



Cave diver
in Cenote
Concha,
Yucatán
Peninsula,
Mexico

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When one thinks about cave diving, the feelings are mixed and it is very difficult to express what it feels like in a single word, but perhaps a possible description is “to live the discovery.” Discovery is an experience and an intrinsic need in human beings since before the discovery of fire. Exploration on earth, in the oceans or on the moon is driven by an impulse to see what lies beyond, in order to better understand who we are, where we come from, and where we are.

In this article, we are going to venture into one of the most demanding but incredible dive specialties offered in our beautiful activity, which is cave diving, and enter “The Underworld,” or “Xibalba,” according to Mayan mythology. Our roadmap will cover the “what, how, when and where” of cave diving, so that when the time comes, you will know how to choose and decide if you are prepared for an experience that cannot be easily described but must be experienced.



Cave Diving

The Final Frontier...

DANIEL MILLIKOVSKY

What is cave diving?

Cave diving is essentially the activity of entering confined, flooded spaces formed by calcium carbonate or dolomite, which have been undermined or dissolved throughout the history of the planet and is usually found under the sur-

face of the earth.

As described in the standards that govern diving as an activity, cave diving is a module included as a specialty of technical diving. In turn, technical diving encompasses three areas. One of these areas is diving in confined or overhead

environments such as wrecks and sunken boats, a second is under ice, and the third is in flooded mines, caverns and caves. This means that there is no direct vertical access to the surface as required by open water diving.

In fact, technical diving originated

from cave diving and great pioneers such as Sheck Exley (1949-1994), to whom we owe the starting point of some of the safety protocols that are still used today. This diving specialty had its boom initially in Florida in the United States, in the early '70s.





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There are several types of caves, differentiated by the soil, structure and geological history; among these are sea caves, coral caves and lava tubes. There are also dissolution caves, created by the dissolution of carbonate sediments (usually limestone and dolomite) of carbonic acid, and the action of water flow through an aquifer. They are commonly found in karst terrain and are the most familiar cave type to cave divers.

The Yucatán Peninsula in Mexico is famous for the beauty of its cenotes, which comprise caverns and caves with stalactites, stalagmites, columns, tree roots and labyrinthine passages. These structures manipulate rays of sunlight within the cavern areas, creating incredible visual

effects. Once entering the cave zone, one will find structural forms and passages that are truly majestic and must be experienced and explored to be described.

How can I start cave diving?

In this type of diving, a gradual build up of skills within the activity is definitely required, and important skills and protocols must be mastered to be able to enjoy cave diving safely—divers must be able to apply the appropriate technique in specific circumstances.

The pillars of cave diving are: buoyancy, trim, and holding position in the water column, i.e. hovering. In addition to these aspects, we must also add an appropriate and stand-

ardized gear configuration, like NTEC (NAUI Technical Equipment Configuration), and several efficient propulsion techniques, among the other skills covered in formal training.

The route to follow to achieve proficiency is to start learning technical diving within a comprehensive training program, such as the one provided by the NAUI Intro to Tech course, which includes the above fundamental principles and skills. From there, one can obtain technical diving certification, combined with diving experience, then you can move forward to new challenges. If your path is towards overhead environments, then cavern training would be the next step, after which you can continue with cave training.



IVONE BENDER

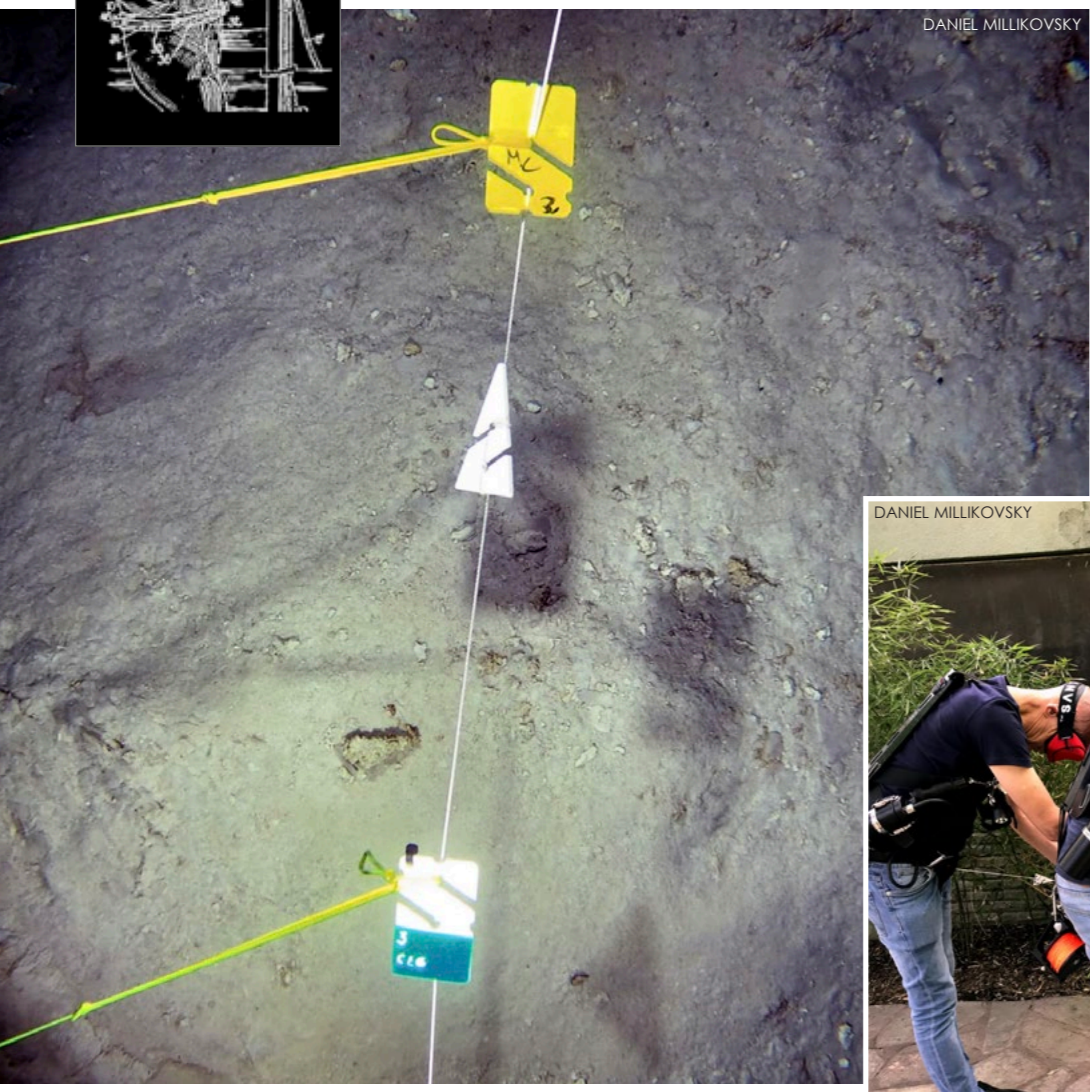
Cave diver in Cenote Taak Bi Ha, Tulum, Mexico (above); Cave divers in Cenote Concha (top left and right)



tech talk



Correct use of primary and secondary reels, line and directional and personal markers, such as arrows, REM and cookies, are critical skills for safety and navigation in cave diving (below and right)



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Land drills are part of training (left); Cave divers study a map of a cave system to plan for a cave dive (right).



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Dive training in caves has four phases that must be fulfilled to achieve a performance that allows one to enjoy cave diving safely and make the right decisions. First, like in any dive course, there is theory that supports the activity, and this must be learned to know the scope, objectives and limits. Geological aspects of the various formations are also studied, and much of the theory is focused on all the safety protocols that will allow us to leave the cave efficiently and enjoy this wonderful environment.

The training then continues with a very important phase, which involves dry skills, or what are

called "land drills." In this instance, real scenarios that the diver will face are simulated in the field. Here, you learn the skills of handling a primary reel and its correct installation, finger spool (secondary reels) specific to making jumps and gaps, and the correct use of directional and personal markers for correct navigational decisions (arrows, REM and cookies).

Situations like loss of visibility, out-of-gas emergencies, how to share gas, loss of the line and/or the loss of a team partner are also included in the training and practice. All these are covered, in addition to

the combination of other possible scenarios. Teamwork as well as pre-checks on land and in the water are mandatory protocols for planning cave dives, reducing the human factor and resolving possible situations with the right technique to achieve successful diving experiences.

The third stage of training can be done according to logistics, initially in a pool, where one can advance some skills that will then be repeated in the open water area of the cenote and the cavern. This is the fundamental process in which one applies everything learned in a dry environment and in a space suitable for practice, reducing one's environ-

mental impact as much as possible, thereby preserving the cave zone. There are specific dive sites and cenotes dedicated only for training for this purpose.

Finally, one comes to the expected final phase: diving the cave zone. This is the time to emphasize planning and navigational decisions with the team as well as all the safety protocols, which must be practiced and executed on absolutely all dives as a mandatory procedure. Then, and only then, can one begin to live the new challenge of exploration, discovery and returning to the light, as a result of proper training and methodology.

When is the right time to cave dive?

The first question to ask is whether the desire to dive into these environments is being driven by mature

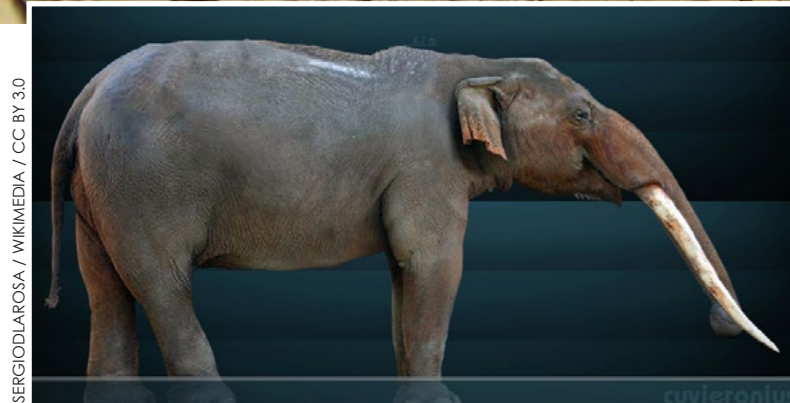
decision-making, rather than group pressure or competition. Once this has been determined, the second question to ask is what experience you, as a recreational or an open water technical diver, have had and if you are willing to face the demands and requisites of this specialty. Every effort pays off and is well worth it, but it is important to consider these questions.

Getting certified in cave diving is not an easy or quick process. One has to be willing to invest the time and equipment, and possibly the cost of traveling abroad to fulfil the last phase of training,

which is quite literally to do the very cave dives for which one has embarked on the journey to learn cave diving. The prize of visiting the underworld is coming!

Where can one dive in caves?

The first and second phases as well as part of the third phase of the cave diver course can be done locally (in the student's or instructor's country). Tulum, Mexico, is not the only location one can complete the training and certification but it is perhaps an ideal destination for this important stage.



Remains found in a cenote (above) of a *Gonfoterio* specimen (left), an extinct elephant-like species that lived 10,000 to 10 million years ago

cave diving in this area as well as many state parks where everything is designed for the cave diver. In Florida, the environmental conditions in the caves vary from a little to a lot of

Mexico is undoubtedly the first best option for continued cave diver training and certification due to the great diving conditions, logistics and surface support there. The diversity of cenotes and their indescribable beauty allows one to discover new places continuously, even when doing the same circuits over and over again. It is amazing to think that there is an incredible parallel world beneath the earth, as you walk in the jungles of the Yucatán.

Once one has gained more advanced experience, a diver can consider Florida—and the High Springs area there, which has miles of very famous caves—where it all started in North America. There is also great support for

water current, which is more challenging and extra demanding, compared to the cenotes of Mexico. This is where other propulsion techniques and other cylinder configurations should also be used, as the consumption factor swimming into the current is generally increased. It is very common to use high-pressure steel cylinders here, precisely to meet this particularity; and divers can have excellent and safe dives using the rule of thirds, with the certainty that when returning with the current, they will comply with the protocols of predictability.

In addition to Florida and Mexico, as cave diving locations in the Western Hemisphere, we can add the Dominican Republic and the famous crystal caves



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of Abaco in the Bahamas; both locations have adequate support for cave divers. Finally, Brazil is also known for the cave diving in its Bonito region. At the moment, these sites in Brazil are closed for the activity, as they are in the process of complying with protocols of the local cave diving association in order to be able to reopen to the cave diving community.

A final thought

Cave diving is not for everyone, and the decision to do it must be made

after having done many dives in diverse conditions; this is the way one builds experience and grows as a diver. There is no need to rush, as any empty gap in training or experience can produce an anticipated frustration or even an accident. The steps have been described above, and the sensory gift is unique, if you decide to go for it. Just be patient, maintain continuity and make sure you receive quality training, in order to have the best experience and minimize the risk. Welcome to The Final Frontier! ■

Daniel Millikovsky has been a NAUI Instructor exclusively for 22 years, a Course Director for 20 years, and in 2016, became a Course Director Trainer and Representative in Argentina. He is a very active NAUI Technical Instructor Examiner for several courses, including OC and CCR mixed gas diving and has also been a member of the NAUI Training Committee since 2020. He owns Argentina Diving, a NAUI Premier, Pro Development, and Technical Training Center based in Buenos Aires, Argentina. For more information, go to: argentinadiving.com