite not owning a car. Official participants includes **James Mooreshire; Ira Small; Devlin Bentley; Michael Montgomery; Alfredo Moreno;** and **Kat, Jeff and Derek Wilson.**

- **Robert Mitchell** attended the funeral (memorial service) of long-time caver Roger Cole. It was a nice event and well attended

PROGRAM

James Mooreshire showed some video footage of recent cave trips.

MEETING MINUTES: April 20, 2012

Meeting called to order at 7:10 p.m. at Milton Tavern with six member and six guests.

REPORTS

Received a \$12.00 bill from NSS for cost of webspace. Still have no access to the grotto savings account information.

OLD BUSINESS

When newcomers sign onto the Yahoo group (available to the general public), a welcome letter is now sent automatically.

Mitchell will e-mail **Aaron Stavens** to see if he might have some grotto rescue equipment, cave telephone, some lights, drop microphones, and a special harness.

Mitchell has uploaded programs onto the grotto laptop and asked for a backup person for the passwords since we were one officer short.

Marla Pelowski volunteered. **Kat Wilson** mentioned that she still needed to get Robert his \$100 honorarium check.

The upcoming Speleo-Ed happens to be the same weekend as the May meeting. The Western Region will host a meeting at the event.

Elliott Haddon shared his experience with one of the ice caves in near Bend, Oregon. His last time in one of the ice caves there, the entrance had been frozen over, and had to be burned out. A cigarette butt was found in the cave in slow decay. The cave had been used as a refrigeration cave in the 1960's, with stairs built in the 1930s. Cave was about 200 feet long with a huge dome, and it is possible to drive up practically to the entrance. The entrance is a drop down. It is recommended to tie a glowstick to the entrance in order to find your way out again. An opening at the other end may be resulting in increased air flow, keeping the entrance open.

Kat circulated an updated map of the areas affected by White Nose Syndrome. She presented The Center for Biological Diversity's petition asking the White House to limit human entry into caves to help prevent the spread of

WNS (see www.saveourbats.org for more info) AND the counter-response from cavers (via www.whitehouse.gov/petitions#1/petition/support-conservation=recreation-science-and-personal-freedom-mandating-public-access-caves-public/YX8Bj3F) that states that human impact on spreading WNS, if it exists at all, is insignificantly small, and cave closures are not a good solution.

NEW BUSINESS

Mitchell requested someone fill in for him as chair at the May meeting.

Haddon inquired about Elephant Cave (waterfall into a hole) and Lost Cave (by some powerlines) and caving on Vancouver Island, and said he has a copy of Caves of Washington by Bill Halliday on disk.

TRIP AND PROJECT REPORTS

- **Jay Baez** shared that he and James Mooreshire participated on a trip to Lake Cave, and met with members of another grotto (either Willamette Valley Grotto or Oregon Grotto). They also visited 3-4 other caves in the area, include one where folks were surveying.

- Robert Mitchell reported that he visited the area near Gardner Cave; the state park was closed. No new cave leads were found.

- Someone (name and date not recorded) visited Rattlesnake Cave off of I-90 near North Bend, Multiple levels, increased breakdown.

Meeting Minutes: MAY 18, 2012

No official meeting was held, but an informal gathering was held at the Shoreline Conference Center. Present were two members and four guests. Discussion included structure of the caving community (NSS and its chapters and sections), equipment needed for caving, reports of past cave trips, White Nose Syndrome updates, and answering general questions.

Meeting Minutes--June 15, 2012

Meeting called to order at 7:12 p.m. at the Milton Tavern with seven members and one guest.

REPORTS

Still need to get **Robert Mitchell** his \$100 honorarium check for donation of laptop.

Membership update: 43 total members (added 7 new members since March, one of whom paid 11.69 but **Kat Wilson** has misplaced the name of that member).

Mailing costs for Caver: Most recent issue cost \$12 per copy to print the last issue (full color). We have to mail several copies (two to NSS, one to a member, one to Grotto library). Printed copies of Caver have been requested by only one member. Kat printed 10 copies of Feb. issue. Kat has not submitted any bills for reimbursement.

Kat e-mailed Larry McTigue to get **Jeff Wilson** listed as the new NCA rep. Jeff has received no e-mails from them.

Oregon Grotto is hosting the next NCA Regional with trip sign-ups available via their webpage, Oregon Grotto is still looking for trip leaders for the event.

OLD BUSINESS

President's office still vacant. Mitchell will not chair next year due to probable commitments in another hobby.

We should probably assume we don't have any loaner lights/helmets. We may have an awning (**Michael McCormick**). **Aaron Stavens** said he has the rescue telephones (two and a spare) but no idea about any drop microphones. Stavens has personal wire for the phone we would use if it became necessary. The telephone is stored in a dry location in Staven's garage.

Staven has a Sked rescue sled in his

possession (the roll-up type), but it does not belong to the grotto. It is on loan from Northwest Cave Rescue Institute (NCRI). He also has on loan an Organ Spine Splint (OSS).

At the meeting **Lane Holdcroft** gave Mitchell a disk with all the grotto information he had. Grotto Laptop seems to be behaving itself, short of getting a back up function to work on it. It needs a 3/4 floppy drive according to XP Home, which doesn't seem to exist. Mitchell is looking for a cheap/free back up system.

WA DNR closed Talus Cave citing fear of White Nose Syndrome as a factor. Has real cave passage with dark passage, not impressive, but impressive for Washington State. The cave has transitory bats that pass through it, but not a known hibernaculum or maternity colony.

NEW BUSINESS

Stavens moved that Cascade Grotto donate \$50 to help the NSS pay off its new headquarters. Stavens pointed out that about \$3000 of the money in the grotto savings account is from the NSS Convention. Motion passed (seven in favor, one opposed).

TRIP AND PROJECT REPORTS

- No one present at the meeting had attended NSS Wester Region Speleo-Ed, but Mooreshire heard that some of the programs presented were excellent; and some lacked instructors so plans had to be changed.

- National Cave Rescue Commission (NCRC)—Two Day Orientation to Cave Rescue--at Oregon Caves. James Mooreshire reported that a really good group attended the training, consisting mostly of seasonal volunteers, Josephine County Search and Rescue, some sort of Redwoods Rangers, and some community volunteers. There were a few cavers, including grotto member Hester Mallonée, most of who went to teach. James Mooreshire participated in the training.

It was the first time (at least in recent memory) that the mock rescue portion of the rescue training was conducted off-trail in this cave. It seemed to make an impression on the chief ranger, Tammy Henderson. Stavens expressed his appreciation that Tammy permitted the training to occur.

- National Cave Rescue Commission (NCRC)—Weeklong Training in Alabama: the full week before Memorial Day Weekend, Aaron assisted with teaching Level One of the NCRC training in Alabama. Grotto member **Thomas Evans** was one of the patients. Attendance was approximately 75 (including instructors). There were 33 people in level one. There was also lots of TOFE (team operations and field exercises), which do lots of level two stuff.

- After NCRC, Stavens went and did Never Sink Cave in the TAG area, a 160-foot pit. He wasn't in there when it was dark enough but said other cavers reported seeing thousands of glowing firefly larva. He also did Valhalla, a 227-foot pit with a free drop, and wore a hole in the rope. This is the same cave where a section of the cave fell and killed some scouts a number of years ago.

- Mooreshire stuck his head in Ole's, and some smaller probably unnamed lava tubes. He noticed that one of the bat signs is missing. Seems like someone may have gone home with a new souvenir. The caves were as jagged as ever. The rain was as plentiful as ever.

- Mitchell flew twice to Missouri, The Cave State, and sadly, did not have the opportunity to go caving either time.

Meeting adjourned at 8:25 p.m.