

# Underwater Speleology

*Journal of the Cave Diving Section of the National Speleological Society*

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2016 NSS-CDS Workshop

*Volume 43 Number 2  
April/May/June 2016*

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## May 20-22



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Photographer: Michael Meckmann

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*“There are many ways of going forward, but only one way of standing still.”*

*~ Franklin D. Roosevelt ~*

We are making progress. Your BoD has spent the last year in preparation, both legally and financially, for the likely possibility of the School Sink law suit going to trial and a possible adverse judgment. All the while also working hard to upgrade and maintain all of our outdated computer programs and technology, as well as continuing to function as an organization. With an eleventh hour settlement of the lawsuit and the last of the legal bills paid, we can breathe a collective sigh of relief and move forward. A lot of work has been done in the background to streamline our processes and cut expenses while making upgrades and improvements to make our organization better, more efficient and bring new programs and events.

See The Chairman's column for more information but here is a quick run down on some of the things going on.

- The 2016 Workshop is underway and is shaping into our best one yet. Visit the workshop website at [www.cds2016.com/](http://www.cds2016.com/) for updates, speakers, scheduling and more.
- Tickets are \$40 in advance for members and \$50 at the door. They are \$50 in advance for non-members and \$60 at the door. **T-shirts are available only with an advance ticket purchase.** You can purchase tickets on Eventbrite at <https://www.eventbrite.com/e/nss-cds-2016-workshop-tickets-22808907055>
- Kiss Rebreathers has generously donated a Kiss GEM Sidekick rebreather which will be raffled off at the workshop. Visit the CDS store for your raffle tickets. <https://nsscds.org/shop/01-raffle-ticket-donation-kiss-gem-sidekick/>
- Limited edition etched 2016 NSS-CDS Workshop glasses are now available in the cds store. <https://nsscds.org/product-category/workshop-2016-custom-pint-glass/> When they are gone...they are gone
- There will also be a CPR instruction class available at the workshop. The cost is \$20.00 per person and you can sign up through the CDS store at <https://nsscds.org/shop/cpr-clinic-may-21-2016/>. This is instruction only and not a certification.

# notes

- Our new website is up and running, stop by and take a look. [www.nsscads.org](http://www.nsscads.org).
- The CDS will have a booth at Manatee Springs Day on March 19<sup>th</sup> providing community outreach and education.
- On April 9<sup>th</sup> the CDS will be participating in ECO Day at Madison Blue. There will be a project and work day, lunch and prizes. Please contact Al Clements at [property\\_manager@nsscads.org](mailto:property_manager@nsscads.org) for more information or to volunteer.
- On April 9<sup>th</sup> and 10<sup>th</sup> the CDS will be partnering with ADM and CBM to produce a public service announcement on the importance of proper cave diving training and equipment and the grim reaper sign.
- Plans are being made to attend DEMA 2016 in Las Vegas. For more information or to volunteer please contact Al Clements at [property\\_manager@nsscads.org](mailto:property_manager@nsscads.org)
- New items are in the store and more are coming! Visit the CDS store at <https://nsscads.org/shop/> and check out the new hats, CDS logo shirt and more.
- Keep an eye out in the CDS store for the new gear mats coming in April, as well as CDS logo mask straps and matted prints.
- Elections provided only two candidates for the three open BoD seats for the upcoming year. This leaves an open position on the BoD which will need to be filled. Members outside of the North Florida area as well as North Florida members are encouraged to apply.
- Two proposed by-law changes still need to be voted on by membership. One provides for an additional tier of membership as a CDS only member and the second creates a non-voting historian position to assist BoD members with organization history and past information. This is your organization and your voice counts. **This vote will be done electronically, so watch your email for ballots.**
- A Chairman is needed for the 2016 Midwest Workshop. Please contact [treasurer@nsscads.org](mailto:treasurer@nsscads.org) for information or to volunteer.
- Dont forget to support our sponsors and business affiliates!

Dive safe,

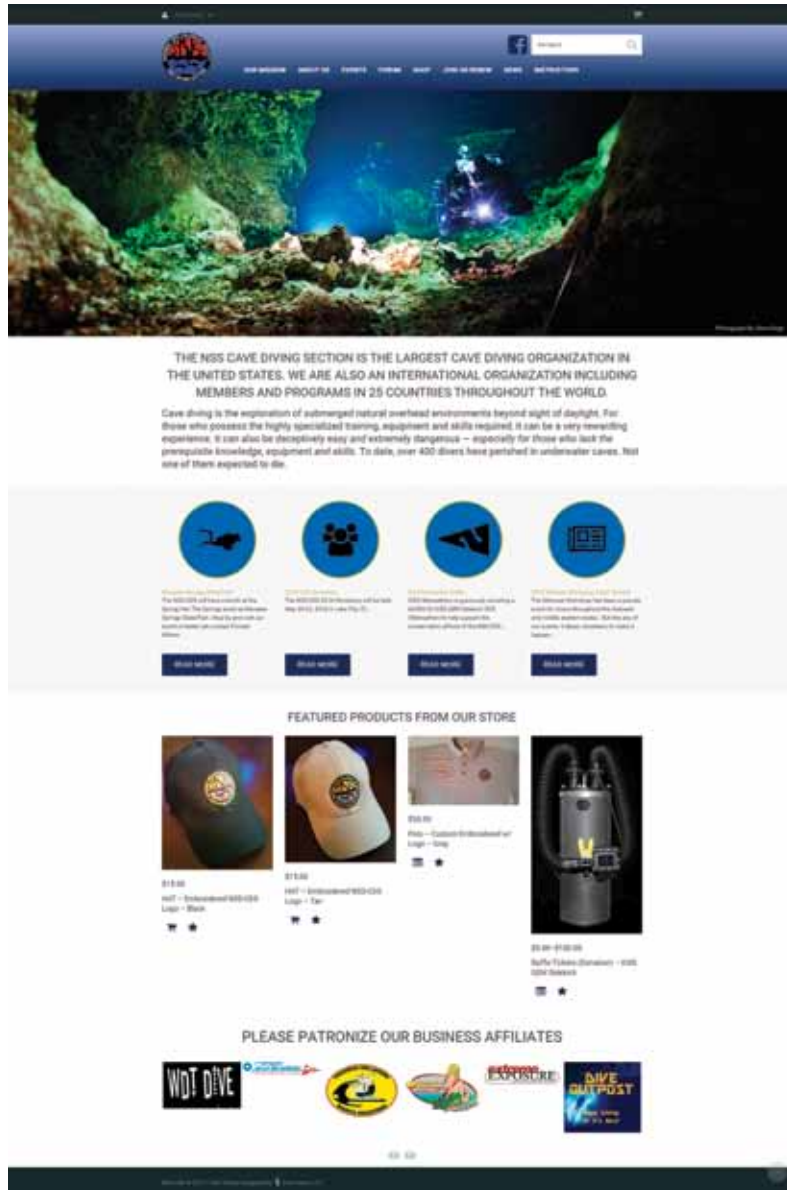
Cheryl

# IT'S HERE!

IT'S HERE! The new NSS-CDS website is up and running. It offers members more information and options, as well as being more user friendly. Some new additions are the events and news pages as well as a member forum and gallery.

Visit the site at [www.nsscads.org](http://www.nsscads.org) and see what events are coming up, renew your membership, read the latest news, shop the CDS store, share your cave diving photographs and join in a discussion on the new forums.

It is still a work in progress. If you have any difficulties with the site, comments or suggestions, please contact the webmaster at [webmaster@nsscads.org](mailto:webmaster@nsscads.org).



# from the Chairman

Joe Citelli

It's been a long, tiring road but the School Sink lawsuit is finally over. The insurance company for the co-defendants in the case, Dive One, settled with the plaintiffs. Part of the agreement was that the case against the NSS-CDS was to be dropped. In return the NSS-CDS agreed to not sue Dive One. There was also a nondisclosure agreement attached to the settlement. This is fairly typical for this type of situation and is a big relief for the NSS-CDS. Your Board is now free to expend its' time and energy on positive things.

Moving forward, one of the first items on our agenda is to ensure that the NSS-CDS will never be exposed to such a liability again. We are in the process of retaining legal counsel in order to guide us on how to structure the properties in such a way that no matter what happens, the NSS-CDS will never find itself in the situation it has been in for the past 8 years.

On a positive note, the new NSSCDS.org website is up and running. We have moved our web store into it and have discontinued using Big Commerce as our store provider. This will save us about \$700.00 per year and give us more flexibility with what we can do in and with the store. The new site also has a forum which will be available to members and non-members as well as a photo gallery for member use. It is our intention to create sub-forums as demand and needs dictate as part of our effort to encourage member involvement and participation.

We had five nominees for the three board member positions whose terms are up in May. Only two nominees submitted platform statements, and as such they are running unopposed. Therefore, there will be no need to hold an election to fill those positions. The nominees who submitted platform statements were our Vice Chair, TJ Muller and our Secretary, Forrest Wilson. These two incumbent Board members will remain on the Board and the third seat will be filled by an appointee. If any of you are interested in serving, please contact a board member.

The membership will still need to vote on the proposed amendments to the Constitution and the By Laws. They will be voted on via an email-online process. This too will save the NSS-CDS the expense and trouble of postage and printing in this and future elections.

The proposed amendments concern themselves with adding an additional tier of membership in the CDS which does not include a mandatory NSS membership

and the creation of a non-voting Board Member Emeritus position. To clarify any misconceptions, the NSS-CDS will remain just that, the NSS-CDS, a section of the NSS. This should in no way be construed as an effort to separate us from the NSS. It is simply a response to member commentary and part of an overall effort to listen. We believe membership should decide the path of their organization and their Board should follow that path. It is also part of an attempt to expand our numbers. As a Board we believe that membership in the NSS is worthwhile and we will continue to encourage members to join, but we also believe that people should be given the option to make their own choices.

The proposed Board Member Emeritus will be able to sit in on all meetings and offer the benefit of his or her experience to the newer board members. The non-voting status continues the Board with seven voting members and avoids a dead locked vote. As you can see from this year's elections, seven positions are difficult enough to fill. Whether you are for or against these amendments, we encourage you to vote and be heard.

As long as we are discussing elections and Boards, I'd like to mention that we have been holding many of our meetings on-line. The NSS-CDS is an international organization, and as such this Board would welcome members from other nations. Our online meetings make this very possible and practical. If you are a member from outside of the USA who would like to be more active in the NSS-CDS, please contact us. We full well realize that the NSS-CDS is not only about North Florida.

May 20 to 22 is the date for our annual Workshop or "Conference". Kiss Rebreathers has donated a Gem Sidekick SCR for the NSS-CDS to hold a raffle with. We would like to extend a very special thank you to Mike Young and Kiss for their generosity and support of the NSS-CDS. Tickets can be obtained at our on-line web store site <https://nsscads.org/product-category/workshop-2016-affle/>. We would also ask that as NSS-CDS members you support the businesses that support your organization. This year's event promises to be a great one. We hope that you will attend.

Going forward, be sure to check our new web site regularly and keep up on NSS-CDS news and events.

Joe Citelli, Chairman



*By: Brenda de Vries  
Photographer: Michael Meckmann*

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# Mine Diving: Kleinenbremen, Germany

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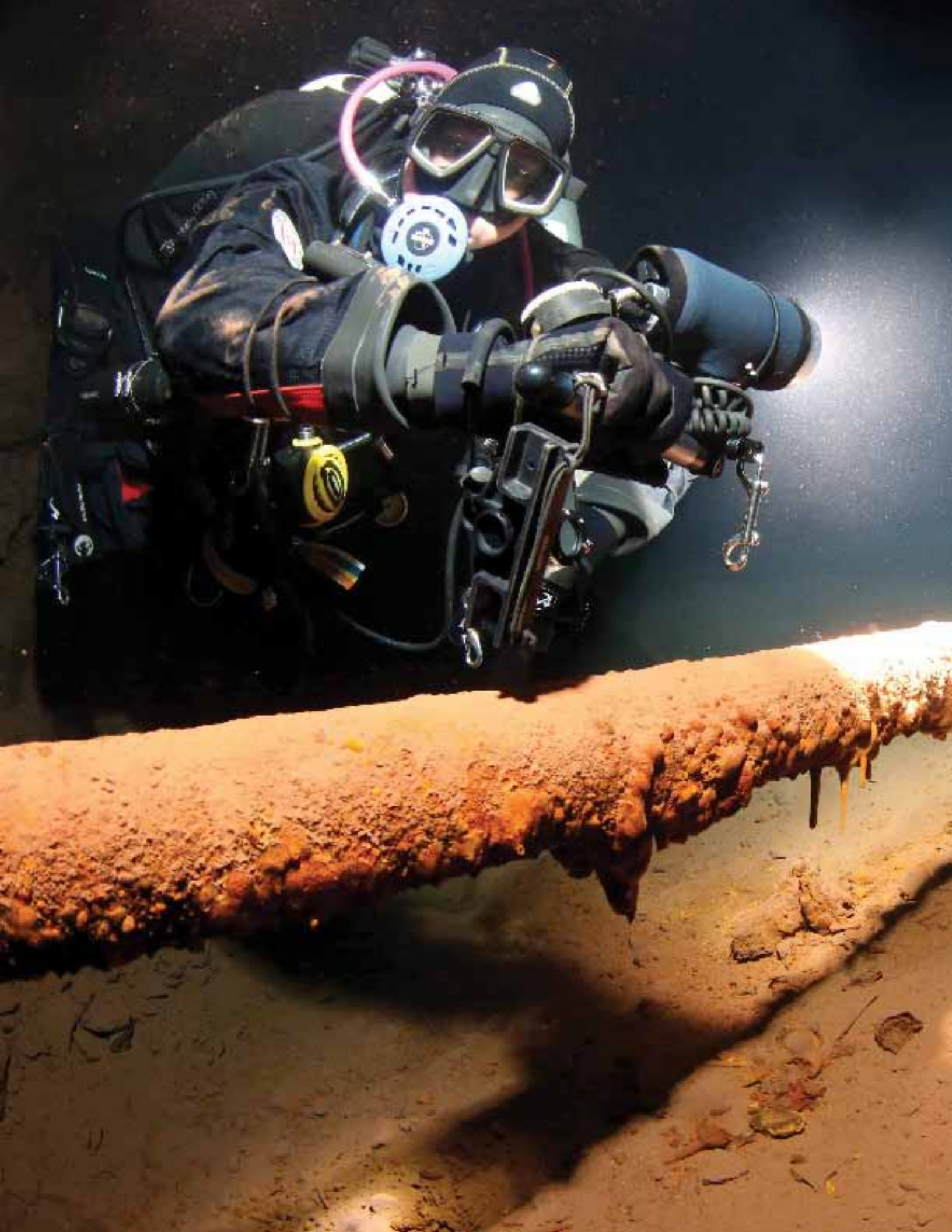
Recently, Michael Meckmann, Christian Ulitze and I had the luck to dive an old mine in Germany near Kleinenbremen.

Normally this is a recreational dive site that allows diving once a month. You enter the mine on a small train and there is a 'lake' you can dive and also a small area that can only be dived with a guide.

The site held a special event that allowed certified cave divers to dive the entire mine, not just the lake or guided dives, and we were able to go.

Due to the train schedule for transporting divers into the mine, we were allowed two dives of a maximum of 90 minutes. Some of the mine's tunnels were dived a few years ago and had lines in them, but most did not. This would be two dives with a lot of reel work, as we were asked to remove our lines upon exiting.

We started the day by loading all of our dive gear onto the train and then, wearing our dry suits and helmets, we rode the 800 meters (2625 ft) into the mine. There was a 200 meter (256 ft) walk down to the water, but since the mine is also a museum the walk was mostly stairs and nice pathways.





On the first dive we had to run all our own lines. This does make you go a little slower, but the dive was a lot of fun. Most of the time the water was clear, but because these tunnels are not dived frequently there is a lot of silt and percolation. Sadly, most of the old equipment was removed before the mine was flooded so there was not a lot of old machinery, but there were a lot of old pipes.

Both dives were to a maximum depth of 20 meters (66 ft).

Once home we had to wash our gear really well to avoid it being stained red from the mine's water. My wing still has some red parts, but I had a great day diving.

On the second dive we took a different tunnel where we found some old line in the main tunnel, but none in the side tunnels. The tunnels were not very narrow, although some of the holes were. A sudden total silt out made our decision to turn the dive and we swam part of the way out in zero viz. Again, a most enjoyable dive.

*Sport divers can register to dive this mine at [www.trevpunkt.de](http://www.trevpunkt.de) but be advised, all of 2016 is already booked.*



# Maramec Spring Park Beginnings

**BEYOND THE PANHANDLE**

Article and Photography: Jennifer Idol

Since 1826, Maramec Spring Park has attracted the attention of explorers and visitors because of its iron resource and natural beauty. The springs are home to a prolific trout hatchery operated by the Missouri Department of Conservation and an extensive cave system. They are part of an abundant web of springs found in Missouri, and are the fifth largest in the state.

William James owned and operated Maramec Spring Park as Maramec Iron Works until 1876. His granddaughter, Lucy Wortham James, acquired the property following his death. She then willed her estate in 1938 to create the James Foundation, a non-profit organization.

Lucy expressed her intent for the park, "As this is considered to be the most beautiful spot in Missouri, it

is my great hope that you will arrange that it may ever be in private, considerate control, and ever open to the enjoyment of the people."

The spring in Maramec Spring Park joins the Meramec River, which flows past Meramec State Park. Although Meramec is considered the correct spelling, the James Foundation kept the local spelling by Ozark residents. Meramec originates from an incorrectly spelled French word referencing the original Native American inhabitants.

A century later, Sheck Exley is believed to have explored the cave in Maramec Spring Park and set the first line. Parts of his line still lay in place, having withstood the

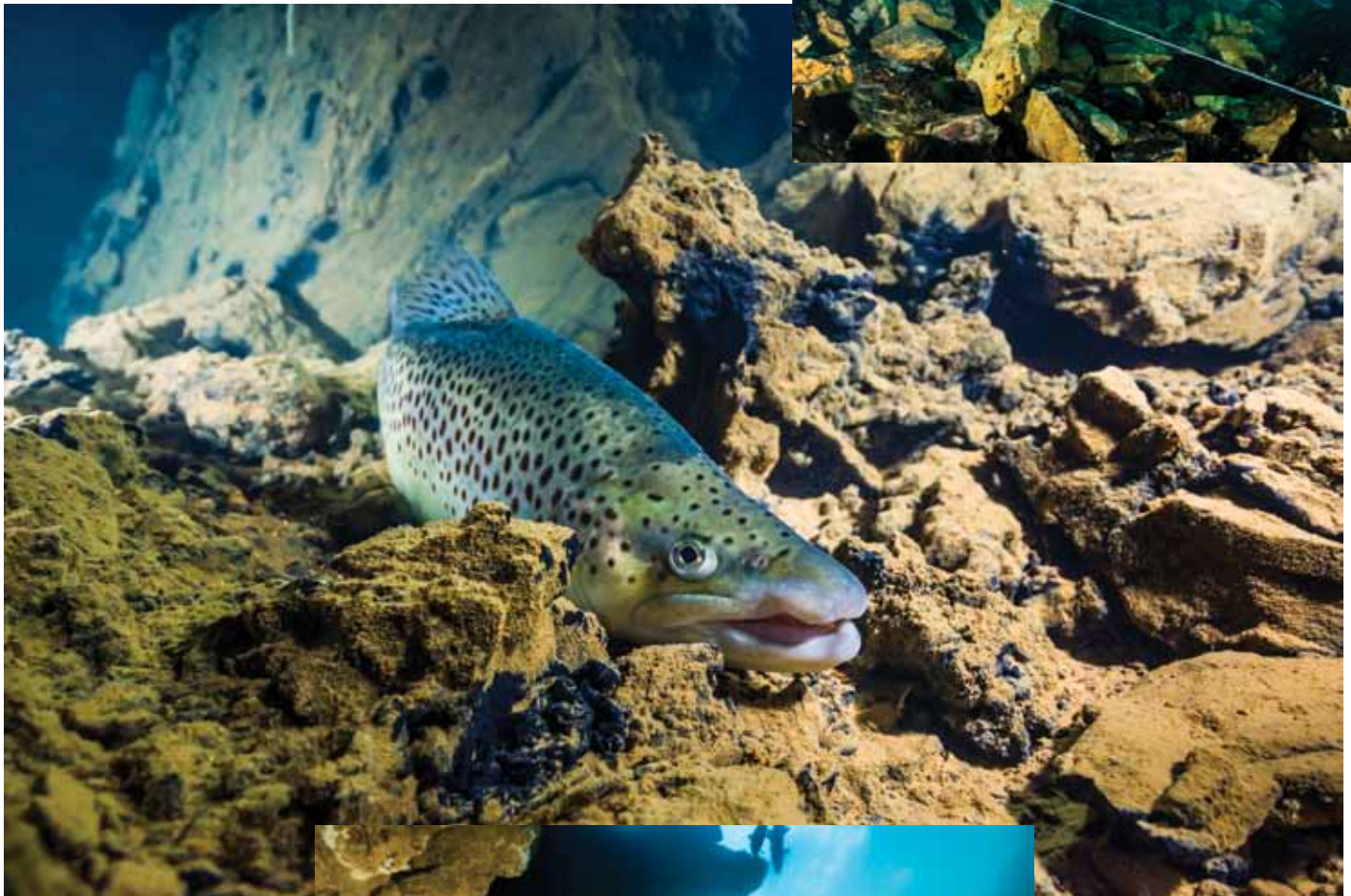


turbid springs for more than 40 years.

While Missouri caves can be beautiful destinations, they can also become fierce and violent as rains transform the blue water into brown murky boils. This fluctuating condition has limited cave exploration in Missouri to seasons with little rain, often in fall or winter when surface temperatures rival the 50°F water typical to these springs.

In 1996, a small number of divers began exploring Maramec Spring in St. James, Missouri. Under exclusive permit, they continued work at Maramec Spring, and by 1998 they formalized their dive activities to build a team that became the Ozark Cave Diving Alliance.

*Rainbow trout and brown trout meander through the cavern. The trout below entered the cave, one of more than 100,000 trout produced in the spring each year.*





*Above: Ben Perkins inspects the cylinders prepared for their dive.*

By 1999, they completed their initial survey work for the first official team project in Maramec Spring Park. Team member Karl Shreeves first shared the team activities publicly in his article, *The Big Chill*, featured in *Deep Tech*.

The OCDA reached a penetration distance of 3,083 feet to a depth of 209 feet in the year 2000. Equipment limited further exploration, but the survey and map data they provided to the foundation would prove helpful for the next decade to educate the public on how underground water systems connect. Nearby agricultural land can send chemicals into this fresh water system. By learning where caves lead, survey data can assist decision makers with informed development decisions.

Fourteen years later, the OCDA returned in 2014 to Maramec Springs to return to their first project and continue the work they began. The cave continues well past the end of the line. New developments in equipment will help the team reach greater distances with ever increased safety. They can stay warmer, travel





*Park Superintendent Mike Conaway photographed the spring activity following rains.*

farther and faster, and extend their gas limitations.

Cameras and video technology have also developed since they last explored the system, so they can now return to capture images of wildlife, cave features, and exploration. New photography and videography have been created by Jennifer Idol and Bob Koch from dives at the end of 2015. The videography Bob created will be featured in the museum on site.

When the OCDA last visited, team member Chris Hill described the cave as “so big in places that only the line was visible, even with everyone lighting the way.” As with other cave systems in the area, this is a karstic basin in

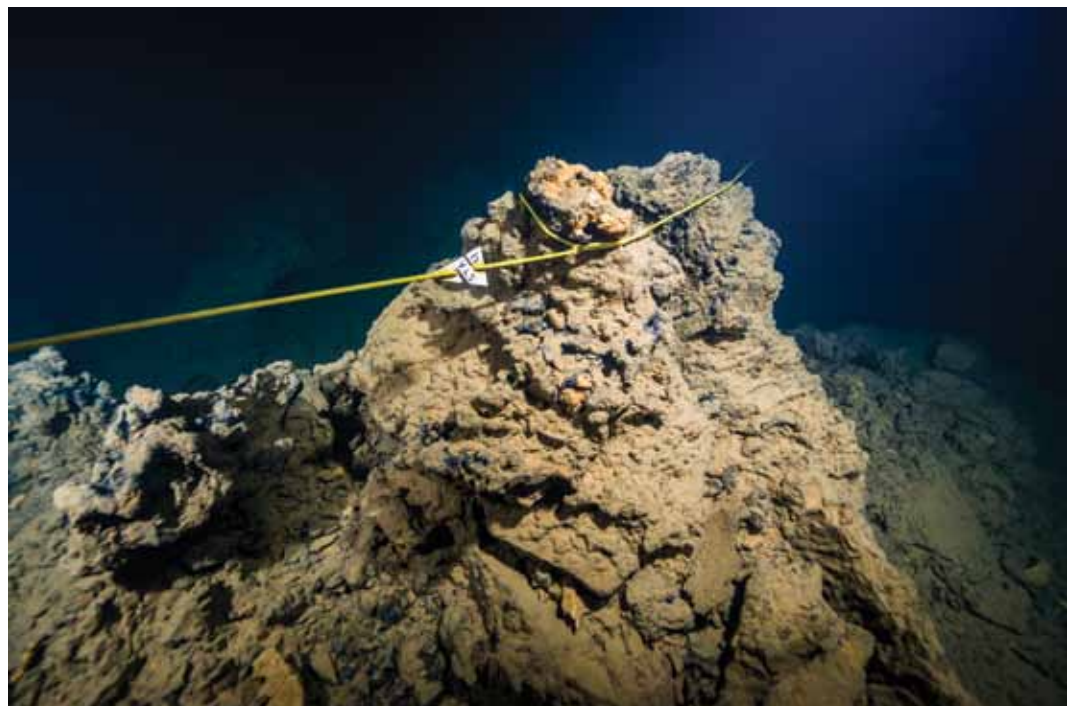
the Rolla area with a small entrance through which water rushes out. More than 100 million gallons of water flow from the spring daily.

Park Superintendent Mike Conaway helps visitors understand the importance of modern stresses on the spring systems and works with the team as they create new educational materials. The team continues learning about the cave ecology and survey data while they conduct their work.

As Mike says, “Our mission is to educate people on the importance of conserving our natural resources using

*Left: Christa Henderson smiles after her dive. The OCDA operates as a team, with each member responsible for different roles.*

*Right: Stations mark the exit and distance into the cave.*



Maramec Spring to teach about the importance of water quality.”

The water in Maramec Spring Park supports an ecosystem and surrounding forest area made of oak, hickory, and shortleaf pine trees. The park itself contains 1,860 acres and provides amenities and activities such as fishing from the hatchery. Trout season opens in March and closes in October.

Wildlife such as bald eagles visit the park each year. The springs clearly support an abundant ecosystem. The natural landscape measures to Lucy’s observations, especially in the fall when leaves glow with brilliant orange and red colors.

The OCDA plans to continue their activities in the cave system and hope to showcase the blind fish, blind crayfish, and additional survey data with this year’s season.

–Jennifer Idol is an underwater photographer and author of *An American Immersion*.



*Above: Konstantin Chartkov and David Moore enter the cave.*

*Below: OCDA members gathered for a photo after their 2015 dives.*



# Skills, Tips & Techniques

By Georges Gawinowski

## Get Ready to Train

After reading the chapter by Mr. Bill Oigarden in “Articles and Opinions” on the NSS/CDS book, I was daydreaming and visualizing what the training would have been like in the 1970’s.

Whether a Cavern, Intro-to-Cave, Apprentice or Full Cave diver, we all know that training is important in cave diving. We learned on our first day of Cavern class that training is one of the main elements to safe cave diving. But what happens between courses? Do we practice the techniques we learned? How do we prepare for our next course?

Allow me to give you some helpful advice on preparing for your next course...

After completing a course you are in a relaxed mood and happy with what you have learned. Keep this positive attitude, it will help you get ready and focus on your next new and exciting objective.

### Keep learning

Once we have learned new skills it is time to think about how we will apply this new knowledge in our diving experiences.

Sometimes, during a class, we feel the training pace is intensive as we jump from one skill to the next, from one technique to another, from one cave system to another cave system. Due to that rush -which I am sure we all have experienced during our cave courses- we must mentally re-center ourselves in order to keep fresh our mind with all the information received during training.

Once relaxed and rested after a good class, we can now keep learning and make it our own experience by:

- Carefully reviewing our notes taken during training.
- Re-familiarize ourselves with the information listed on the NSS/CDS Workbook and cave or cavern manuals.

- Read cave diving oriented books and watch videos, NSS/CDS has plenty of pedagogical material on their website.
- Become a member of the NSS-CDS or remember to renew membership which will help you stay updated.
- Participate in workshops organized by the NSS and the NSS-CDS where professional instructors or explorers share great information on a variety of subjects.

### Training is important

- It is essential to keep your training alive, practicing basic skills taught by your instructors. If you live far from a cave system, practice in the ocean or jump in a lake, quarry or pool. It is not hard to find water, so jump in and have fun.
- Keep working on your equipment configuration.
- Review skills you can work on land before your in-water practice. Line management is a good example. Deploy your line and work on tie-ins and line placement so that it becomes second nature to you.
- Practice in-water checks on every dive, even if you do not dive a cave. It will keep your technique alive.
- Keep the cave diver swimming position all the times. I always tell my students: “Once you become a cave diver you are cave diver for life.” What I mean by this is that when you jump in the water you maintain your cave diving body postures and swimming techniques, even if you are not diving an overhead environment.
- Practice emergency scenario drills with you buddies.

### Learning from our peers

We learn so much from other fellow cave instructors or accomplished cave divers by watching, listening and questioning them. I love to take time to listen to conversations of older and experienced cave divers. How was the environment before? What type of equipment did

Continued on page 28

# off to the side.....

By Rob Neto

## JUST WING IT

There are three basic types of sidemount rigs present on the market today, classified by their wing shape. The horseshoe wing, donut or 360 wing and the trapezoid or full back wing (or some variation of it). These wings have been designed with particular functions in mind, and while these functions do tend to address the purposes they are focused on, they can sometimes present other, unintended issues that can be even more problematic than the original issue.

Let's look at the similarities between the three wing styles. All the wings are designed with the larger area of the air cell positioned toward the feet. In sidemount configuration, with the cylinders being positioned closer to the feet, divers tend to be more foot heavy, so manufacturers have designed wings with this in mind in an attempt to keep the diver in a horizontal position throughout the dive. There are issues with this but that's a different article.

When you look at the wings you'll notice that with all three the lower area of the air cell is wider than the upper area. When the wing is fully inflated more lift will be in this area and cause more positive buoyancy toward the feet. While in theory this should work, one issue is that hardly anyone dives with a fully inflated wing, at least not for the entire dive. With less than full capacity the gas will migrate to the highest point of the wing and remain there because gas rises in water. Most of us dive with our heads slightly higher than our bodies so we can see where we're going. This means the gas in the cell will settle near the shoulders, not in the opposite end of the wing. The exception is with the trapezoid-shaped wing. With that wing the gas tends to migrate to the upper center of the wing and create a bulge. If the wing has baffles this effect

will be minimized but not completely eliminated.

The design of many horseshoe and donut wings tries to account for this by having the bungees that hold the cylinder valves up in the armpits routed over the wing, in effect trapping air below the shoulders. However, the bungees are usually positioned about  $\frac{1}{4}$  of the way down from the top and still allow gas to move around in the lower  $\frac{3}{4}$  area of the air cell. The gas will typically settle



Top left: Horseshoe wing  
Top right: Doughnut wing  
Bottom left: Trapezoid wing  
Center on next page: Full wing  
Bottom left next page: (KDS) Knee drop syndrome with a stage  
Bottom right next page: (KDS) Knee drop syndrome

in the middle area of the cell rather than the bottom, also creating bulges.

Now what happens if the gas can somehow be kept in the lower area of the cell? Now we have to examine how the wing is mounted onto the harness. Most horseshoe and donut winged rigs are set up so the harness is positioned on top of the wing so it can help hold the wing down. The shoulder straps route over the top of the wing and the lower part of the wing is either secured to the waist strap (horseshoe) or positioned under the butt plate (donut wing). For the donut wings this presents another issue.

Because the lower, larger area of the donut wing is positioned underneath the butt plate, where the cylinders are attached, the cylinder position is affected by the amount of gas in the wing. At the beginning of the dive, when more gas is required in the wing to make up for the weight of the gas in the cylinders, the butt plate will be higher because the wing is pushing it up. As the diver breathes down the gas in the cylinders and as much lift is not required, gas is expelled from the wing and the butt plate gets closer to the body. This results in the cylinders only being in perfectly horizontal trim during a small portion of the dive.

This may not be that big of a deal for most divers because they might not have that much of a difference in the amount of gas that gets put into the wing. However, some wings have been designed with a much larger cell area on the bottom, and the difference between an empty wing and a fully inflated wing can be as much as 4-5 inches/10-12.5 cm! So this is definitely something to pay attention to.

What can also end up happening as you progress through your dive is that as you lose the weight of the gas in your cylinders, those cylinders become bottom light (toward the feet). The gas in the cell is still migrating toward the bottom and now it ends up pulling the diver's legs up higher. This happens because we set up our sidemount rigs so the cylinders, which have the highest percentage of concentrated mass of the kit, are what stay horizontal. So when the bottoms of the cylinders rise, the cylinders shift, causing the body of the diver to adjust in response to that. So now the cylinders are still horizontal and the diver becomes tilted head-up.



With the donut wings an additional issue comes up which has come to be known as Knee Drop Syndrome (KDS). In response to the donut wing being more positive at the bottom, divers are dropping their knees to compensate and try to maintain a horizontal position in the water. Just visit Facebook or YouTube and browse through sidemount photos and videos. It won't be long before you find several examples of KDS. This is not an issue with the horseshoe or trapezoid wings because the butt plate position is not affected by the amount of gas in those wings.

One thing that is very apparent with the photo of the diver with a stage cylinder is how the wing affects the trim of the cylinders. The diver is using my method of top-mounting a stage cylinder. Because the stage is clipped onto a D ring on the front of the waist, in addition to keeping the stage cylinder from rising it also keeps the sidemount cylinder trimmed out by pushing it down. The right sidemount cylinder doesn't have a stage cylinder doing this so the wing is raising the butt plate up and pushing the sidemount cylinder out of trim. If the butt plate was not affected by gas in the wing the cylinder would not change position.

So how do we address KDS without changing rigs? One way is to set up your rig so you will need to use a very minimal amount of gas in your wing. The less gas in the wing, the less likely the butt plate will be affected.

You can also use your dry suit for buoyancy; however, too much gas in the suit is not desirable. If neither of these things work then it might be time to look at another style rig. As cave divers we should always seek to maintain a horizontal body and cylinder position to not only look good, but more importantly, to minimize impact on the cave. This is especially important as you venture into smaller, siltier caves.



# MILESTONES

Since the last UWS publication, Luke Alcorn, Matthew Coultas, Michael Lynch, and Gabriele Paparo have received their Abe Davis Award.

MichaelAngelo Gagliardi and Daehag Kim have received their Henry Nicholson Award.

I know many others are progressing towards their own awards, 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.

Please take time to congratulate them the next time you see them.

Abe Davis Award Certificates will be presented at the May Workshop. Get your award application in before May 1, 2016 to ensure your award is available for presentation.

Would you like to share your story or submit your application for your Award? Email me at [abedavis@nsscads.org](mailto:abedavis@nsscads.org) or mail them to me at PO Box 150096 Fort Worth, TX 76108 Awards applications can be found at <http://nsscads.org/NSSCADSAwards>

Dive Safe,

Eric Parks  
NSS-CDS Awards Coordinator

FYI

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

# MILESTONES

Today Curt Szuberla will share his story of when he completed his 100<sup>th</sup> dive just a little over a year ago.

Abe Davis Milestone Story  
Curt Szuberla, Dive #100  
28 December 2014

Sitting on the steps of Peacock I after the dive, I smiled and thought about the past 100 minutes spent swimming underneath the grounds of Wes Skiles Peacock Springs State Park. My buddy for the afternoon, Julie, climbed out of the water herself and asked, “So how much cave experience do you have, Curt?” Smiling a little, “Well...as a matter of fact, that was my 100th cave dive.” The few other divers on the deck turned around when they heard that and I received a nice round of congratulations. I’d actually not even met Julie until a couple of hours prior, while my friend Chris was prepping for a cavern class with Paul. Frankly, I’d planned on doing my “Abe Davis” dive solo that afternoon over at Cow. The prospect of some company in a cave is seldom a bad idea, so when Paul introduced us a new dive plan was hatched. Julie turned out to be an excellent diver and buddy, so my milestone dive was thoroughly enjoyable.

Back at the Outpost, upon hearing I’d just completed #100, a different Paul asked me what we’d done for the dive. After describing what was for him a run-of-the-mill dive plan, he said, “Aw, your 100th dive is supposed to be something special!” I didn’t have to think much before replying, “Every cave dive is special for me.” Driving home the next night I thought for a bit about how my attitude toward cave diving had changed since that first swim up the Olsen Line during my Intro course. I guess back then I probably did think that my hundredth dive would have to be something epic – or that I’d at least swim it with a favorite buddy, like Jack or Ricky. Perhaps now I’m more relaxed (not to say complacent) about what I want to get out of any particular cave dive – they are, indeed, all very special dives.

A few days later I was able to swim with Ricky after all (#101 and #102), and along some lines I’d never seen before at Ginnie. As for Jack, my most memorable dive of any type is still that one offshore with him( #50) in zero visibility and twice broken lines – thanks for the excellent training, Paul! I think that living in Alaska only enhances my sense of wonder when I do get the chance to follow a line in a Florida cave system – a simple weekend cave dive involves a pretty long drive for me! Put another way, I feel lucky just to be diving in a cave, any cave. So diving with a brand new partner and seeing some of Peacock that I hadn’t ventured into before was a perfect way to celebrate my 100th safe cave dive. The few times I am able to get together with Jack for dives I’ll ask him what he wants to do. Invariably, his reply goes something like this: “As long as it’s a continuous guideline and thirds, I’m game for anything.” Sounds like a plan to me.

# We Are Stronger Than Me

From The Conservation Chair: Michael Angelo Gagliardi

## Archiving Our Cave Systems

Cave conservation is an underpinning of NSS-CDS' philosophy. However, we can't conserve cave systems without knowing what's in them and why they are there. I would like to tell you about new efforts in this area and especially to ask for your help.

The National Speleological Society-Cave Diving Section (NSS-CDS) owns several underwater caves in Florida. These systems, as well as several others, deserve to be archived with fauna surveys, water quality sampling, and physical documentation. I have taken on the responsibility for heading up this effort.

Heading a committee of one is, well, rather lonely. I wanted a group of people who I could bounce ideas off of and get honest answers, but I also wanted people who could put forth new ideas in a private forum. To do this, I created a closed Conservation Advisory Group on Facebook. Members include Dr. Tara Rodgers, Dr. Jason Gulley, Chip Peterson, Kelly Jessop, Barbara Dwyer and others. I also created The NSS-CDS Conservation Open Group as a public forum for all cave divers.

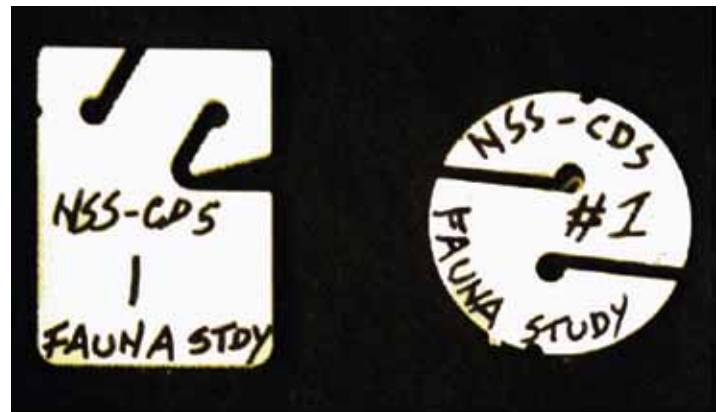
Using ideas generated over a three-month period, I proposed a cave system archiving program to the NSS-CDS Board of Directors. This focuses on CDS-owned properties, such as Cow Springs, as well as sites on private land with relatively low diver traffic, and the Devil's System, which has the highest diver traffic. The program will collect data in four ways, including:

### **Recording the systems' oral histories.**

We will begin by finding the stories of these cave systems, including the area's history, stories or legends associated with the spring or sinkhole, as well as established facts. We'll describe and document how cave divers explored these systems. By learning the past, we'll conserve our future.

### **Conducting periodic fauna counts.**

Using proven fauna count methods, the committee will perform systematic fauna counts to document biological trends. In a given cave, for example, we'd designate a 1000' area that is split into 100' sections. Each month, a team of two or three divers would swim the cave and count the fauna in each section. If you come across survey station markers like those pictured below, feel free to look but please don't touch. We wish to thank Dive Rite for donating the square survey markers.



### **Obtaining water quality sensor equipment.**

Divers will carry sensor packages, attached similarly to the way we carry stage bottles, while swimming through systems conducting fauna counts. As the diver swims, water flows over the sensor and records dissolved oxygen, water temperature, depth, and conductivity. Provided this is successful, we could offer these units to cave explorers. As they record their survey points, we record water quality. We are in the process of writing grants to fund the sensor purchases and Barbara Dwyer will head up the grant writing process. We are also running a dona-

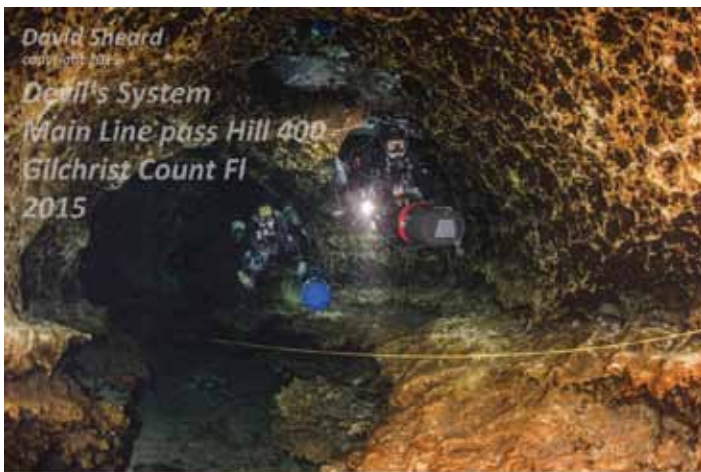
tion program for funding through the CDS online store. Donations to the CDS are tax deductible.

We are currently looking at two types of gear, the Hydrolab and Hobo sensors. The Hydrolab is an excellent sensor platform but costs about \$8000. The second option is to purchase HoBo sensors individually and build our own sensor platform. This would provide all the data of the Hydrolab except for pH. The cost would be \$3100 and include calibration and maintenance fluids, as well as full computer download. We could purchase nearly three HoBos for the cost of each Hydrolab, which would allow us to monitor more systems and expand archiving to caves in other states.

Once we have data, we can identify areas of interest and concern and begin water sampling for clinical analysis. Lab analysis is a powerful tool for water protection but it is costly. The sensors will help narrow specific areas of interest.

### **Surveying using sequential cave photographs.**

Cave divers have photographed these systems since the early 1980's and before. We propose to create an on-line library archive of these photos and all other available data. Viewers will be able to pull up a cave system (Devil's, for example) and in one folder be able to view photos of that system (the Cornflakes, for instance). The images will be in chronological order and watermarked with the photographer's name, copyright, system's name, name of tunnel or formation, county, state and date.



After archiving these old photos, we will recruit photographers to do annual photo surveys of the systems. This will allow us to evaluate any changes and to determine whether the change was natural or caused by diver damage. In the latter instance, we would need to figure out how best to prevent future damage. For instance, the photographic record shows where the

Cornflakes once were (many newer cave divers have no real idea), when they began to disappear, and perhaps how they disappeared.

We cannot bring back the Cornflakes, but perhaps we can educate enough divers to prevent destruction of other landmarks. Adding new photos each year builds history and knowledge. Hopefully this will allow us as a community to catch problems before a formation of beauty disappears forever.

The Board of Directors has agreed to create a conservation section on the new NSS-CDS website, [www.nsscds.org](http://www.nsscds.org). This section will be our cave systems library. Cave divers and others will be able to find oral, written, and photographic histories of our underwater caves, as well as fauna counts and water quality reports. Any NSS-CDS member (or the public) will be able to click a tab and access this information easily. We will also report on restoration work and other conservation efforts, such as calls for site cleanups.

### ***We are stronger than me...***

You may have seen these words as my motto for my time as Conservation Chair. To me, it means that if I attempt this alone or with the small group we have now, it will fail. If we think of ourselves in the singular during this project, it will fail. If we become one and take on this challenge together, we will succeed. We will need more volunteers. Divers who will be trained to do the counts and photographers to do the photo surveying. People to organize the stories and people to organize the people will also be important. The best data in the world will mean little if we fail to inspire others with our love of the caves we dive. The first thing is to love the caves and to care about the community of cave divers. When others see this in action, more divers will begin to care about the caves and about each other. At that point, anything is possible.

I would like to thank the NSS-CDS Conservation Advisory Board, including Dr. Tara Rodger, Dr. Jason Gulley, Chip Peterson, Barbara J Dwyer, Kelly Jessop, Bill Harrison, Carl Griffin, Pete Butt, Tom Morris, Germán Yañez, Jeff Rouse, Jill Heinerth, Brian Kakuk, Dr. Mike Thomas, Al Clements, TJ Muller, Nelly Mikhael Williams, Tracy Niesent, Stacy Dreher, Bjorn Loftis, Jo Shaper, and the many others who have contributed time and effort.

*If you wish to make a donation towards our conservation efforts, please visit the CDS store at:*

*<https://nsscds.org/product-category/donations/>*



# A Quick Trip To Mexico

By: Eric Parks

Back in the fall I found a pretty good airfare to Cancun and went ahead and picked up a ticket for myself. I didn't need the usual large condo and began searching for a new place to stay. I decided on Casa Mango. It is owned by a young Italian family and advertised as a jungle getaway in the small village of Macario Gomez, a two tope town about fifteen minutes west of Tulum on the Coba Road. The cabanas looked great, the food looked incredible and I thought it might be a good scouting expedition for our next family trip.

Unfortunately no cabanas were available, but they did have an upstairs room for rent in the main house. Did I really want to stay in a room in the house of a young couple and their child? My brain was telling me not to do it, but a deeper more convincing voice was telling me otherwise.

I rechecked my rental car rates and found that Fox Rental Car had dropped rates significantly from a whopping seven dollars per day down to one dollar for a Volkswagen Jetta look-alike. Having rented from Fox on many occasions, I thought that this must be my lucky day so I went ahead and booked the room.

Arriving at Casa Mango in the evening, I was warmly greeted by Andoni, one of the owners, and offered a glass of wine and assistance with my bags to my room. I was eager to see what was on the menu for the night and went outside to the multi-level palapa that served as their restaurant seating. I decided on homemade tagliatelle pasta with shrimp and zucchini, and while Angelica (the wife) started preparing the meal, Andoni sat and chatted with me about the area and things to do. He told me about the property and the sounds of "real Mexico" I would hear when I awoke in the morning; monkeys, parrots, a crazy donkey, toucan and other birds from the area. Did he say crazy donkey? Before I could say anything, my dinner arrived and I let it go and enjoyed my meal. Mmmm it was delicious.

After dinner I spent time unloading my suit case and preparing for my dives the next morning. Once done, I headed out to my huge private balcony to relax and look at the stars for a while and listen to the sounds of the jungle. At 10 o'clock I guess all the critters turned in for the night, so off to bed I went.

Cock-a-doodle-do. Cock-a-doodle-do. As I lay in bed with the windows open I could hear the progressive call of roosters waking each other across the village. I turned over to look at the clock...4am!! Dozing off again, I awoke to chirp, caw, chirp, chirp, caw...5am and the parrots were now awake and getting in to the act. With a long day of diving coming up, I knew I must go back to sleep. EEEEE AAAAAWWW EEEEE AAAAWWW...What is that! 6am and now I am learning what a crazy donkey is. Andoni owns two donkeys and one was in heat. Ah, the sounds of "real Mexico." I made out the distinctive smell of fresh coffee being brewed in a moka pot and it was time to start getting ready for my day of diving.

I had arranged for a guide thru Protec Tulum, specifically requesting Toro who I had dove with before. We decided the sites would be Jailhouse, Kalimba, Xulo, and Carwash. Each evening before bed I jotted down a few ramblings and cryptic notes to myself on the day's diving for my return trip that I will share with you.

Overall, the trip was a complete success. Xulo and Kalimba are now some of my favorite sites and I need to spend more time getting to know the other sites. Casa Mango, while noisier than I expected, was a nice little place to stay and I would consider it again especially for their pasta and hospitality. I would however stay in a cabana and not the main house. I recommend you keep an eye on rental car rates with Fox and take advantage of their low rates. And last but not least, I love the diving in Tulum and can't wait to go there again.

## Trip Notes

### JAILHOUSE

**Site:** Get key was from a house back in the neighborhood behind the Subway; take a left after the square and it's on the right. A few hundred yards back off of 307, the property is fenced and there are people on site. The road is fairly rough, tons of parking, excellent benches, well shaded and has clean toilets but bring your own tp.

**Dive 1 Avg 75', 83 minutes.** To the left of the first T after a low viz entry thru the basin. Line goes to open water tied to a palm tree. Mainline down the center path of the QRSS map going thru Yax Tunich. Fresh water section was dark

and dreary. Just a bit of decoration. We did see bones in a couple of places. Came across a subtle halocline. Salt section was much brighter and plenty of decorations. A lot of eroded limestone with that jagged look. I liked these sections much better. Did two jumps.

**Dive 2 Avg 76', 81 minutes.** Left at T and then into the further tunnels towards bottom of the map thru Yaxbe and in to Swiss Siphon. Started out with same fresh water section then into a different salt section after our jump. Much whiter here and quite decorated. Quite a few stalactite and stalagmites as well as those waterfall looking formations. Did see curtains with the edges having a fairly dark coloration. Halocline coming out was good and there was a distinct undisturbed layer giving quite a mirror effect. Did two jumps and a circuit.

Overall, I would come here again to go to the tunnels to the right. Dives to left are only ok compared to other sites I have visited in Tulum.

#### KALIMBA

**Site:** Site is about two minutes west of Gran Cenote on the south side of the Coba Highway. It was 250 pesos to enter. Key is kept at Xilaba Dive Shop. A couple benches outside and a screened area with benches and tables as well as changing rooms. To the left of the entrance (road at your back) are two clean but semi-primitive bathrooms. Site is right off the highway and easy access, albeit a little steep thru the gate. Area has strong jungle feel and is quite nice.

**Dive 1. Avg 44'. 96 minutes.** The dive site is down the stairs behind the Entrada sign. Go in to a cavern to the water. Platform to the right and straight ahead. Look up thru the skylight and you see a couple of statues looking down on you. Really cool area, I wish I had my camera. Entrance to the cave....stand on the corner of the platform and it just about points you to it.

Dive was only main line. Beautiful sites, tons of decorations. Really liked the formations on the floor about ten minutes in. Reminded me of either an aerial view of Palancar Gardens or the forest of Chinese soldier statues in Xian China. When you keep going down the main line you go thru Boa restriction. Lots of ups and downs, twists and turns. Lots of fun. Kept going down mainline, plenty more decorations....there was no shortage of stuff to see.

**Dive 2. Avg 44'. 88 minutes.** Started along the same route but about half way thru the Boa restriction we did a very short jump (about 8 inches.) This route again had plenty decorations. The highlight was what looked like a bed of nails in the ceiling in one of the rooms. We continued until we came to a T at the bottom of a drop of about 15 feet. I had enough gas to keep going but turned because I wanted extra time in the bed of nails room as well

as the Palancar Gardens looking area.

Surfaced with tons of air to spare and my dive profile looked like an EKG for both dives. Highly recommend this site and must do again. If not my favorite site, it has to be in the top three I have been to thus far.

#### XULO

**Site:** It is about 20 minutes south of Tulum and 100 yards off of highway 307. Entry is 200 pesos paid at the reception building. They have six bathrooms and five showers large enough to be a changing room. The road is decent but the rocks in the parking area have some sharp points so look out.

**Dive 1. Avg 80'. 85 minutes.** The entrance to the basin is down a short set of stairs and underground. They do have lighting but you need to ask the little old Mayan man to turn them on. Cool looking site once he does.

Dive down the main line. There were decorations from the word go. Bed of nails ceilings through a lot of the site. Very very pretty. There was one restriction but it was easily managed. Just go slow since it was looking pretty fragile. Towards the end of the line it looked like eroded limestone. It was ok but not as nice as other sites like Mayan Blue.

**Dive 2. Avg 33'. 93 minutes.** Mainline, then took the first double arrows to the right for a circuit back to the mainline further down. Much of this was less than three feet high. Lots more formations to be seen. Circuit we took had a pretty tight restriction for me. Once back on the mainline we went to the next double arrow for another circuit. This was more of the same but the ceiling was a tad lower. At one restriction I had to superman near the ceiling to get thru without damage. We went a ways further and got to a real scrunchy area that I opted not to do so we turned the dive.

#### CARWASH

**Site:** Entry fee was 150 pesos. Two changing rooms plus toilets on site. Great basin for swimming. Very clear water. Turtles, caiman, etc. Lots of cave divers and open water divers on cavern tours. A few swimmers but not many.

**Dive 1. Avg 71'. 89 minutes.** We did a line to the far left which took us down a siphon tunnel. Followed the line until we hit a jump and continued. Nothing too exciting to write about.

**Dive 2. Avg 58'. 80 minutes.** Right side of the basin. Swam thru Luke's Hope. Lots of big ups and downs on this site. Lots of space, but fairly lackluster.

I will do this site again to see some more areas of it.





# **Did You Get There?**

Photographer: Gene Page

Jug Hole, located in Ichetucknee Springs State Park, Florida is open to diving from October 1 to March 31.

If you missed diving here this past season, you missed some excellent diving!

Continued from page 17

they use? What were their experiences during their training? We humans like to be a part of something. Since the beginning, listening to old stories has been a part of all cave diver's training. I have learned so much just by watching and listening to my peers.

Before a cave dive, think about the people who innovated, organized and put so much of their energy into our sport; and then do your best when you cave dive. Repeat skills that were passed on to you and follow the rules put in practice by our teachers and the pioneers before us.

Let's be grateful for the advances in equipment we have today and for knowing what we do about the environment, so we can pass the torch to future cave divers. Let's be ambassadors of cave diving!

We understand that training is not simply taking a course and earning a plastic card. I have heard fellow instructors say that the plastic card is only a passport to learn. I believe in that statement. Once the basics have been accomplished in a course, it is up to us to keep practicing what we have learned. With time our own personality and attractions will shape us to become a better cave diver.

*Keep learning*

*Once we have learned new skills it is time to think about how we will apply this new knowledge in our diving experiences.*

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Photographer: Guy Bryant



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# Spring Into Springs Day 2016



The NSS-CDS once again participated in Spring Into Springs Day at Manatee Springs State Park.

This is a community education event and despite the early morning rains it was a great success! We presented a display on the caves and diving in Manatee Springs as well as a display and information on cave life and critters and some cave diving videos.

Our thanks to our volunteers Derek Villard, Josh Shouse, Mark Wenner, Win Brown, Al Clements, Forrest Wilson, Michael Angelo Gagliardi, Cheryl Doran and Bubba James.



**Available in the CDS store [www.nsscads.org](http://www.nsscads.org)**

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