Underwater Speleology

Journal of the Cave Diving Section of the National Speleological Society

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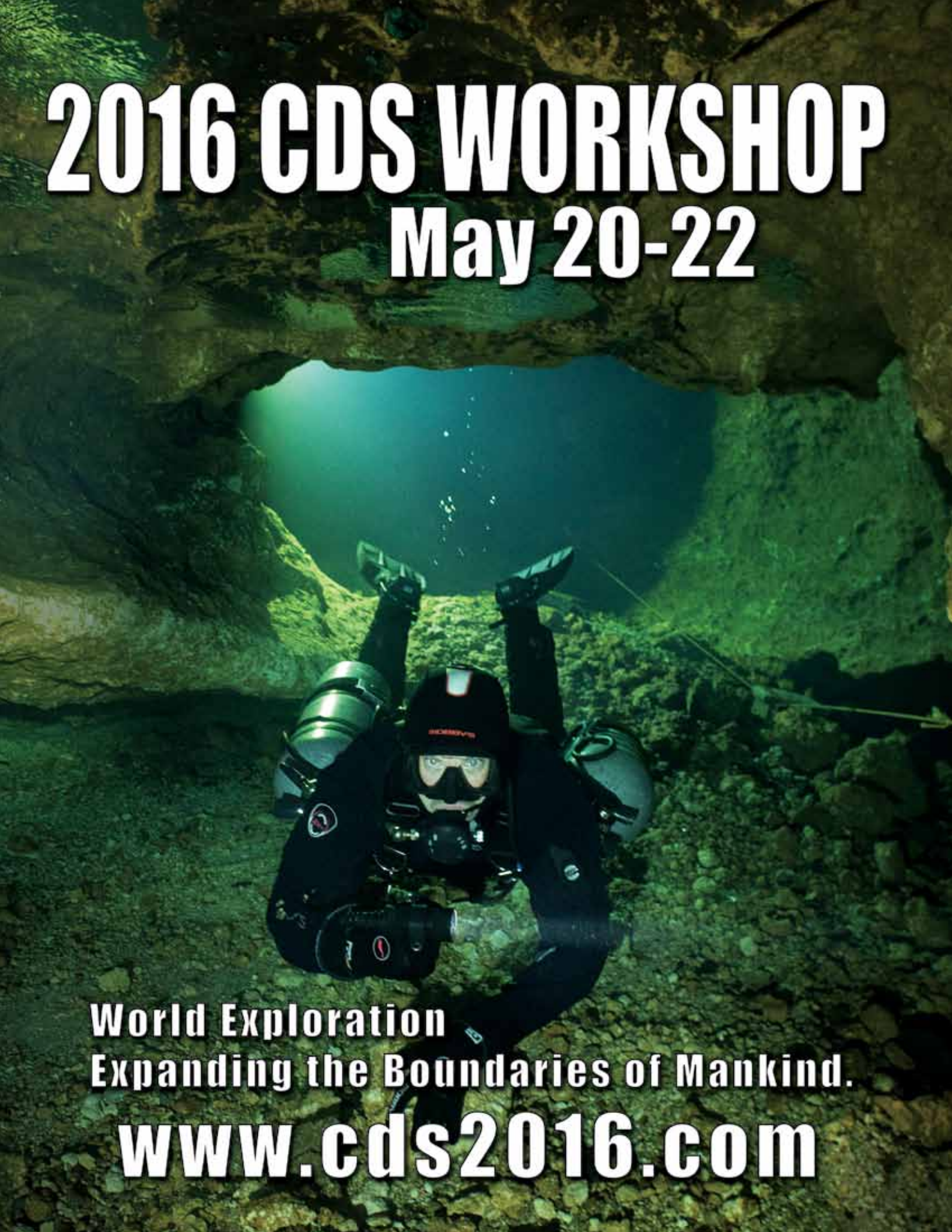
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Underwater Speleology
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Photographer: Peter Buzzacott

UNDERWATER SPELEOLOGY TEAM

EDITOR
ART DIRECTOR

Cheryl Doran
cccheryld@aol.com

ADVERTISING SALES
uwseditor@nsscds.org

DEPARTMENTS

SKILLS, TIPS, & TECHNIQUES
Georges Gawinowski
george@wdtdive.com

CONSERVATION CORNER
Michael Angelo Gagliardi

MILESTONES
Eric Parks
sskasser@hotmail.com

THE LOOP
Joe Citelli

BEYOND THE PANHANDLE
Jennifer Idol

OFF TO THE SIDE
Rob Neto
chipoladivers@gmail.com

INSTRUCTOR'S CORNER
Carl Griffing
carl@caveandtechdiving.com

EDITORS

SENIOR EDITOR
Barbara J. Dwyer

ASSOCIATE EDITOR
Russell Edge

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from the

A TIME FOR CHANGE

Your board has been busy with many things during the last quarter, the most prominent of which is the sale of Cathedral Sink, the details of which will be discussed in an article by our property manager, Al Clements. Al worked very hard on this project and I believe the membership will be pleased with the outcome. We also voted on several important proposals which will critically affect the future of the CDS.

As all of you know, membership in the NSSCDS requires you first become a member of the NSS after which you can join the CDS. In response to member commentary your board has given careful thought to options which areavailable that meet the needs and wants of our membership. The solution we propose is one which we believe will satisfy all concerned.

It is our intent to form an alternative membership which accommodates individuals who wish to be CDS members but do not wish to join the NSS. This would offer our members the best of both worlds. If you wish to join both organizations you can continue to do so, and if you wish to be a CDS member only you can also do that.

This membership will be called a CDS Membership and will entitle the holder to all of the rights and privileges afforded by the CDS but not the NSS. This would include the right to vote in CDS elections, run for the BOD. Accomplishing this requires amending our Constitution and By Laws.
The following sections need to be amended as shown:

THE CONSTITUTION

Article II
The purpose of the organization shall be the same as that of the National Speleological Society (hereafter referred to as NSS), with the additional purpose of organizing NSS members and all other persons who are interested in cave diving,so that theymay better promote the objectives of the NSS or the NSSCDS. These objectives include 1) promotion of the conservation, exploration, and study of underwater caves; and 2) education for increased awareness, safety, and skill in cave diving.

Article III
Membership in the NSS-CDS shall be open to all interested persons and shall consist of two types: NSSCDS and CDS. NSSCDS members shall enjoy all of the rights and privileges of membership in both the NSS and in the CDS. CDS members shall enjoy all of the rights and privileges of membership in the CDS ~~only.limited to current members of the NSS.~~

Article IV amended to read:
ARTICLE VI: This Constitution may be added to, or amended by approval of greater than two thirds (2/3) of the membership of the NSS-CDS and CDS combined who cast ballots on a written ballot following a minimum of sixty (60)

days written notice to all members. A minimum of one fifth (1/5) of the total membership must cast ballots to qualify as a valid polling of the NSS-CDS and the CDS. Notice of proposed amendments ...

ARTICLE VI
This Constitution may be added to, or amended by approval of greater than two thirds (2/3) of the membership of the NSS-CDS and CDS combined who cast ballots on a written ballot following a minimum of sixty (60) days written notice to all members. A minimum of one fifth (1/5) of the total membership must cast ballots to qualify as a valid polling of the NSS-CDS and CDS. Notice of proposed amendments must be provided ...

Article VIII
The Constitution, and Bylaws of the NSS shall not be binding on the NSS-CDS. ~~Any actions of the Board, NSS-CDS, or its agents inconsistent therewith will be illegal; therefore, null and void.~~

Article X
Any property of the NSS-CDS shall revert to the National Speleological Society (NSS) or any organization having nonprofit status selected by a simple majority of the Board in the event of the dissolution of the NSS-CDS.

THE BY LAWS

Article I: Purpose and Powers of the Corporation.
The Cave Diving Section of the National Speleological Society, Inc. ("NSS-CDS") possesses and may exercise all lawful corporate powers necessary and convenient for promoting the missions, purposes, goals and objectives of the National Speleological Society, Inc. ("NSS") and the Cave Diving Section (CDS), including public education, the interests of its members in conservation, exploration and scientific investigation of underwater caves, and the education of divers for increased awareness, safety and skill in cave diving.

Article II: Membership
A. General Qualifications. Membership in the NSS-CDS shall be open to all interested persons and shall consist of two types: NSSCDS and CDS. NSSCDS members in good standing and whose dues in both the NSS and the CDS are paid current shall enjoy all of the rights and privileges of membership in both the NSS and in the CDS. CDS members in good standing and whose dues in the CDS are paid current shall enjoy all of the rights and privileges of membership in the CDS only and be defined as a partial membership.~~limited to members in good standing of the NSS in the class of membership and whose dues to NSS-CDS are paid current.~~

B. d) CDS Partial Membership
i) Can vote in any election brought before the membership
ii) Can hold office if meets other qualifications and joins the NSS
iii) Can participate in any CDS function
iv) Is not eligible to dive any NSS owned properties that are managed by the NSS-CDS
v) Will not be eligible to receive any merchandise discounts offered to full members of the NSS-CDS
vi) Receives Underwater Speleology ("UWS")

Article III: Board of Directors
B. Qualifications. Directors and candidates must be current members of the NSS-CDS or the CDS in good standing for at least one (1) year prior to being nominated for a directorship. The Training Director and candidates for that directorship must also be current and active NSS-CDS instructors in good standing.
C. Election of Directors. Six (6) directors shall be elected by the general membership of NSS-CDS and the CDS: three each year, for a term of two (2) years. The one (1) director serving as Training Director shall be elected biennially by current and active NSS-CDS ...
1. On or before six months prior to the annual membership meeting, the Chair shall appoint a nominating committee consisting of three (3) or more NSS-CDS and/or CDS members in good standing responsible for identifying candidates for election to the board of directors. No sitting director shall be a member of this nominating ...
3. On or before four months prior to the annual membership meeting, the nominating committee shall solicit recommendations for nominees from the NSS-CDS and CDS membership through a publication of general membership circulation, or the NSS-CDS website...
6. On or before ten weeks prior to the annual membership meeting, the administrator of the election shall post on the NSS-CDS website, and shall mail as hard-copy to every NSS-CDS and CDS member in good standing, a ballot

Continued on page 19

Cave Diving Destination: China

Article and Photos
By: Peter Buzzacott

This year a new cave diving location is under rapid development in Du'An, China. The goal for Du'An is to join the ranks of Florida, The Lot and the Yucatan as one of the top four cave diving destinations in the world. Du'An certainly has enough caves and the local tourism board is investing heavily to bring this about, including hosting an international launch. Thousands of feet of cave have been mapped, as deep as 530 feet at DaXing cave (north). Sadly, within six months they had their first cave diving death at the same cave in an apparent record attempt.

My flights from North Carolina went via New York, then Shanghai, then on to Nanning International; around 24 hours or so in transit including layovers. My plan was to change money in Shanghai, but I ran out of time. Upon arriving in Nanning my bag of dive gear did not arrive with me. Things were not going to plan, but luckily for me the local Tourism Bureau supplied a guide/interpreter, Mandy, to meet me and soon we were speeding on from Nanning to Du'An, just another 90 minutes away. By now it was after 1am and I could barely make out the landscape. We checked into the hotel at 3am and Mandy cheerfully waved me goodnight with a "See you at 9am."

Fill station

In the morning, breakfast was filling, there was a sign in the elevator warning me not to press the buttons randomly and Mandy arrived on a moped to ferry me to the dive center. I donned my wing, the only dive gear to make it with me, and climbed aboard. At the dive center we scrounged through tubs of leftover gear from a previous French expedition and I tried on 3mm wetsuits as Mandy made calls to locate me more gear. As luck would have it, an open water class was just about to head our way from a city two hours away and they promised to bring a set of recreational regs and some fins for me. It looked like I'd get a dive in even without all of my own gear.

The dive center is brand new; new shop fittings, 50 new aluminum 80s, new compressor, new booster and new gear on the walls. Empty tanks line up against one wall, with full tanks against the opposite wall. They have oxygen, nitrox, air, trimix and helium on hand.

The open water class arrived and I was introduced to the visiting dive staff as students began signing out tanks and people bought or rented last-minute odds and ends. It was the usual Saturday morning chaos seen in many dive centers worldwide.

Mandy

Finally, Mandy locked up and we climbed into an SUV and set off for DaXing Caves. The city disappeared behind us and low country agriculture contrasted with sheer jagged limestone pinnacles formed a breathtaking vista. I was excited.

At the cave, a huge billboard greeted us with a picture of a cave diver and the headline "WELCOME TO CAVE DIVING PARADISE." I geared up in the shallows, Mandy gave me directions to the caves and off I went. The water felt cool in my 3mm suit, I was alone, in unfamiliar gear, on air and using a home-made spool of line we'd found in a box. I decided to limit my depth to 130 ft today and to turn on quarters just to be safe. Descending into the south cave first, with visibility around 10-15 ft and I couldn't make out any line from the previous mapping project here. The entry funneled down and I passed through a window around 8-10 ft in diameter before it opened back up again. It wasn't long before I hit my turn depth, so I looked around, turned on quarters and reeled back out. It was nice to see some new limestone, but the cave was pretty featureless so far and I hoped things would improve. I finned north across to the lake to the second cave. I went through my checks again and then, down I went. This one was even less interesting because the cave was so big that, in this vis, I could only see the wall next to me. I soon turned and reeled out. Crossing the lake back to my entry, decided to dive the cavern by the shore wherein I found various coins tossed-in by well-wishers, hoping for good luck. Crossing the lake back to my entry, I decided to dive the cavern by the shore where I found various coins tossed in by well-wishers hoping for good luck. I decided to dive the cavern by the shore wherein I found various coins tossed-in by well-wishers hoping for good luck. I was elated to have pulled it all together and dived here despite the setbacks, though I did hope the next caves I visited were more interesting.

On the way back to town Mandy's phone rang. There had been a problem with one of the open water students, apparently he'd mistakenly ended up with a tank of 98% helium and passed out soon after descending. He had been rescued by the quick-thinking DM, been given CPR and regained consciousness. We went to the hospital to see him and I was relieved to see he appeared fine. The next day I gave Mandy some advice about the need to analyze

DaXing cave Photographer: Nathalie Lasselin

DaXing Cave

every tank before it leaves the shop.

I needn't have worried, as the following day we headed south of Du'An and the diving was superb. We parked the car outside a traditional country house where the animals live on the ground floor and the family live upstairs. Locals soon gathered around and helpfully found a concreter's wheelbarrow for my kit. A television reporter filmed the proceedings adding to my obvious novelty. Kitting up by the cave, known as Jellyfish I (there are four), I was instructed by Mandy to "go over there" (pointing to the back of the cave.) That is indeed where I went, and that is when I realized cave diving is going to take off here. It was excellent. I was swimming through big passage, there were lines heading off here and there and T's in the French FFS style (with no arrow but the loose tail tied on the exit side.) Luckily I had arrows and cookies on my Nomad, enough to concentrate on without getting lost.
I exited with 3/4 of my gas remaining and made my way back to the shore, swimming through hundreds of freshwater jellies pulsing all around me. It was magical. Next, a cameraman filmed while Mandy interviewed me before we wheeled my gear around to Jellyfish II. I recalculated quarters and went for a look. This place was even more interesting, with big diver-sized siphon tubes in the floor and potential leads that, had I been in my own kit and with plenty of gas, I would have liked to probe. None-the-less, I was content to follow a line and get a feel for the place. To be honest, I could have spent the whole trip just at Jellyfish.

Duan at night

Fresh water jelly fish in Jellyfish Cave Photographer: Nathalie Lasselin

We toured the countryside and Mandy showed me many other caves, some dived, some not yet explored. New road signs directed us to park near new footpaths; twenty road signs so far Mandy told me. We chewed sugar cane at one cave while workers constructed a tomb nearby. Mountains towered over us, a stream bubbled past and the whole scene looked like a Chinese painting. I had noodles for dinner and slept well that night, getting over my jet-lag. The next day I met the new dive center manager, Mr. Cai, apparently a highly experienced dive organizer. It was his first day in the new job, so we met to discuss hazards, risk management and the business of cave diving. My advice was to look at American cave diving fatalities and establish a few ground-rules from the start, such as adopting the Florida system of line marking throughout the region. Gold line up the middle, jumps not

Jellyfish Cave

Road signage for caves

T's, etc. I also suggested they develop local experts as a priority; local instructors, local cave surveyors and a local recovery team. Currently they are heavily reliant on international expertise for teaching, mapping and just about everything. Their previous fatality, for example, was recovered by a French diver.

The meeting over, Mandy and her colleague Pan took me to a cave under a bridge. The view was so spectacular it felt like I was in one of those epic Chinese movies. There was a stone bridge, ramble-down buildings and an impossibly old wise man that watched me closely while I geared up. I soaked up the experience. In fact the diving here was only half the fun; culturally, coming here was a brilliant idea. I slipped below the surface and headed in the general direction of the bridge and found the entrance.

Bridge dive site

A bunch of loose line signaled a line break somewhere inside, so I tied off my “reel” and explored soon finding the other end. I followed my line back to the loose line outside and re-connected the ends. Happy to have done my good deed for the day, I headed in. The roof was low, not like the other caves at all. This one felt more like Madison Blue. Again I found another unmarked T and placed my line arrow on the exit side. Vis was good in here, I was having fun but too soon I reached 100 ft depth and, a little sadly, I looked around before turning. On the way out I followed the T for a bit until I hit deco and then I had to almost force myself to leave. It was my fifth dive to 100 ft or more in three days and I was flying to Shanghai the next day, so I really didn’t want to push it. I lapped the entry lake a few times, making an ultra-long safety stop, as I’d done after every dive here. Finally, I surfaced and that was it; my cave diving was over for this trip and it was time to attend the diving medicine conference in Shanghai.

My sincere thanks to Mandy and the Du’An Tourism Bureau for making me feel so welcome and for helping me to cave dive in China. My take on the place is that Du’An Province really will grow into a cave diving destination. It is just a matter of time now, almost everything else is ready.

Underwater photos kindly supplied by Nathalie Lasselin. Visit http://nathalielasselin.com/photos for more.

TROGLOMORPHISMS: LIFE IN CAVES

Thomas R. Sawicki, Ph.D.

Widely diverse animal groups have entered into caves and made this perpetually dark environment their home. Regardless of the type of animal, whether crustacean, millipede, fish, or amphibian, all animals that fully adapt to this environment evolve what are called troglomorphic characteristics. The term troglomorphic is from derived from two Greek words; *Troglo* meaning cave and *morph* for form. Thus troglomorphic literally means cave form, and these cave restricted species are called troglobites. The troglomorphic characteristics of troglobitic organisms can include loss of eyes and pigment, attenuation of the body, and elongation of appendages, among others. The remarkable fact that unrelated groups independently evolve similar characteristics when living in a specific habitat is given a special evolutionary term—*convergence* (see figures 1-5).

The mechanism for the convergence of troglomorphisms such as the loss of eyes has long been questioned and debated. Even Darwin (1859) wondered how cave adapted organisms lost their eyes when he wrote, "As it is difficult to imagine that eyes, although useless, could be in any way injurious to animals living in darkness, I attribute their loss wholly to disuse". Although evolution by natural selection has long been known to be the most important mechanism for adaptive evolution, it is also known that it is not the only mechanism by which populations and species can evolve. Evolution is defined as the change in allele frequencies within populations over time. Alleles are nothing more than variations of specific genes—for instance the A, B and O blood groups are alleles (variations) of the gene for blood type. Another mechanism by which allele frequencies can change is called *genetic drift,* where alleles of a specific gene can vary because of random events.

Generally speaking, genetic drift can have its greatest effect on allele frequencies within small populations. In such populations stochastic events (such as a rock randomly falling and killing a few individuals), could dramatically change allele frequencies within the population. For instance, if 10 individuals within a small population carry a specific allele, and five are killed by a rock fall, then that allele's frequency will have been reduced by half in a single moment. It is important to note that although random events can *change the frequencies* of given alleles, especially within relatively small populations, the stochastic nature of these events *prevent this method of evolution from being adaptive.* Natural selection, on the other hand, is a nonrandom process, and so by definition can result in adaptive evolution.

I would like to briefly discuss one of the most obvious troglobmorphic characteristics, and how it evolves—the loss of the eye. Cave adapted species evolve after individuals from an epigean (surface) habitat (for instance a stream or lake) enter a cave environment. As you might guess, individuals from this founding population don't immediately evolve troglomorphic characteristics once they enter the cave. In fact I have seen many populations of animals living, feeding, and reproducing in caves with eyes and pigmented bodies—fully epigean in form. For instance, populations of a *Crangonyx floridanus*, an amphipod commonly found living on the bottom of lakes and swamps in Florida, have been known to invade cave habitats, and they look very similar to their surface counterparts. However, if the cave population remains genetically isolated from surface populations over an extended period of time, these populations may begin to evolve troglomorphic characteristics.

In theory, it is actually fairly easy to determine if nonrandom natural selection or random genetic drift is acting on a specific allele within a population. If natural selection is acting on an allele (either positively or negatively) then the frequency of the allele within the population should either be consistently found to increase (if the selection pressure is positive) or decrease (if the selection pressure is negative) over time—a concept referred to as *directional selection*. However, if there is no strong selection pressure, and changes in allele frequency over time are due primarily to random, stochastic events, then the frequency of the allele within a given population should randomly increase and decrease over time.

Take a look at Figure 1. This is a picture of the eye of an amphipod that a colleague of mine collected from a pond (an epigean, i.e., surface habitat). Amphipods are a type of small crustacean, and most crustaceans, like many other arthropods (e.g., insects), possess a com-

Take a look at Figure 1. This is a picture of the eye of an amphipod that a colleague of mine collected from a pond (an epigean, i.e., surface habitat). Amphipods are a type of small crustacean, and most crustaceans, like many other arthropods (e.g., insects), possess a compound eye. That is, their eye is actually a complex structure composed of many individual smaller eyes or facets called *ommatidia.* The poster child for a compound eye is the dragonfly eye. Each ommatidium can be thought of as a small individual eye—each ommatidium has its own pigment for the absorption of light and works in concert to form the entire compound eye. Notice the oval shape of the eye (different groups of amphipods can have characteristically different shaped eyes—but these eye shapes are invariably symmetrical).

Figure 1

Now examine Figure 2. The eye in this animal appears to be slightly reduced, it has lost its symmetry, and some of the ommatidia from this amphipod's eye are missing pigment.

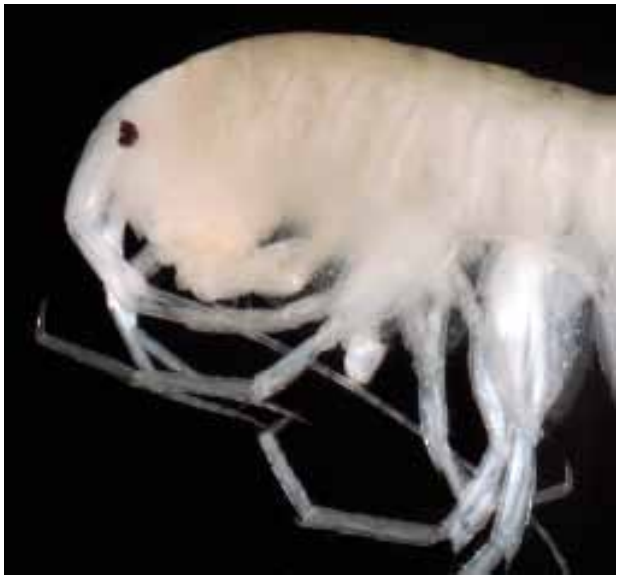

Figure 2

Figure 3 shows an amphipod whose eye is greatly reduced, symmetry has been completely lost, and not only is pigment missing from the ommatidia, some ommatidia are missing altogether.

Figure 3

Finally examine Figure 4—on this amphipod, no vestige of the eye remains. Figures 2 and 3 are a classic demonstrations of "intermediate" forms. Both individuals were collected hundreds of feed inside caves in Jackson County, Florida. These few examples demonstrate the remarkable intermediacy of cave dwelling amphipod eyes that I have seen during my years of study.

Figure 4

But why does this occur? Protas et al. (2007) shed light on how two of the most obvious troglomorphic traits, the loss of eyes and pigment in cave animals evolve. Their study focused on the Mexican cave tetra (*Astyanax mexicanus*). This fish is a model organism for studying the evolution of troglomorphism because the progenitor epi-

gean population is known and extant—in other words, the surface population complete with eyes and pigmented scales, still exists. Thus troglomorphic individuals can be collected from caves, and surface dwelling individuals can be collected from nearby streams. Interestingly, troglomorphic individuals are still able to hybridize with their surface dwelling ancestors. Their study suggested that mutations which affect the size of the eye or lens *consistently resulted in eye reduction*. This directional selection is exactly what one would expect if natural selection is the evolutionary force behind the changes in allele frequencies. One could ask why the loss of eyes would prove to be adaptive. As Darwin noted, there is no obvious reason why the eye should actively harm a cave dweller. One idea that has been postulated is the potential energy saved by not producing the eye during development; however, the fact that any energy savings gained by not producing the eye would be largely lost by the development of tissues to fill in the eye socket has refuted this idea.

Figure 5. An example of convergent evolutuin

Protas et al. (2007) provided a very interesting and compelling hypothesis. They note that, "the vertebrate retina is one of the most energetically expensive tissues, with a metabolism surpassing even that of the brain". Interestingly, the vertebrate retina uses more energy *in the dark than in the light!* So the answer to the question of how the loss of the eye in cave dwelling vertebrate organisms could be adaptive may be due to the cost of maintaining a metabolically expensive structure *over the life of the individual*—it is not unreasonable to assume the same is true for invertebrate animals. Without sunlight, caves are generally relatively low in available energy. Thus any individual living within a cave environment that possesses alleles that reduce its metabolic needs, and so the amount of energy required to survive, will have a strong selective advantage and directional selection ensues. It is beyond the scope of this paper to discuss the details, but it is worth noting that the researchers provided evidence that the loss of pigment in the cave tetras was not directional, suggesting genetic drift as the mechanism of evolution.

Can the study by Protas et al. (2007) provide a hint as to how other troglomorphic characteristics evolve? I believe it can. For instance, the attenuation of the body—a reduction in overall biomass—means individuals that carry this characteristic need less energy to build and maintain their bodies—a significant selective advantage in an energy limited environment. Any allele that produces an increase in sensory structures involved with chemoreception (smell and taste) and mechanoreception (touch) will have a significant selective advantage in an environment in which sight is not possible. For instance, the antennae and other appendages of crustaceans are loaded with nerves and sensory structures—the appendages of these animals tend to become long and spindly as they evolve within caves. This increase in surface area to body ratio allows the animals to achieve lowered metabolic costs, and increased sensory function.

The life that surrounds us in caves has produced remarkable adaptations for survival. It is my hope that you will develop a curiosity for these animals that will generate a lifetime of advocacy for their preservation. As a cave diver you understand better than most the connection between surface water and groundwater. And as a cave diver you are one of the few humans on Earth who will intimately know the life that exists beneath our feet. In a very real way these animals act as biological indicators for the health of these systems and thus act as the proverbial canary in the coal mine for the quality of our groundwater. Enjoy the thrill of exploration, and appreciate the life around you!

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Figure legends:

Figure 1: Photos in Figures 1-4 are all focused on the anterior (front) of the animals. This photo is of the amphipod *Stygobromus chamberlaini*, which lives in open water ponds. Notice the oval shaped eye—each ommatidium contains pigment for absorbing light. Photo courtesy of Eric Lazo-Wasem.

Figure 2: The amphipods in Figures 2-4 were all collected from caves in Jackson County Florida. This amphipod has eyes with some ommatidia missing pigment. Photo courtesy of Eric Lazo-Wasem

Figure 3: Amphipod eye with many ommatidia missing pigment and many ommatidia missing. Photo courtesy of Eric Lazo-Wasem

Figure 4: No vestige of this amphipod's eye remains. Photo courtesy of Eric Lazo-Wasem

Figure 5: An example of convergent evolution of troglomorphic features in a vertebrate-- the Georgia blind salamander, *Eurycea wallacei*. Photo courtesy of Bonnie Stine

UPON THE SALE OF CATHEDRAL SINK

By Al Clements

As Property Manager and a Board member of the NSS-CDS, I have a unique perspective to offer the membership *upon the sale of Cathedral Sink*.

Most of you know the NSS-CDS is involved in a law suit regarding School Sink that has been a continuing mess for several years. What you may not realize is that our attorney must respond to all questions and proceedings from all parties as they arise. As a result our attorney fees have escalated to a point that the NSS-CDS is in financial trouble, having used all of the organizations savings and we have not yet gone to trial.

The request for financial help from the membership has been posted on the NSS-CDS website, Facebook page and quarterly journal as well as being mentioned at every workshop. As a result we have received donations from our members which have helped but were not nearly enough to cover the on-going expenses.
I am a man of faith and I do believe in the power of prayer. I continued to pray for guidance in this time of mental and financial stress. Every Board meeting was focused on the fact that our attorney fees were continuing to add up but the means to pay them were not being balanced with the debt. The Board of Directors and the membership want to thank every contributor that has paid into the Legal Fund.

After days of meetings by your Board of Directors and hours of each member calling other members to suggest and discuss how to handle our financial problem, we were coming up with no viable remedy and even bigger attorney fees were looming with the impending February 2016 court date. The begging of donations from members seemed to be a futile cause; the debt was just too much to keep up with and was going to get worse.

Feeling the frustration and the stress, I decided to relax with a cave dive. I drove to Ginnie Springs and suited up at 6:00 AM for a solo dive. After a long dive I drove to Cave Country Dive Shop in High Springs for a cave fill. The owners were there and, as usual, welcomed me with a friendly smile and some good conversation. I never mentioned anything about the financial condition of the NSS-CDS, but out of the blue Jon Bernot, an owner, said, “If you ever want to sell Cathedral Sink I would be interested.” It took a moment for his words to fully register with me. I alone would not be the one who would nor could make the decision to, God forbid, SELL THE HOME PLACE OF SHECK EXLEY!

The truth is, the property had become overgrown with brush and the platform was fast becoming rotted. After meetings with our contractor and phone calls to different people with tractors and bush hogs, the truth was inevitable; we simply could not afford to keep it up. Cathedral Sink has not really been divable for 10 years. This fall was the first time that the vis was better than zero, with the best, at any place in the system, at about 15 feet. Also, because of the depth, the deco obligation is twice the bottom time; for every hour of bottom time there are two hours of deco. The fact is, this dive really does require using trimix and/or closed circuit which prevents many of our members from diving the site. The BoD closed Cathedral Sink to diving due to the conditions of the property and the visibility and line conditions in the cave. A team of exploration and conservation divers were permitted to dive it, but that was it, and they had to enter the system at Falmouth in order to reach Cathedral.

I say all of this to explain to you the position that your Board was facing.

I knew if I contacted the Board to see what they thought about the possibility of the sale of Cathedral and to tell them of the offer Jon had made, it would be a long and drawn out discussion and I was right. The feelings of the BoD members were really mixed though we all agreed that Sheck left the property to the NSS-CDS to protect and allow membership to continue to dive it.

Jon Bernot is on the permitted team that explores there, is repairing and replacing line and does conservation dives in the system. BoD members felt good about his offer to purchase the site; the offer was very fair and he was a local diver that was going to clean it up, repair the platform and stairs and allow qualified divers to dive it. After much discussion and consideration we voted unanimously to allow the property to be sold and Jon’s offer was accepted for consideration. It is impossible to explain to anyone how

painful it was for each Board member to have to vote yes to the sale of Sheck Exley's property, but the hard truth was that we either had to sell a piece of property that has not been readily dove for 10 years or keep it and lose the organization. Attorney fees must be paid and we had no other way to pay them.

The Board of Directors wanted to make this decision known to all members and Chairman Joe Citelli posted on the Cave Divers Forum and the NSS-CDS Facebook page the decision and reasoning for the sale. I, as well as all the members of the BoD, expected a mix of feelings and responses due to our decision, and within minutes of the post my e-mail and phone were being blasted with questions and opinions.

Suggestions were made to contact the state of Florida and the Suwannee River Management(SRWM) to see if they had any interest in the property. I contacted the Suwannee River Management but the problem was that being connected to the state of Florida, their guidelines were not favorable for us. In order to sell to SRWM one has to pay for an appraisal with one of their approved appraisers. The cost of the appraisal would be between $3,500.00 and $4,500.00. After the appraisal, SRWM would then contact Land Management to see if they had an interest in purchasing the property. If they said no we would be out the appraisal money and if they said yes the offer would then be 90% of the appraised value with no appraisal reimbursement. After doing the math the offer would be much less than the one we had already received.

After the post on the CDF and our Facebook page, the organization received a flurry of donations as the reality of having to sell this property was finally sinking into the minds of our members. In this case the reality was that we had to take responsible action or possibly lose our association. I am like most; I always feel that something will come along to keep us from disaster. I mentioned I was a man of faith, and after praying each night that the bickering and misunderstanding would end, another offer came in.

I received a PM on the Cave Divers Forum from a person called CJ who lives in another state. The strange thing was that no one I knew in the cave diving community had ever met or heard of this person. He said he was interested in purchasing the property and I told him that we had another offer and that I would not disclose the name or the amount of the offer. He agreed that is the way it should be and then also made a written offer accompanied by a good faith check. All of our correspondence was done by Email. I had not ever met him.

Forrest Wilson had a concern as to why a person from another state would want to purchase a piece of property that was basically worthless to anyone other than a family member of Sheck's. CJ told him exactly why he wanted to put a bid on the property. He had just finished reading *Caverns Measureless to Man* and felt a spiritual attachment to Sheck and, being a cave diver, was intrigued by his story. The very next day he was reading Cave Divers Forum and BINGO; there was Joe's message on the decision to sell. He consulted his family about making the offer and they were all in favor of his decision.

Ten days later the Board had their quarterly meeting and on the agenda was the sale of Cathedral Sink. I have no idea exactly how many members we had in the open meeting, but I know there were many. When Joe called on me to present the property report I started by reporting the number of divers we had in our owned systems. I was dreading having to be the one that was going to bring up the sale of Cathedral but I did. Questions were asked by the attending members and all of their questions were answered completely and they all seemed to be satisfied.

At the end of this meeting there was a closed session to vote on the award of Cathedral Sink. Again, we had to keep all parties confidential as we had promised.

All those reading this have an interest in Sheck and the values of the NSS-CDS and it is impossible for me or anyone else to satisfy everyone. The award was an answer of prayer. Prayer is awesome!

The feeling of the Board was that they would have liked a local person who dove the system to own it and they all personally knew and have done business with Jon and the parties from High Springs. This is where it got really tough. Both CJ and Jon stated that they would make repairs as well as clean up and memorialize the site. Both were going to allow qualified divers to dive the site and both offered the NSS-CDS first right of refusal if it were ever to be sold. I read and reread both offers; they were similar but different in many ways.

The award went to CJ. While his offer was for more money, money was only one of the considerations.

THE DIFFERENCE

- CJ is not just repairing the platform or steps; he is replacing them along with building an overhead above the platform to keep the sun and leaves off of it.
- He is paying all closing costs.
- And, in the event of his death, his family will inherit the property. But, if they feel it is more than they wish to deal with, the property will be GIVEN BACK to the NSS-CDS.

WIN, WIN, WIN FOR THE NSS-CDS

1. Legal fees can be paid to date for 2015

2. The property will be cleaned and memorialized

3. The NSS-CDS is no longer liable

4. New platform and steps will be installed

5. Members will still be allowed to dive it

6. The property is protected from future sale

7. We have a new friend in CJ

8. Prayer was answered. Sheck would be very happy with the way everything turned out.

I want to thank all our members for their thoughts, concerns, suggestions and encouragement with this tough decision. I also want to thank our Board for listening and their thoughtfulness and concerns throughout this ordeal. I know we all lost sleep over this but in the end it worked out well.

Continued from page 5

and the platform statements of the candidates. Every ballot must contain a serial number...
9. At the next meeting of the board, the candidates who received the highest total number of votes from the voting membership shall be seated in place of the outgoing directors for their new terms as directors. These members must be current NSS-CDS members before being seated. At this meeting, outgoing board members shall turn over all NSS-CDS materials and files in their possession to the newly elected board.

G. Meetings of the Board of Directors
3. Open Meetings. ...Any NSS-CDS or CDS member may address the Board of Directors at any open meeting. It is requested but not required that the ~~NSS-CDS~~ member submit his/her request in writing to the Chairman to place on the agenda.

Article V: Committees
A. The Chair shall appoint, with board approval, NSS-CDS or CDS members in good standing to serve as committee coordinators. The Chair may also appoint other NSS-CDS or CDS members in good standing to serve on the committees ...
Article VII: Amendments
These Bylaws may be modified or amended by approval of two-thirds (2/3) of the members who return ballots in the election on the matter, provided at least one-fifth (1/5) of the combined total NSS-CDS and CDS membership in good standing has cast ballots in the election on the matter. ...

Your board also considered two other proposals. One intended to impose lifetime limits on board participation and the other was to create a non-voting Board Member Emeritus position.

The lifetime limits proposal was rejected by a 4- 3 vote and the Board Member Emeritus position was passed by a 4-3 vote.

To create the Board Member Emeritus position we must amend our bylaws:

> Motion to amend By-Laws and create Board Member Emeritus:
>
> One former board member who has served six years may be elected to the non-voting position of Board Member Emeritus. (S)he would be eligible to speak and sit in on all meetings, including closed sessions and would also be put on the regular election ballot and voted in by the membership using the same criteria as is required for any other board position. There will be no limit on the number of years a person can serve in this capacity.

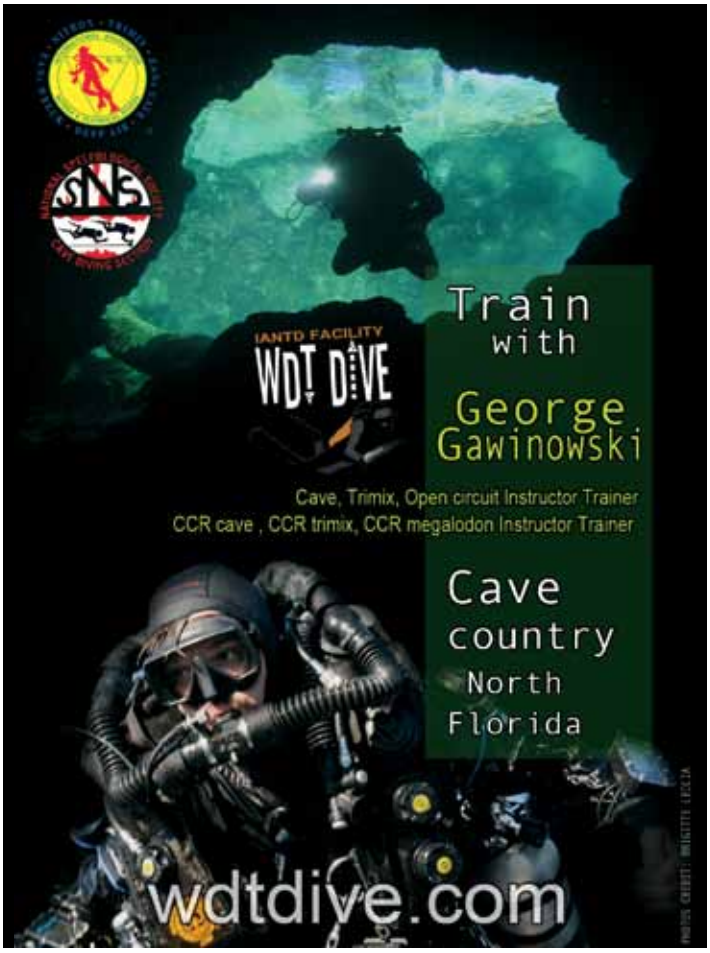
These items will be on the ballot in the upcoming election cycle so you, the membership can ultimately decide. As a Board, we recognize both our custodial duty and our responsibility to respond to membership wants and needs as part of our mission.As members it is up to you to decide the paths you wish your organization to follow. It is our goal to appeal to as broad a base as possible in order to expand our numbers and to protect the NSSCDS. We believe these will be positive changes in that direction.

For these reasons we ask that you give these proposals careful consideration. Please voice your opinions and vote. As always, we welcome your questions and suggestions but above all we need your input.

Other items of interest to you are that we have retained the services of Howard and Megan Ehrenberg (Duck Diver LLC) to re-do our website and turn it into something the membership will enjoy. Among other things there will be photo galleries and a You Tube video channel incorporated into the new design.

Thank you on behalf of your board,

Joe Citelli, Chairman



Cathedral Renewed

By: Ken Sallot

> ***"But before turning around to survey out, I couldn't resist spending a few seconds squinting on into the vast unexplored distance, trying to fathom the grandeur of this most measureless of caverns. Maybe it just goes on forever."***
> ***– Sheck Exley, Caverns Measureless to Man***

Stop. I want you to put this article down. Yes, you read that right. I want you to walk over to your bookshelf and grab your copy of *Caverns Measureless to Man*. I want you to re-read chapter 11of that book right now. I mean it.

You can come back to this article when you're done.

Did you read it? Good, let's continue.

Cathedral Canyon.

That name fuels the imagination and inspires us to dream about man's quest to explore the unknown. It is a trunk passage, seemingly without end. It makes us think about Sheck Exley, his drive, and his amazing accomplishments. But more importantly, it makes us dream about endless possibilities.

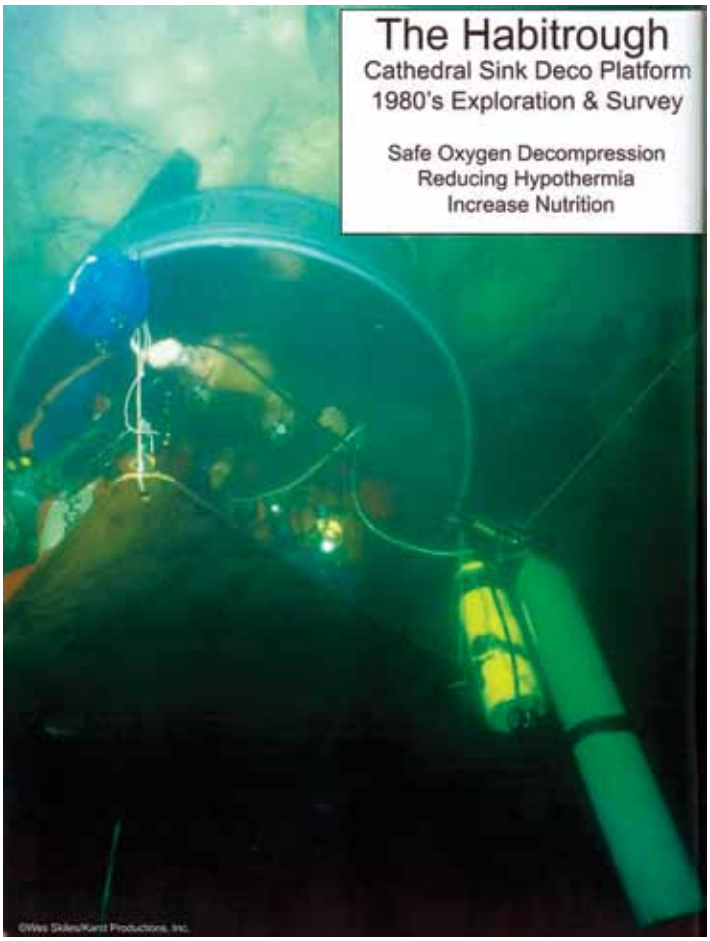
Background

Cathedral is located off of US-90, a few miles west of Live Oak, Florida. It is the furthest known karst window upstream in the Ellaville/Falmouth/Cathedral system. Heading upstream from Cathedral, the cave goes for miles, wandering in a southeast trajectory and passing under a number of farms. Heading downstream from Cathedral, the system travels west, passing through several openings before finally dumping its contents into the Suwannee River at Ellaville spring.

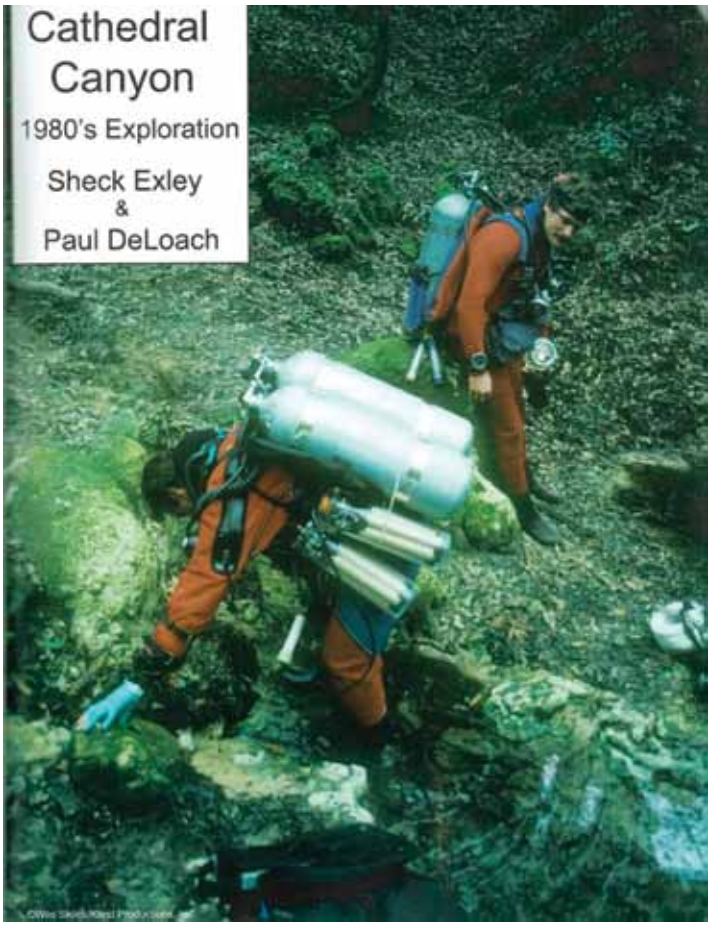
It has also been connected via dye tracing to the Edwards / Suwanacoochee system.

A Brief History of Previous Exploration

Cathedral, located approximately ½ mile southeast of Falmouth Springs, was first discovered by John Harper and Randy Hylton. What they discovered was a cave sixty feet wide and one hundred and fifty feet deep, with white walls but very few side passages.



Diver decompresses in the habitat



Sheck Exley and Paul DeLoach prepare to explore Cathedral

In the early Seventies, Sheck Exley was introduced to Cathedral and it quickly became a place of fascination for him. By 1980, the system had been explored 3,500' past the entrance with no end in sight, but continued exploration was halted due to a loss of access after the sale of the parcel to a private landowner.

Sheck was approached to purchase the land surrounding Cathedral in 1986, and with the transfer of property, exploration resumed. By 1987, the amount of line in Cathedral had doubled. But a new challenge presented itself because 6,000' from the entrance, Cathedral went deeper.

Other projects drew Sheck's attention in 1987, and further exploration of the system was suspended until 1990. When Sheck began focusing on Cathedral again, he extended the line from 6,800' to almost 10,000' in a matter of just two months.

The system continued to deliver on its promise, and Sheck made plans for a big push dive in December. His goal was to explore the unknown, and hopefully establish a new world record in the process. Finally, on December 16, 1990, Sheck Exley explored Cathedral to a distance of 10,939', and set that world record.

The logistics of his record setting dive boggle the mind. He conducted the dive on open circuit, using fourteen stage bottles to provide enough breathing gas for the push. Just the effort to install that many stage bottles throughout the cave was an incredible achievement by itself.

To take advantage of a warm water system that had been installed for decompression, he conducted those dives in a wetsuit. Imagine riding a scooter for two miles into a cave and two miles out, in a wetsuit. BRRRR!

The best battery technology available in 1990 meant primary lights were limited to a 2.5 hour burn time. For the extended bottom times Sheck planned to encounter, he had to use multiple canisters. Each of those canister lights were several pounds negatively buoyant, and quite a bit bigger than modern lights.

And the visibility in the system had dropped to 15' due to a decline in water quality over the years. Oh, did I forget to mention that the best light technology that was available in 1990 was nowhere near as bright as our modern backup lights?

But he did it, and he set a world record in the process.

After his untimely death in 1994, ownership of the Cathedral tract was transferred to the NSS-CDS and access was limited. Although divers with adequate experience and training were allowed to dive the site, exploration was expressly forbidden. In 2003, a small group of people, including Todd Leonard and Bjarne Knudsen, were granted permission to continue exploration in Cathedral. Some of the challenges they discovered included limited visibility; aside from the poor water quality, the walls had become stained by a type of dark-colored bacteria that swallowed up all light. Based on the depth and poor visibility, Todd and Bjarne decided it would be safest to dive the system on trimix. After a few long-range open-circuit dives they also implemented the use of RB80 rebreathers.

During the first few months of access in 2003, they familiarized themselves with the system, replaced sections of the guideline, and established protocols to enable further exploration. In October 2003, their team shined a light on the end of Exley's line for the first time in over a decade, and pushed past it to 11,500'. They followed the main conduit, and in July 2004 they explored the cave out to a distance of 17,119'. They tied off their line at the top of a debris pile, but could see that the cave still went, seemingly forever.

The hurricanes that hit the area in the fall of 2004 limited the ability to continue exploration, but Todd and Bjarne planned on returning in 2005. Several safety bottle depots were installed in October 2005, however life intervened and continued exploration in Cathedral stopped. For more

information on their exploration, please see the article that was published in Quest Magazine, Spring 2005.

Years of drought followed, and by 2012 the flow of the system where it exited Falmouth Spring had been reduced to a trickle. What had once been a first magnitude spring was now reduced to nothing more than a stagnant mud puddle.

May 2012, Falmouth Spring was a mud puddle

After years of neglect, the permanent guideline had become buried under sand in several spots. Citing concerns for diver safety, the NSS-CDS announced a decision to close access to Cathedral Sink in 2014. Their specific concerns included the state of the permanent guideline, the poor visibility, and the depth of the system.

It seemed as if the dark recesses of Cathedral might remain without light indefinitely.

2015, A New Beginning

The summer rains of 2014 and 2015 set records in North Florida. These rains meant that the hydrostatic head of many springs were fully charged, and in many places, water was flowing for the first time in years. In September 2015, underwater explorer and photographer Mark Long posted a photo of Falmouth Springs on Facebook. The photo showed green but relatively clear conditions.
For the first time in years, it appeared that the system was diveable.

Several members of Karst Underwater Research (KUR) saw the image and spoke about doing a recon dive in the system to verify what they saw in the photo. Derek Ferguson, Jef Frank and Ted McCoy did the first recon dive and discovered that although the visibility in the system was decent enough to dive, the permanent guideline was buried in many spots. They began patching the line, and installed 500' of patches on their way towards Aquarius Sink. Other members of KUR patched the line past Aquarius the very next day.

A KUR diver is preparing to install a new guideline

A concerted effort was begun to patch and repair the line towards Cathedral, and over the subsequent two weeks, several members worked on this task. A procedure was developed where two teams would go in at once, with each team taking turns patching the line, leapfrogging the other team in the process. Using this method, KUR divers patched nearly 1,500' of line in one dive, going 1,000' past Cathedral. But to their dismay, they discovered several of the patches were buried during their exit.

After this disappointment, KUR divers re-grouped and decided that the best option would be to install a new

guideline, but this time securing it with silt stakes. Over the next two weekends, KUR divers installed 7,000' of new line and safety bottle depots, beginning from the entrance in Falmouth and ending approximately 4,500' past Cathedral. When they were finished, there were safety bottle depots 2,300' and 4,500' from Cathedral and a brand new continuous guideline taking them there.

It was agreed upon that for the most part, the existing guideline beyond 4,500' was in good shape. Installation of new line, except where absolutely necessary, would not be needed. It was also agreed that safety bottle depots would be established every 2,000', and plans were made to deliver new safety bottles to 6,000' and 8,000'.

Throughout October the team began the process of familiarizing themselves with the system, moving safety bottles into the cave, removing safety bottles that had been left in for a decade, and fixing the decompression habitat that would provide much needed warmth and comfort for the final stages of decompression.

During this time several challenges of diving in this system were identified, and procedures to mitigate them were developed. Some of these challenges include:

- Drastic variations in depth. The system varies in depth from as deep as 185 ffw to as shallow as 60 ffw. These changes in depth put divers at risk of violating their decompression ceiling, or suffering from a squeeze or block. The constant change in depth also causes divers to go through precious inflation and diluent gas due to wing/drysuit/loop volume changes.

- Visibility that never exceeds 20', in cave passages that are frequently 60' wide. Divers traveling on DPV's at speeds of 150 ft/min. have to remain constantly alert and focused to avoid running into obstacles, losing the guideline, becoming entangled, or getting separated from their dive team.

- Extended bottom times and profiles outside of "normal" decompression limits. Several members had dives with bottom times ranging from 3-4 hours, and total run-times upwards of 8 hours. It was anticipated that any new exploration would involve bottom times upwards of six hours, with run-times exceeding twelve hours.

Realizing that the goals of both organizations are aligned, in 2014 KUR established a partnership with the WKPP. KUR members decided to leverage this relationship and sought advice from members of the WKPP, drawing upon the WKPP's experience with long range exploration. In addition to logistical guidance, several members of the WKPP became involved with the project and began assisting on project dives.

By Mid-November safety bottle depots were established as far as 10,500' from the entrance, and plans for new exploration were finalized.

Jon Bernot and Charlie Roberson on the morning of November 22nd

On Saturday, November 21st, KUR divers Ted McCoy and Ken Sallot carried additional safety bottles and staged scooters at 8,000' for the push team. On Sunday, November 22nd, Jon Bernot and Charlie Roberson pushed to the end of Todd and Bjarne's line, and explored an additional 563' on a 300 minute bottom time.

Not only did they verify that the cave continued to go, but they also proved that the techniques that had been developed for long range exploration in this system worked.

After the success of the first push, the team decided to take a weekend off for Thanksgiving, but everyone was eager to return on December 5th and 6th. This time Jon and Charlie added an additional 1,107' of line, pushing the exploration of Cathedral out to 18,789'. Their bottom time for this dive was 6 hours at an average depth of 133 ffw, with an in-water time that was in excess of 12 hours.

In his dive report for the December 6th push dive, Charlie Roberson wrote:

When we reached the end of Todd Leonard and Bjarne Knudsen's line at 17,119' Jon started surveying the 563' we put in two weeks ago while I scouted the walls for potential leads. While Jon was finishing the survey and putting away his survey notes, I spotted an obvious lead just to the right of our tie off. It's amazing how easy it is to miss stuff in this system. After going in about ten feet to verify it wasn't a false lead, I tied in and started adding line with Jon behind me doing wraps. The passage was somewhat smaller with several low areas that required a bit of finesse. I turned my xk1 down to 2-3 and just slowly motored while adding line. This allowed me to look around a bit before committing to a particular direction. I was a

bit discouraged by the smaller size passage and every room seemed like it was coming to an end but it just kept going. I was convinced we were on a side passage but after about 1,000' it opened back up.

As the reel ended I noticed our time was 196 mins. We both wanted to keep our bottom time around 360 mins. and had determined that we needed to turn and start surveying out at around 180 mins. We were also a little apprehensive about surveying back through the low sections so we (Jon really) resisted the temptation to pull out another reel. The survey went fairly smoothly other than Jon's compass breaking. We were using the two compass method that KUR divers had perfected on previous dives. This method is very fast with two practiced divers and gives a high degree of accuracy since one person's job is nothing but going to the next station and dialing in the azimuth. The second person counts knots and records all the data. This became a little slower with only one compass but still worked well.

The survey and exit commute went quicker than expected. Our bottom time was 353 mins. at an average depth of 133 ffw. The same average depth as the last dive. My total dive time was 750 mins. with a max depth of 184 ffw. The last three hours of deco was spent in the habitat followed by a slow 30 min. ascent to the surface.

Lilly Bernot shows an empty reel while her daddy decompresses

While exploration is an important part of this project, KUR members are also interested in identifying the problems that have plagued this system. Dive reports from the 1970s indicate that the system used to have periods of visibility that exceeded 80', but now 20' of visibility is considered a good day.

What happened to the source of water and the cave? What can possibly be degrading the visibility?

Although a Google Earth KML file based on survey data showed the system passed under several agricultural spray fields, the survey had never been properly verified. KUR member Andy Pitkin began work on creating a new KML file, using Sheck's handwritten survey notes, but this time correcting for the errors caused by over forty years of magnetic drift and deviation.

With the new KML file in hand, the team decided they were ready to attempt a cave radio location to verify the survey and identify exactly where the water flowed. Partners from the SRWMD and Florida A&M were contacted, and a dive plan was formulated for December 12th.

A scientist analyzes water samples

On this science day, the plan was for Jon Bernot and Ted McCoy to deploy cave radio beacons at 6,000' and 10,200' in the cave, collect water samples at both locations, and carry a datasonde for water quality data. From the surface, Andy Pitkin would lead a group consisting of Derek Ferguson, Charlie Roberson, Ken Sallot, and Tara Rodgers through locating the two radio beacons.

At its most basic level, cave survey is collected by counting knots on exploration guideline that are spaced every 10', and taking depth and azimuth readings whenever the passage changes direction. The accuracy of this method can be thrown off by minor errors either in the azimuth readings, or the distance between the knots. While these errors won't cause a dramatic problem on surveys consisting of only a few hundred feet, the team hoped to validate the survey at a distance in excess of two miles from the entrance.

Would Sheck's survey prove to be accurate? Or were there small errors that would add up to big problems two miles away?

Jon and Ted departed on time, and the surface crew proceeded to the site of the first radio location. Exactly fifty minutes after Jon and Ted left, the surface crew picked up the signal indicating that the beacon had been turned on. Within ten minutes they identified the location of the beacon, smack dab in the middle of an agricultural spray-field.

Howard Smith hands Ted McCoy a radio beacon

Andy Pitkin zeroes in on a radio beacon

Amazingly, this first beacon was only off from the predicted location by a few feet!

About an hour later, the surface crew picked up the signal from the second beacon. Once again, the survey was true, and the signal was located less than eighty feet from where it was predicted!

That's an error rate of less than one percent, which is truly amazing when you are talking about the primitive tools used to conduct a survey underwater, over a distance of two miles!

With the end of the line sitting almost four miles from the entrance, Sheck's majestic cavern, measureless to man, continues. KUR divers will continue to try and unlock the secrets this system has to offer in 2016. When asked about what they think awaits them at the end of the line, Jon and Charlie have said, "Maybe it just goes on forever."

This project would not be possible without the support of several people. Individuals that have contributed their time, effort, and energy into this project include Jon Bernot, Kristi Bernot, Derek Ferguson, Jef Frank, Ted McCoy, Casey McKinlay, Andy Pitkin, Charlie Roberson, Tara Rodgers, Ken Sallot, Bob Schulte, Howard Smith, Meredith Tanguay, Bob Beckner, Joel Clark, David Doolette, James Draker, AJ Gonzales, Jack Leeth, Alan Pelstring and many more.

Material support for this project has been provided by Cave Country Dive Shop, Dive Rite, and D3 Diving/Suex.

Research partnerships have been conducted with Florida A&M University and the Suwannee River Water Management District (SRWMD).

Permits have been issued to KUR from both the SRWMD and the NSS-CDS.

The first 11,000' of Cathedral Canyon overlaid on Google Earth

Since the last UWS publication, Julie Ralph received her Abe Davis Award and Anthony J. Gonzales received Since the last UWS publication, Nick Andrianov, Catherine Harold, Frank Kaatz, and Joseph Sachs have received her Abe Davis Award. Elisha Gibson and Marc "Slim" Leonard have received his Henry Nicholson Award. I know many others are progressing towards their own award and I look forward to sharing the news of their accomplishment with you. These are wonderful accomplishments that exhibit dedication and efforts put forward by the divers.

Today Roger Williams will share his story leading to the verge of completing his Abe Davis, which he is slated to complete by the time you are reading this article. Like many of us can relate to, Roger's story is that of a diver that does not live in Florida's cave country or the cenotes of Tulum, but still has a passion for cave diving and the desire to keep up skills.

For those of you at the Cavern level of certification, keep an eye out on the CDS webpage, Facebook page, and the forums on the announcement of an opportunity to win a free Intro/Basic cave class from one of our esteemed NSS-CDS instructors.

Would you like to share your story or submit your application for your Award? Email me at abedavis@nsscds.org or mail them to me at PO Box 150096 Fort Worth, TX 76108 Awards applications can be found at http://nsscds.org/NSSCDSAwards

Dive Safe,
Eric Parks
NSS-CDS Awards Coordinator

I thought cave diving was a stupid idea and that the people who did it were obviously dangerously imbalanced, possibly psychotic. But my friend from the dive shop didn't let up.

"So if you don't like the cavern class you can just spend a couple of days relaxing."

"I can relax here."

"But it's nice down there. You'll like it," I found this claim questionable. I'm a city person and descriptions of High Springs sounded very unlike my natural habitat.

"Look," my buddy finally landed a shot right to my Achilles heel, "At the very least the class will make you a better diver."

A few weeks (and a few embarrassing class days) later I was hovering over the sign in Upper Orange Grove, a newly certified cavern diver. Today I know exactly what that passage really looks like, but even now, in my memory of that instant, the tunnel past the sign was colossal enough to swallow subways as easily as it swallowed my instructor's HID. It looked so simple, so accessible, yet so far away; I knew right away that I wasn't finished and that it was going to be a lot of work. It bit me hard, right then and there.

When I got home from Florida I immediately ordered a drysuit and the hardware to band together my tanks. I was going to be a cave diver.

Years passed. Life kept getting in the way of completing the rest of the classes, though eventually I did finish. In the meantime I got involved in Northeast wreck diving and (without speaking ill of some of the practices up here) worked to keep my habits and techniques true to

cave training and philosophies. I don't remember when I stopped logging dives altogether, but I did…

…except for cave dives. I was determined to earn my Abe Davis and for that I needed a log.

I am ashamed to say that I am not there yet. Seven years since I finished my cave class, and I still haven't accumulated just 100 safe cave dives. Living in New York I am stuck being one of those vacation cave divers savoring only one or two weeks in Florida and/or Tulum a year. While I am a bit embarrassed that it has been taking a while, I don't really see it as a terrible shortcoming.

Paced out over that time I have gotten to meet, to know and to dive with some really incredible people. I've made lifelong friends, and had some amazing experiences. I've grown comfortable and at home among the cave community (and even in cave country, as un-city-like as it is). So while it's been slow going, it has been fun all the way along.

And of course, there are the caves themselves. Delicately striated clay banks. Chocolaty, velvet sheets of undisturbed silt. Vast rooms full of decorations so fine and so fragile it breaks your heart to take it all in. You're reading a cave diving magazine; I'm sure I don't have to outline for you the hundreds of moments I was so awestruck by the perfect, timeless beauty of the cave. You have all had plenty of them yourselves; those instants you couldn't possibly put into words and times you couldn't possibly imagine spending your life doing anything else.

One of the most thrilling things about my lamentably infrequent visits to where the caves are was quite unexpected, but it was also the thing that I think I was most looking for since the very start: in that area and in those places I am never the best diver in the room.

I am lucky enough to have made my living as a diver for some years. For a while I was a full-time instructor and boat crew in Hawaii, now I work as an Aquarium Dive Safety Officer. I am around diving all the time, and have taken lots of classes including trimix and a couple of rebreathers. I have spent a lot of time in the water at work and with that time has come comfort and skill. So I am, more often than not, the most highly trained and the most experienced diver. I don't like it.

I like when I am cooking dinner in the kitchen at Cathy's and I can hear conversation from the other room where some of the best divers in the world are chatting over what they're training, teaching, or working on. I like bumping into the luminaries of the cave diving world I know primarily through Facebook or CDF and talking to them in person about some of the things they've got cooking and how they're doing it. Most of all I like when I get to go diving with people who are so much better at it than me that they're not even in a different league… it might as well be considered a completely different sport.

Ours is an unusual sport. Our superstars are not trading card heroes, they are our friends and our dive buddies. The only competitor is ourselves (and possibly inert gas), and the only victory is coming back safe and sound after an enjoyable dive. There is no obvious reward for being better at it, and certainly no gain in being better at it than anyone else: no medals, no championships or scholarships. No cave diver will ever be on a Wheaties box. The only real reward for pushing to be better is being better.

So little by painfully little I continue to pursue being a cave diver one day, one logged dive at a time. And I keep on the same pursuit that I started at my friend's suggestion that it will make me a better diver.

This might be the year. My wife and I will be in Florida over Christmas/New Years. I am hoping to make my 100th safe cave dive on the last day of 2015.

I look forward to logging it; I'm even enjoying trying to decide which cave it is going to be. But, whether it happens in a few weeks or not until March (when we go back) is irrelevant. 100 is just a number in a book.

Don't get me wrong, I am going to be proud as a peacock that I finally achieved a years-long goal. But I hold absolutely no illusions that once my application is approved I suddenly become 100 times the diver I was the day before. I am counting on it not being so!

The Abe Davis Award represents, to me, a level of competency in growth and development more than a level of ability. That is, it is representative of a commitment to the sport and a commitment to becoming a better diver more than proof that you ARE a better diver.

That is what I appreciate and what I strive for. That is why I go through the ritual of logging my cave dives and why I will continue to do so, through 101 and beyond. To do so is to respect the efforts not just I have made, but the efforts that fellow cavers make in their growth, too. It respects all those who are so much better than me and all the time and effort they've committed to be so.

I don't want to be the best diver; I just want to be a better diver.

Besides, some years from now I will need a log to get my application for the Nicholson award… that one actually does mean you're the best, right?

~~ Roger Williams

2015 Midwest Workshop

The NSS-CDS wishes to thank all of the speakers, sponsors, donors and workers who helped make this workshop a success.

A special thank you to the Workshop Chairman, Mark Wenner, for all of his time and effort. Job well done!

2016 NSS-CDS ELECTIONS

In accordance with the By-Laws of the NSS-CDS, elections will be held for the following NSS-CDS Board of Director positions.

Sylvester (TJ) Muller
Joe Tegg
Forrest Wilson

The timeline of elections and voting below is presented to membership for their information.

February 7, 2016 is the last date for lor nominations to be submitted.
February 13th Nominating committee submits a list of candidates
February 27th Platform statements due
March 12th Ballots get mailed
May 7th Last day to receive ballots that can count toward the election
May14th Candidates notified
May 21st Member's meeting

Article III: Board of Directors
B. Qualifications. Directors and candidates must be current members of the NSS-CDS in good standing for at least one (1) year prior to being nominated for a directorship. The Training Director and candidates for that directorship must also be current and active NSS-CDS instructors in good standing.

Please send all nominations to Kelly Jessop at:

kjessop@bellsouth.net

There will also be voting for proposed by-law changes.

Current NSS-CDS Instructor Listing

Jim Wyatt, Training Director, trainingdirector@nsscds.org

Jon Bernot 378 Basic
High Springs, Florida, USA
jbernot@me.com

Emanuela Bertoni Cave
Quinta Roo, MX
pachacavediving.com
elabertoni@gmail.com

Brent Booth 241 Cave
High Springs, Florida, USA
Stage, Sidemount, DPV, Overhead Nitrox, Sponsor
bcb241@aol.com

Peter Butt 186 Cave
High Springs, Florida, USA
Stage
kes@atlantic.net

Juan Carlos Carrillo 342
Mexico DF, Mexico
Cave, Sidemount
undergrounddiving@gmail.com

Ricardo Castillo Cave
Mexico DF, Mexico
www,rangoextendido,com

Andrey Chivilev 377 Cave
Tyumen, Russia
Chivilev65@mail.ru

Mel Clark 373 Cave
Mill Creek, Washington USA
CCR Cave, DPV
scubagrunt@gmail.com

Bill Dunn 170 Cave
Conyers Georgia, USA
Stage, Sidemount, DPV, Training Committee
bill.dunn7@gmail.com

Van Fleming 296 Cave
Kernersville NC, USA
DPV
scubiedo@aol.com

Steve Forman 106 Cave
Winter Haven, Florida, USA
Stage, DPV, Training Committee
Scubaetc@AOL.com

Mark Fowler 379 Cave
Wicomico, Virginia, USA
CCR Cave
Dolfinmsdt1@aol.com
www.markfowlerscuba.com

Georges Gawinowski 369
Live Oak, Florida, USA
CCR Cave, Stage, Sponsor
Info@wdtdive.com
www.cavedivertraining.com

Carl Griffing 372 Cave
Houston, Texas, USA
www.caveandtechdiving.com
carl@caveandtechdiving.com

Harry Gust 337 Cave
Tek-Center MX
info@cave-diving-mexico.com
www.cave-diving-mexico.com

Jill Heinerth 340 Cave
High Springs, Florida, USA
CCR Cave, Survey, Stage, Sidemount, DPV
www.IntoThePlanet.com

Paul Heinerth 165 Cave
Hudson, Florida, USA
CCR Cave, Stage, Sidemount, DPV, Sponsor, TrainingCommittee
www.scubawest.net

Ken Hill 326 Cave
Lakeland, Florida, USA
kenhill@tampabay.rr.com

Lamar Hires 191 Cave
Lake City, Florida, USA
CCR Cave, Sidemount, Stage, Sponsor
Lamar@diverite.com
www.diverite.com

Falk Hoffman 313 Cave
Henstedt-Ulzburg, Germany
Deep Cave
info@specialdiver.de

Tom Illiffe 156 Cave
Galveston, Texas, USA
Sidemount
www.cavebiology.com

TJ Johnson 368 Cave
Orlando, Florida, USA
Survey, Stage, DPV, Deep Cave, Sidemount, Sponsor
www.dayo.com
TJ@dayo.com

John Jones 321 Cave
Lake City Florida, USA
Stage, DPV, Survey, Deep Cave, CCR Cave, Sponsor, Sidemount, Training Committee
www.jpjscuba.com

Brian Kakuk 366 Cave
Abaco Bahamas
Stage, Survey, Sidemount
www.bahamasunderground.com
bahamacave@aol.com

Elena Kryzhanovskaya 382 Cave
St. Petersburg, Russia
elena.spb@gmail.com

Adam Korytko 364 Cave
Tulum, Quintana Roo, MX
www.caveheaven.com
adam@caveheaven.com

Maxim Kuznetsov 352 Cave
Gainesville, Florida, USA
DPV, Stage, Sidemount, Sponsor
www.vodolaz.com
max@vodolaz.com

Jeff Loflin 360 Cave
Bonifay, Florida, USA
Sidemount, Stage, DPV, Overhead Nitrox, Deep Cave, Sponsor, Training Committee
www.JeffLoflin.com

Mal Maloney 374 Cave
Bermuda Dunes, CAL, USA
Sidemount
Mal@divetri.com

Bill McDermott 266 Cave
Nags Head, NC, USA
Stage, Sidemount, DPV, Survey, Cartography, Sponsor
www.obxdive.com

Jim McMichael 376 Basic
Brooksville, Florida, USA
jmcmichael67@gmail.com

Steve Mortell 356 Cave
Broomfield, CO, USA
Stage
Steve.Mortell@padi.com

Tom Mount 123 Cave
Lake City, Florida, USA
Stage, DPV, Deep, CCR, Sponsor, Sidemount, Survey
Tom@iantd.com

Robert Neto 370 Cave
Greenwood, Florida, USA Stage, Sidemount, DPV, Survey
www.chipoladivers.com
rob@chipoladivers.com

Michael O'Leary 335 Cave
Lake City, Florida, USA
Survey, Stage
www.cavediving.org

Bill Oestreich 253 Cave
Crystal River, Florida, USA
CCR Cave, DPV, Sidemount, Sponsor
www.birdsunderwater.com

Conrad Pfeifer 287 Cave
Mars, PA, USA
conrad2@zoominternet.net

Daniel Patterson 353 Cave
High Springs, Florida, USA Stage, DPV, Deep Cave,
Sponsor, Training Committee
www.danpattersondiving.com

Luis Augusto Pedro 318
Sao Paulo, Brasil
Cave CCR Cave
info@iantdbrasil.com.br

Mark Pergrem 319 Cave
Dallas, Georgia USA
www.atlantatechnicaldivers.com
mpergrem@comcast.net

Bil Phillips 315 Cave
Tulum, Quintana Roo, MX
Stage, Sidemount, DPV, Survey, Cartography, Sponsor
www.speleotech.com

Renee Power 383 Basic Cave
Altamonte Springs, FL
renee@divebydesign.com

Olivier Prats 384 Basic Cave
Q-Roo, Mexico
olivieroim@yahoo.com

Martin Robson 350 Cave
Somerset, UK
CCR Cave, Stage, DPV, Survey, Deep Cave, Overhead Nitrox, Sponsor, Sidemount
www.eau2.com
martin@eau2.com

Reggie Ross 286 Cave
Gainsville, Florida, USA
Stage, Sidemount, DPV, Sponsor, Training Committee
reggie@reggieross.com
www.ReggieRoss.com

Evgeny Runkov 371 Cave
Ekaterinburg, Russia
jekadiver@gmail.com

Luis Sanchez Cave
Mexico DF, Mexico
www,rangoextendido,com

Phillip Short 365 Cave
Bournemouth, UK
CCR Cave
www.philshorttechnical.com

Edd Sorenson 375 Cave
Marianna, Florida, USA
Sidemount, DPV
caveadventurers@hotmail.com
www.caveadventurers.com

Terrance Tysall 264, Cave
Orlando, Florida, USA
Sponsor, DPV, Sidemount, Survey, Stage
tntysall@gmail.com

Jim Wyatt 355 Cave
High Springs, Florida, USA
Deep Cave, Stage, DPV, CCR Cave, Sponsor, Training Chairman
Cave Dive Florida.com
trainingchairman@nsscds.org

German Yanez Mendoza,328 Cave
Cozumel, Q-Roo Mexico
Cartography, Sidemount, Stage, Overhead Nitrox
www.germanyanez.com
german@germanyanez.com

Cristina Zenato 325 Cave
Freeport, Grand Bahama
czenato@gmail.com

Cave Diving Section of the
National Speleological Society, Inc.
295 NW Commons Loop Suite 115-317
Lake City, FL 32055

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