



2017 PROJECT REPORTS

GUE2017

Project Reports

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**THE CRACK: DOCUMENTATION OF A TECTONIC CAVITY
ON GARDA LAKE'S SEABED, ITALY:** Photos by
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GARDA LAKE, ITALY:** Photos by Cristian Benedetti

Graphic Design: Grafica Cossu - www.graficacossu.it



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Published in High Springs, Florida, USA



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**Mexico
Cave
Exploration
Project
2017 Report**



As the longest running underwater cave exploration group in Mexico, MCEP (Mexico Cave Exploration Project) has aligned GUE cave divers with CINDAQ (Centro Investigador de Sistemas Acuifero de Quintana Roo) to work together in the discovery, study, and conservation of the area's aquifer and related features.

ADDING TO THE TOOLBOX

To help us fulfill our 2017 goals, some new tools were added:

- Working closely with the dry caving community, we have collaborated on the creation of a "One Cave" database to help document and map the extensive caves here in Mexico.
- We have helped to develop a Halcyon Manufacturing sidemount system that answers our equipment needs when visiting small and remote caves.
- We have increased our documentation abilities this year with the MNEMO cave survey tool and the support of more divers who have trained to contribute to large-scale, detailed mapping projects.
- Understanding the interplay of dry and underwater passage has led us to hone our dry caving skills in order to document the entire cave and not just the underwater regions we normally focus on.

SISTEMA CAMILO

In early in 2017, we used RB80 rebreathers to help us explore another 1,800 m/6,000 ft of cave passage and extended the detailed mapping of this deeper cave system.

SISTEMA OX BEL HA

The world's longest underwater cave grew by about 1,800 m/6,000 ft with more exploration work originating from Cenotes Esmeralda, Yax K'ai, Hamaca, Tall Trees, and Stilt.

SISTEMA SAC ACTUN

We continued exploration work in Sistema Sac Actun, adding some 2,100 m/7,000 ft to the upstream area of the cave and discovered three new cenotes in the process. The world's second longest underwater cave continues to grow!

KANTENAH AREA

This new area of exploration shows great potential, and we are working with landowners to help them understand and appreciate what lies beneath the ground.

SIAN KA'AN REMOTE CENOTES

Working with Mexico's Comisión Nacional de Areas Protegidas, we are developing a plan to access some of the most remote cave entrances in the Sian Ka'an Biosphere Reserve. Initial work included a low-altitude flyover of target cenotes.



CENOTE SOCORRO

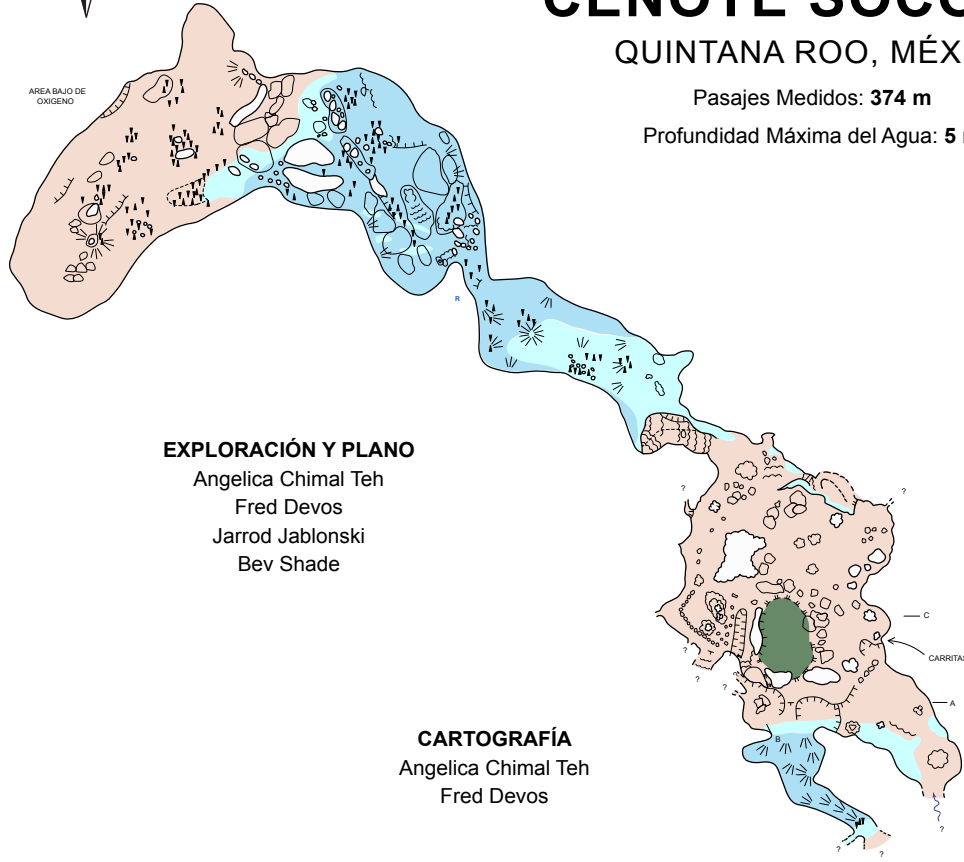
QUINTANA ROO, MÉXICO

Pasajes Medidos: 374 m

Profundidad Máxima del Agua: 5 m

LEYENDA

- MURO
- FLUJO DE AIRE
- COLUMNA
- PIEDRA
- FORMACIONES
- PASAJE BAJO AGUA
- SUPERFICIE DEL AGUA
- GRUTA SECA
- LINEA DE GOTEO
- ENTRADA
- CUESTA ABAJO
- CAIDA DE PISO
- FLUJO DE AGUA
- RESTRICCIÓN
- LINEA DE GUIA
- PROFUNDIDAD DE LA LINE



EXPLORACIÓN Y PLANO

Angelica Chimal Teh
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 Bev Shade

CARTOGRAFÍA

Angelica Chimal Teh
 Fred Devos



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SISTEMA SAGITARIO

This cave was explored some years ago, but during the production of detailed map, a significant continuation of the cave (both upstream and downstream) was made. This led to a significant archaeological find, a prehistoric mine! Under the direction of Mexico's Instituto Nacional de Antropología e Historia, we have been working to further document this important underwater site through detailed mapping and extensive photogrammetry.

SOCORRO

This was a very successful proof-of-concept test where a one-day, concentrated effort allowed for the exploration and survey of both dry and underwater passages, as well as production of a detailed map and video documentation.

SORPRESA

Not for the faint hearted, a long and challenging underwater dive followed by a hike through the jungle is required to access this newly discovered cenote. More than 900 m/3,000 ft has been explored so far, with more work left to do.

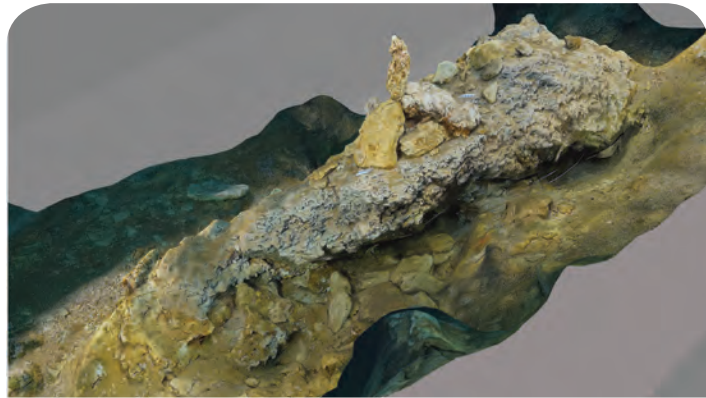
LA COLA

We recently discovered this impressive dry cave, and through mapping efforts, four sumps were found. A lot of sweat went into moving cylinders inside the cave, but just before Christmas, we managed to explore more than 1,200 m/4,000 ft of new underwater tunnels. We are very excited by the spectacular tunnels and high water flow in this new cave, and we are glad this report and publication could allow us to share these latest findings!

SCIENCE PROJECT

As is tradition, we hosted the bi-yearly MCEP/CINDAQ Science Project. In May and December, GUE divers from all over the world leant their experience and time to help scientists in the continued understanding of the underwater caves of this area. Tasks revolved around sediment, temperature, and salinity measurements, but also included the underwater transport of cameras to remote cenotes for deployment as part of CINDAQ's work in understanding the importance of caves and cenotes for mammals of the region.

We would like to acknowledge and thank all who contributed to this year's unprecedented efforts!



SUPPORT

Halcyon Dive Systems, Comisión Nacional de Areas Protegidas, Instituto Nacional de Antropología e Historia, SUEX, Global Underwater Explorers, El Ejido Jose Maria Pino Suarez, Fundación Selva Maya AC, Zero Gravity Dive Shop, Jorge Avila Lourdes Amador, Friends of Mexican Development Foundation, USCD CISA3, Dr. Dominique Rissolo, Robert Lourie, Rami Shakarchi, Brian Strauss, Peter Sprouse.

SCIENCE PROJECT DIVERS

MAY 2017: Aaron Coutino, Ali Perkins, Anya Janzen, Cameron Russo, Chelsi McNeill-Jewer, Chris Le Maillot, David Dusek, Dr. Ed Reinhardt, Federico De Gado, Fred Devos, Hildegard Wiggenhorn, Manuela Schoch, Meghan Clark, Mike Batey, Mike Schernbeck, Patrick Winkler, Peter Gaertner, Petr Talantov, Sam Meacham, Sven Nelles.

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LEYENDA

- MURO
- PASAJE SUBYACENTE
- COLUMNA
- PIEDRA
- FORMACIONES
- PASAJE BAJO AGUA
- SUPERFICIE DEL AGUA
- GRUTA SECA
- LINEA DE GOTEO
- ENTRADA
- CUESTA ABAJO
- CAIDA DE PISO
- FLUJO DE AGUA
- RESTRICIÓN
- POCA VISIBILIDAD
- LINEA DE GUIA
- PROFUNDIDAD DE LA LINEA
- DISTANCIA DE PENETRACION
- CARBÓN
- HUESOS

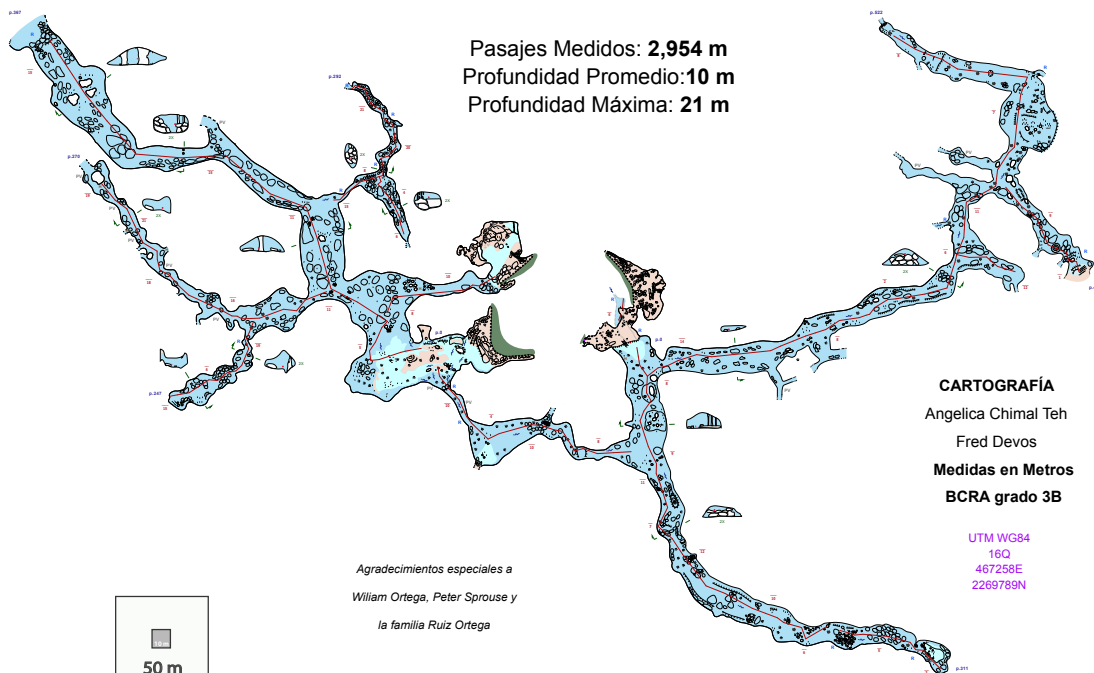


SISTEMA SAGITARIO

- Exploración Inicial -

QUINTANA ROO, MÉXICO

Pasajes Medidos: **2,954 m**
 Profundidad Promedio: **10 m**
 Profundidad Máxima: **21 m**



Agradecimientos especiales a
 Wiliam Ortega, Peter Sprouse y
 la familia Ruiz Ortega

CARTOGRAFÍA

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 SEP-2017



Egadi Islands, Sicily, Italy

April - October 2017

A team of GUE divers ran a three-week diving operation at the site of the Battle of the Egadi Islands, in collaboration with the archeologists of SopMare, the archaeological authority for Sicily.

The Battle of the Egadi Islands was an epic naval battle fought between Carthaginians and Romans in 241 BC, signaling the final act of the First Punic War and giving the victory to the Romans after 24 years of fighting. The battle involved some 500 ships, at least 50 of which sank, causing the death of more than 10,000 warriors.

The site of the battle was located in 2008, thanks to a series of archaeological investigations that culminated in a sidescan sonar and multibeam survey of the area between the islands of Marettimo and Levanzo in the Egadi archipelago, run by RPN Nautical Society in collaboration with SopMare.

In the following years, RPN and SopMare found and recovered nine bronze rams belonging to the ships that were sunk during the battle, in addition to eight

Roman helmets and a number of other artifacts related to the battle.

In 2017, GUE operations included a one-week expedition in April and two weeks of exploration in October and saw more than 30 divers involved. Divers accomplished a number of tasks and found, surveyed, documented, and recovered two bronze rams (one Roman and one Carthaginian), 10 bronze helmets, several transportation amphorae, and other pottery.

The successful operation proved the value of direct inspection carried out by divers on the bottom, in addition to instrumental surveys from the surface, in archaeological investigations. Besides being able to carry out different tasks efficiently, the presence of divers offered more capacity to spot relatively small artifacts, especially when they are laying on a rocky bottom where it is very difficult for the electronic and sonar systems to detect them.

In 2018, GUE is planning to engage in another multi-week campaign in this incredible archaeological area.



SOPRINTENDENZA DEL MARE

Prof. Sebastiano Tusa, Dr. Adriana Fresina, Dr. Roberto La Rocca, Salvo Emma

GUE DIVERS

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Palezza, Marco Colman, Mario Arena, Meredith Tanguay, Nick Schoeffler, Nicola Cestaro, Olin-do Cren, Peter Brandt, Piero Labò, Richard Lundgren, Roberto Picciol, Stefano Gualtieri

SUPPORT AND BOAT CREWS

David Onorato, Giovanni Giannola, Giovanni Polizzi, Salvatore Cardinale, Ronnie Rosselli (external camera), Annika Persson, (cartographic consultant)

TECHNICAL PARTNERS

SUEX, CEIA Metal Detectors, MPS Boosters, Spyder K01, NEMO Power Tools, Halcyon Manufacturing, Krnica Divers





Reseau de L'Ouyse, France

September 24 – 29, 2017

Since 2009, a team of experienced divers and GUE instructors have been exploring and surveying the Reseau de L'Ouyse, known as the cave diving sites Ré-surgence de Cabouy/Gouffre de Pou Meyssen in the Lot region in France. This year, the team focused on photo and video documentation of the cave, as well as further exploration and survey of the cave beyond sump 2. A survey dive in sump 3 was also conducted.

Over the past five years, the team has developed the necessary skills, experience, and equipment for safely crossing the first two sumps, establishing a bivouac for multiple days in the massive air bell between the second and the third sump of the cave, and

safely conducting dives in sump 3. Special equipment and procedures for emergency support were developed and practiced by the team in preparation for the project. A support team between sump 1 and sump 2 helped move the necessary equipment for eight team members who stayed two nights in the dry cave. The team installed a permanent first-aid depot in the bivouac area, and at the end of sump 2, the bivouac team moved the dive equipment further through the dry passage by about 400 m/1,300 ft. A cable car was installed and used to move the dive equipment into the water at sump 3.

Two divers using RB80 rebreathers conducted a survey dive to a total distance of 3,600 m/4,000 yds in sump 3 and collected 3D survey data. After a dive time of four hours, the two divers surfaced safely and the bivouac team moved the equipment back through the dry part to the end of sump 2. More survey data of the dry passage between sump 2 and sump 3 was collected. A special photo and video team focused on documenting the beautiful dry cave between sump 2 and sump 3 and our activities during the project. Furthermore, the data from the two sensors in sump 1 was collected and an additional sensor was installed in sump 3 to learn more about the hydrological situation between sump 3 and sump 1.

In addition, our friends from plongeesout.com collected more survey data between sump 2 and sump 3 and thus helped us to expand our knowledge the survey of the cave.

The current version of the map can be downloaded at http://www.thehiddenriverproject.org/downloads/Reseau_de_l'Ouyse_Copyright.pdf

In 2018 the Hidden River Project team will continue to document and explore the Reseau de L'Ouyse.

For more information, videos, and pictures, please visit <https://www.facebook.com/thehiddenriverproject/> or contact us at info@thehiddenriverproject.org.



THE HIDDEN RIVER PROJECT TEAM 2017

H. Amecke, D. Beiert, D. Brunke, S. Bertelmann, M. Eickhoff, N. Gerdau, O. Gobara, I. Homberger, C. Howe, U. Kunz, M. Isigkeit, J. Medenwaldt, M. Miethke, K. Puchalska, U. Roschanski, S. Schandelle, S. Schlumbohm, G. Schmidt, T. Schnitter



Guadalupe Island, Mexico

December 2017

Project Baseline members, supported by GlobalSubDive and Fins Attached, led a submersible (HOV) and ROV expedition to Guadalupe Island, Mexico. The purpose of the expedition was to observe the great white shark aggregation and interaction with the resident elephant seal colony. Guadalupe Island, or Isla Guadalupe, is a volcanic island located 241 kilometers from the west coast of Mexico's Baja California peninsula, some 400 kilometers southwest of the city of Ensenada in the state of Baja California.

Dr. Mauricio Hoyos served as the principal investigator while Robert Carmichael (RMC) acted as submersible pilot and expedition leader. Dr. Hoyos and RMC executed multiple transect dives beyond the edge of the deep wall. PhD student Marc Aquino Baleyto collected biopsy samples from the elephant seal colony at Twin Canyons beach and further developed his study of implementing a releasable tracking, data, and video recording instrument for marine mammals.

Filmmakers from Discovery Channel's *Shark Week* documented the investigative research and behavioral activities of the aggregation while experiencing dozens of great white sharks simultaneously. The team was able to capture stunning footage from the ROV, diving cages, and submersible piloted by RMC and Randy Holt of GlobalSubDive.

One of the primary objectives for the submersible team was to observe the great white shark behavior at 200 meters and below, along a visually guided transect path projecting seaward from the Twin Canyons elephant seal colony beach area. Dr. Hoyos and RMC navigated into the deep and back by visualizing the most likely path of the elephant seals diving toward the deepwater squid population.

It is believed that elephant seals hunt for squid well beyond 200 meters and, on occasion, are ambushed by great white sharks upon ascent. Guadalupe Island is in the south area of the California Current System (CCS), characterized by its upwelling. The initial bottom structure was a simple mud/sand slope with negligible structure. It appeared that recent storm surge activity

deposited a thick layer of sediment over the entire area, potentially covering what Dr. Hoyos reported as a typically feature-rich sea floor. The conjunction of nutrient-rich waters with solar light generates an extraordinary productivity that explains the biological richness of this region.

Multiple valleys and ridges appeared along our angled descent until one exaggerated ravine revealed an obvious chute to the deep. Following the chute deeper, the first distinct edge (120 meters) of the vertical wall appeared, along with a solo great white shark from the deep dark, weaving and waving by our sub on a trajectory up the ravine as if it were a highway route. Continuing on the visual route, yet another solo great white shark was witnessed on patrol from the deep. At the edge of our communications with the surface, we executed a 45-minute horizontal transect at 200 meters deep on a predominantly east (090 degrees) heading. The route divulged a very diverse, yet predominately sand/mud covered, curvy and wandering vertical wall. At 120 minutes of runtime, we turned the dive to begin an alternate, visually guided transect in the general direction of Twin Canyons/elephant seal beach. The intention was to follow the seal's path in survival mode, belly to the floor. The ascent from deep, dark water in a feature-rich volcanic seamount, in a submersible, is always a remarkable experience filled with revelation.

The silhouettes of the ancient beach lines and occasional habitat community did not disappoint on these dives. Unlike the bland structural view of the descent, the ascents were particularly exciting with organized communities of habitat and other interesting marine life. Torpedo (electric) rays graced our navigation back up the slope on several dives, matching speed with our sub, lights, and cameras. Once the dramatic bottom features gave way to the smooth slope, marine life became sparse until reaching what appears to be a constant aggregation point, approximately 30 to 50 meters deep at Dos Arroyos (Twin Canyons). We lost count of the number of great white sharks seen on each and every dive.

Ongoing Research

Dr. Hoyos and his staff continue a long history of telemetry data collection for this area and others along the west coast of the Americas. Sex and conspicuous characteristics of each animal are determined using underwater videos, obtained when the shark was sufficiently close to the surface vessels of the researchers. Total lengths were estimated from repeated observations of the sharks next to the vessels. Temperature, swimming depth, and movement data are obtained using acoustic telemetry. Sharks are typically tagged by inserting a metallic dart into the dorsum (behind the first dorsal fin) with a tether attached to the depth and temperature-sensing transmitter using a pole spear. To determine if the sharks are feeding on seals, an internal transmitter with a temperature sensor to detect the rise in stomach temperature associated with swallowing warm-bodied mammals have been utilized. The attachment method consisted of inducing the shark to swallow a piece of bait with a transmitter hidden inside. Upon tagging, sharks are monitored using a directional hydrophone and ultrasonic receiver designed for tracking of aquatic animals from a small boat. Data is gathered intermittently, when weather allows and the shark is co-located within reach of the sensors. The submersible and ROV have added yet another powerful observational tool to the mix. The ability of the submersible to hold position in comfort for hours at a time while documenting behavior and related influences using instruments, cameras, and narration while in touch with all dimensions is the reason why these instruments will likely become a must-have on the lists of researchers in this field.

In the near future, Project Baseline will publish imagery, data, and a selection of post-dive interviews from this incredible experience. We are excited to welcome Dr. Hoyos, Marc Baleyto, and their many committed associates to Project Baseline.

General Details

https://en.wikipedia.org/wiki/Guadalupe_Island

Dr. Mauricio Hoyos

<http://pelagioskakunja.org/mauricio-hoyos.html>

2013 Report

http://biotelemetry.ucdavis.edu/publications/34_Hoyos%20et%20al_Isla%20Guadalupe,%20Restauracion_White%20Sharks%20at%20Guadalupe%20_2013.pdf

Marc Aquino Baleyto

<http://pelagioskakunja.org/marc.html>
<https://www.youtube.com/channel/UCG9nO81wwkMYVJPikMKuAkW>

Oceanólogo y Maestro en Ciencias en Manejo de Recursos Marinos

Laboratorio de Ecología de Peces

Centro Interdisciplinario de Ciencias Marinas - CICIMAR-IPN

M/Y *Sharkwater*

<https://finsattached.org/expeditions/>

Images

<https://www.facebook.com/media/set/?set=a.1765043266839874.1073741834.778951695449041&type=1&l=05c212b1cf>

More imagery will be released after the first showing of *Shark Week 2018* in early summer 2018.

PROJECT BASELINE

Submersible team: Robert Manuel Carmichael, Randy Holt, Kenny Hague

ROV team: Craig Bussel, Dan Vasey, Mark Barnum

Cage divers/film: Douglas Brandon, Wesley Siebenthal, Mikkel Pitzner, Brock Cahill (filmmaker, *Sharkwater*), Thomas Leszkiewicz (Sherwood Scuba Marine Conservation Group)

Primary sponsors:

<http://globalsubdive.com>

<https://finsattached.org>

<https://nitroxmaker.com>

<https://lwamericas.com>



Possible *Wilhelmsburg*, © Derk Remmers 2017

Tenedos Dive Project 2017

From September 17-24 in Bozcaada, Turkey, a team of GUE divers was tasked with a portion of the underwater videography and photography for a production of two episodes for the Turkish documentary TV Channel BeIN IZ.

Bozcaada, known as Tenedos in Greek, is an island that lays in the outlet of the Dardanelles. This area is best known for the action it saw during the First World War in conjunction with the Gallipoli campaign. However, the Dardanelles also played an important role in World War II, as it is the connection between the Mediterranean and the Black Seas.

The goal of the project was to identify and document wrecks from the Second World War. After much archive work by Dimitri Galon and sonar search by Selçuk Kolay, the dive teams were able to locate and document the wrecks of the Italian steam tanker *Maya*, sunk in 1941 by the British submarine HMS *Perseus*; the French steam freighter *Nantaise* and a target that is possibly the German tanker *Wilhelmsburg*, both sunk

1943 by HMS *Rorqual*; and the British submarine HMS *Simoom* (P225), sunk by a German mine.

Additionally, underwater video from the project was used in two 50-minute documentary films by the Turkish TV station BeIN IZ. Photos were taken and used for the press coverage of the event.

The wrecks were located at depths ranging from 50 to 90 meters in an area generally known for its strong currents. Due to the remoteness of the location, closed-circuit rebreathers were used.

GUE TEAM

D. Remmers (videographer), D. Galon (stills), Jarek Grüber (lighting), Markus Kerwath (pointer)

Baltic Sea Wreck Divers

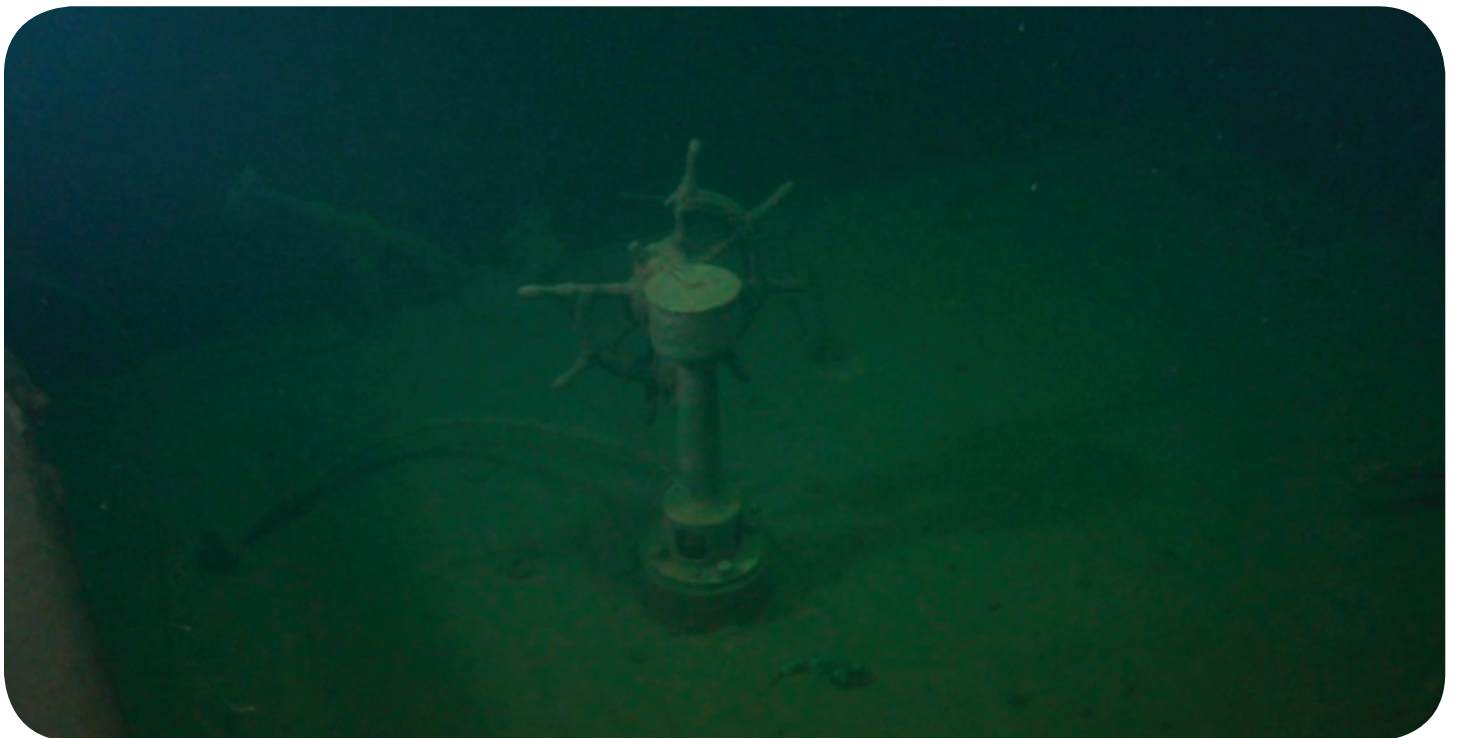
2017 didn't turn out as planned for Baltic Sea Wreck Divers: we took less video and did more exploration! Taking advantage of a window of good weather, we focused on our deepest target, the *S/S Hernodia*, which lies at a depth of 120 meters in the Baltic Sea, outside of the Åland Islands. *S/S Hernodia* was brand new when she sank. She was launched during WWI in May 1915, and on May 22, only one week later, she hit a mine and sank in just four minutes. All 22 crewmembers survived; the lifeboats were already prepared since they were navigating in potentially mined waters. With good weather, they managed to reach a lighthouse where they were later picked up by a Swedish torpedo boat and transported to Sweden.

Hernodia is a beautiful wreck in pristine conditions. In 2011, we did one dive on her and at that time, the chimney was still standing and the bridge was intact, offering an unbelievable view. Sadly, it has been trawled, dragging down the bridge and the chimney, as we saw when we went back this summer for a few dives. Fortunately, all details and relevant artifacts are still on or around the wreck.



Both open-circuit and closed-circuit rebreather dive teams ran 25-minute bottom times.

In 2018, we will continue with the plan for videos, as well as an exploration week in July for the deeper targets.



A photograph of two divers underwater in a deep blue environment. The divers are positioned in the center of the frame, facing each other. They are wearing full diving gear, including tanks and fins. Bubbles are visible around them, and their lights are on. The background is a gradient of blue, darker at the bottom.

Aldenham Dive Week 2017 by Krnicadive

July 1 – 9

Premuda, Croatia

In the years 1999 and 2000, the Wreck Diving Society (WDS), among them GUE Instructors Mario Arena and Andrea Marassich, found and identified the wreck of the British World War II destroyer HMS *Aldenhams*. The ship was a Type III Hunt-class destroyer with a length of 85 meters and a displacement of 1,015 tons. She entered service in 1942 and was circumnavigating the African continent before she was deployed to the 5th Destroyer Flotilla to take part in the battle of the Mediterranean.

Her final task was to fire shells towards the Island of Pag. During her return, she hit a mine close to the Island of Skrda. The explosion broke the ship in two parts, both of which sank on December 14, 1944, making her the last lost destroyer of the Royal Navy in World War II.

Today, the wreck parts are found at a depth of 85 meters, 700 meters apart, on the always-foggy bottom of the North Adriatic.

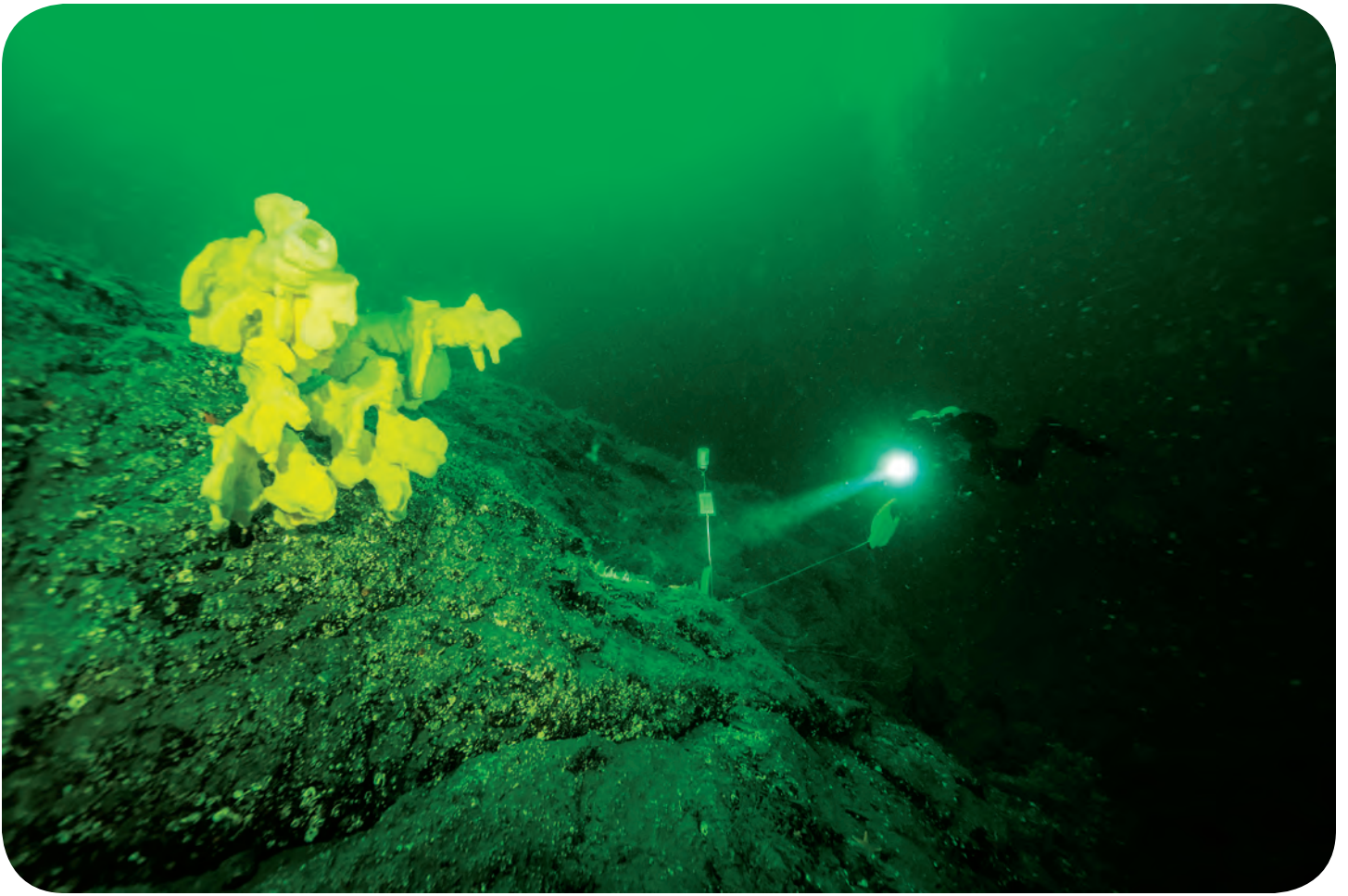
A team of GUE divers set sail from Krnica to Premuda with the goal to document the remains of HMS *Aldenhams* with photos and video, as the capabilities of video and photo equipment have increased dramatically over the last 18 years.

The team was able to take photos and videos of the wreck. Publication in British magazines is underway.

ALDENHAM TEAM

Richard Walker (lighting - UK), Matt Jevon (lighting - UK), Henning May (lighting - DE), Derk Remmers (video/stills - DE), Andrey Vorobyov (UA), Oleksiy Sverdlov (UA)





Project Baseline Saanich Inlet Report

Project Baseline Saanich Inlet was initiated in 2016 by Project Manager Christopher Locker and Joakim Hjelm. Our Project area is in the Saanich Inlet on Vancouver Island in British Columbia, Canada and is a 24-kilometer-long coastal fjord. The movement of water is restricted in the inlet, due to a 75-meter sill that protects the deeper waters at maximum depth of 235 meters. This situation, combined with higher organic input from freshwater discharge in the fall, creates anoxic conditions below 110 meters (Microbe Wiki, 2017). As a result, the inlet is a popular research area for scientists from all over the world who are interested in researching the microbiology associated with these conditions.



Our main research interest is to use photogrammetry technology to model, document, and monitor the glass sponges of the Saanich Inlet. We currently monitor three sponges at the McKenzie Bight site and a shipwreck and reef ball at Henderson Point. Recently, one of the McKenzie Bight sponges went missing; we suspect that fishing activities are responsible.

Our activities have now expanded into an annual lake cleanup and Ghost Fishing initiatives. We partner with the local governing body, Capital Regional District, for the lake cleanup and have removed close to a ton of debris from the lake. For Ghost Fishing, we have removed commercial abandoned crab traps from the Saanich Inlet.

Going forward, we would like to expand project sites and increase the number of site managers. An area of interest is the sponge reef at Senanus Island, close to the Henderson Point Site.



PB SAANICH INLET TEAM MEMBERS

Brad Harris, Trevor Yee, Lee Critchley, Preston Ivan McIntosh, Greg Nuttall, Jim Dixon, Guy Shockey, Nick Bowman, Drew Coutts, Tyler Armeneau, Ewan Anderson, John Campbell, Joakim Hjelm, Christopher Locker





Project Baseline Lebanon

In November 2017, Project Baseline Lebanon was officially registered with its first initiative, Project Sea Shelter, managed by Gerard Ghammachi and Hala El Khoury.

A group of enthusiastic GUE and SSI divers gathered to work out how they could enrich marine life along the Lebanese coast. In recent years, the area has started to show a degradation in sea conditions, resulting from pollution and other harmful acts towards marine life. Because of this, a group of friends decided to step up and take action towards turning around these conditions, hence Project Sea Shelters. Through the installation of well-designed artificial reefs, the goal is to create shelters for marine life to inhabit at strategic points along the Lebanese coast. Our hope is that these stations will be protected by Lebanon's Ministry of Environment, thereby increasing project awareness about the damage to the Lebanese sea and motivation to begin fixing it.

The construction of the first artificial reef has begun, using steel and concrete. The first station will be installed in Batroun, North Lebanon beside the historic Phoenician Wall, at a depth of 10 meters.

Once this station has been installed and begins to show signs of positive change, the artificial reef will be replicated and set up across many other points along the coast.

PROJECT SEA SHELTER'S TEAM

Gerard Ghammachi (project manager): GUE Fundamentals instructor

Hala El Khoury (project manager): GUE Tech 1 diver
Ziad Bishara: GUE Fundamentals diver & NAUI instructor

Elie Abdel Ahad: GUE Fundamentals diver & TDI Trimix diver

Eli Kmeid: GUE Fundamentals diver & SSI representative Lebanon

George Assaf: GUE Fundamentals diver & SSI course director

Diane Rouhana: SSI Open Water instructor

Wreck Research Team Badewanne

For the second year, GUE Instructor Fabrizio Tosoni joined the Badewanne team in their exploration efforts. During the 15-day expedition, the team managed to perform an accurate survey of the HMS E18, an E-class British submarine that sank after hitting a German mine on June 16, 1916. The team measured the thickness of the hull of the T18 torpedo boat, which was sunk on September 17, 1944 by a Douglas A-20 Havoc/Boston flying under the Russian flag for the Estonian maritime authority. Furthermore, the team discovered and identified the *Gnevnyi*, a Soviet Project 7-type destroyer that sank on June 23, 1941 when it struck a mine in the German Apolda minefield, as well as identified and surveyed a Douglas A-20 Havoc/Boston in pristine condition.

All wrecks were located between Estonia and Finland in the Gulf of Finland.

Both JJ-CCR and RB80 rebreathers were used due to the depth and bottom times required for the dives.

More information can be found at <http://badewanne.fi/>



© Badewanne.fi



The Peak Project Australia

The Peak is a seamount located 14 nautical miles from Sydney, Australia and is reputed to have formed part of the continent's shoreline during the last ice age when sea levels were lower. Rising from a sea floor more than 100 meters deep to a plateau top at around 65 meters, the side of the seamount facing the open ocean is scored with dramatic cliffs and canyons. Divers from the GUE SydneyTec Group have been undertaking a Project Baseline initiative at this site to record the condition of this little-explored and rarely seen environment.

Challenges for the project have included the variable weather conditions at the site, which is exposed

to rough seas and strong and unpredictable oceanic currents, the vast size of the seamount, the very limited amount of information about the site that was available before the start of the project, and the restricted working time available at the depths encountered. Due to these challenges, it has taken a number of dives to gain a basic overview of the site and to select appropriate stations to begin repeatable documentation. For now, the team has decided to focus on one particularly striking canyon with a floor at around 83 meters deep and vertical walls up to 15 meters high, and in particular establishing a primary station on a prominent rock in the center of this canyon that has been nicknamed "The Sphynx."

On another dive, while scouting to expand the team's picture of the wider site, divers discovered the wreck of a small fishing boat, sunk two years prior. This could offer a great subject to record the rate of colonization of marine growth on a relatively "clean" object. The team now intends to definitively connect the location of this wreck to the canyon, and establish another station here.

The team members feel that they have only just scratched the surface of this spectacular location and are chomping at the bit to progress with the outstanding potential for project documentation that the site holds.

A short trailer for the project is online at
<https://vimeo.com/huwporter/ThePeak>



PROJECT PERSONNEL (so far!)

Liam Allen (project coordinator, gas diver, still photography), Parham Azadpeyma (support), Scott Clarke (support), Rob Lee (gas diver), Tony Lowrey (gas diver), Aaron Michie (gas diver), Jason Miles (boat captain), Duncan Paterson (diver), Huw Porter (gas diver, video and editing), Rick Reimer (gas diver, still photography), Nick Schoeffler (support), Jakub Sláma (bottom diver), Vanessa Torres Macho (gas diver, still photography), John Wooden (gas diver)





2017 GUE-BE North Sea Project *Westhinder*

Synopsis: A GUE-Belgium project dives on a classified and protected wreck. Project goals are to take high-res pictures of the wreck and winch, attempt a 3D model, investigate the history of the ship, and create a short documentary and a website.

The *Westhinder* was a lightship anchored about 30 nautical miles from the Belgian shore on the most southern point of the like-named Westhinder sandbank. She sank on December 13, 1912 in a collision with the SS *Ekbatana* and lighter *Minie*. She sank in 20 minutes with all hands on board.

We started this project because we got the vibe from our community that there was a general interest in project diving. Most of GUE-BE had already acqui-

red a good amount of experience while doing working dives in the North Sea during the previous years' Ghost Fishing dives.

After discussing, we decided to work on this specific wreck because it's well known, historically significant (lightship), and in a reasonably good state of conservation. Additionally, little high-res photo and video material of the wreck exists.

The story of its sinking is quite interesting because it involves a father and a son on different ships, a lost ship, and the sinking of the *Westhinder* with all men aboard.

After investigating and contacting the Belgian government to obtain permission to dive on this pro-

tected wreck, we started organizing our project. A successful kickoff day followed, during which we presented the project, our goals, and safety instructions to all of the GUE divers involved.

The diving part of the project started in May. We were assisted by marine archaeologist Sven van Haelst, who participated in one of our diving days and provided feedback on how to establish a *modus operandi* and how to properly monitor and record the wreck and its changes. After the first day of putting 10 divers in the water for two dives, we were already able to see what goals would be attainable and where we needed to adjust. Dedicated diving teams were organized to focus on video, 3D, photo, and marine biology, with key persons responsible for their specific goal. Online applications helped us keep track of the goals and communicate with the other divers and teams on their progress.

In the end, we managed five diving days on the wreck, putting in over 120 hours of work on the wreck in difficult North Sea conditions. When you start putting in so many hours on one wreck, you become very intimate with the surroundings, and as a group, we started to develop our own vocabulary to describe different parts of the wreck during briefings/debriefings. The result of these dives, combined with a lot of out-of-water work, is high-res pictures, video, and a full 3D rendering of the wreck.



We are also going to complete a small video documentary on this project and establish a website, and we hope to publish articles in diving magazines.

Foremost, this project has created an enthusiasm within the Belgian GUE community and everybody involved is already asking what project will be planned for 2018.



THE TEAM

Wannes Engelen (project manager), Ben van Asselt (video), Erik de Groef (video), Kim Eeckhout (light), Koenraad van Schuylenbergh (3D assistant), Johan Wouters (3D), Peter Brandt (3D), Stephane Riga (3D assistant), Vasily Rybakin (3D assistant), Lucas Marain (light), Katja Blugel (pointer photo), Dmitriy Esakov (light), Patrick Sledz (fauna), Stephaan Dhelsen (3D assistant), Bernard Barre (3D assistant), Geert Allaert (light), Peter Zaat (video), Jonas Pateet (photo), Laurent Miroult (photo), Bart Hoogeveen (photo), Laurent Steyaert (3D assistant)

Project Baseline Bergse Diepsluis Projects 2017



Project Baseline Bergse Diepsluis is one of the active Project Baseline locations where members of several dive clubs (federations) participate. Rene van de Laan is a GUE diver from GUE-Belgium and, with lots of enthusiasm, has been doing a great job as the Project Manager. In 2017, we started with a Project Baseline dive where we invited other clubs to join. Together, we took visibility measurements, talked about the importance of Project Baseline, and tried to make Project Baseline Bergse Diepsluis better known to the public.

Because station 1's sign is in salt water, the team has to replace the sign every six to eight months. We measure the temperature and meters of visibility throughout the whole year. We have our data in a spreadsheet and one of our goals for 2018 is to incorporate the data logging into a website.

The team has been spending time at different dive clubs to explain what Project Baseline Bergse Diepsluis is. Because of this, more people are interested in taking measurements or want to know even more about this project.

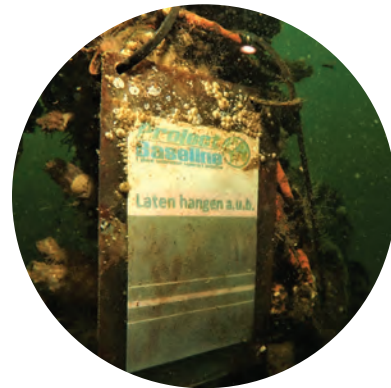
For 2018, the team is planning to expand the measurements taken with salinity and oxygen levels. You can find Project Baseline Bergse Diepsluis on Facebook where the team actively posts events, photos, and short films to keep everybody updated: www.facebook.com/projectbaselinebergsediepsluis.

Project Baseline Domein Muisbroek 2017

Project Baseline Domein Muisbroek had a stationary year. During 2017, the team did temperature readings and visibility measurements, and while the plan was to participate in the sediment project, two weeks after the installation of the sediment trap, it was gone (stolen or vandalized). We will try again next year.

During the summer, the team was invited to give lectures about Project Baseline to the biology department at the University of Antwerp.

Next year will bring some changes, including a new project manager with some new ideas. We are looking forward to it.



THE TEAM

Rene van der Laan (project manager), Lia van der Laan, Marco Pfister, Olf Smetsers, Ted Scholte

THE TEAM

Ben van Asselt (project manager), Koenraad van Schuylenberg, Kim Eeckhout



IBERIA CAVE TOUR 2017

In the summer of 2017, eight divers decided to step off the beaten path and explore some of the better known, but less dived, caves of Portugal and Spain.

In two weeks, we traveled over 4,000 kilometers and dived eight caves: Alviela, Almonda, Zarzalones, Cueva del Água, CT12, Moraig, Fuentenavina, and Pozo Azul. Conditions were kind to us and we were treated to nice clear water in all locations, which facilitated our video efforts. It was an opportunity for Cave 1 divers to try out their skills in new cave environments and for Cave 2 teams to get together and stretch their fins a little further into some of these systems.

With temperatures ranging from 10 to 30 degrees Celsius (yes, 30), and depths from 12 to 50 meters, we covered a broad range of cave conditions.

We owe special thanks to the many local divers who helped with information, logistics, and support.

Cave Tour 2018 is scheduled for June 11-17, 2018. Join us for a week of fun!

Video : <https://vimeo.com/235172752>

DIVERS

Daan van Schaik (Netherlands), Belen Andres Garcia (New Zealand), Francisco Toucido (Spain), Israel Inaranja (Spain), José Carlos Martins (Portugal), Juan Moreno (Spain), Michael Spahn (Switzerland), Ricardo Constantino (Portugal)

Radiolocation #2 @ Bivakruimte2
Entrance Distance : 1304m

UTM-WGS84
 32 T
 295984m E
 5246416m N
 Alt. surface 343m
 Alt. in cave 267m
 Covering thickness 76m

Start of Siphon S6 @ S4_to_postS5_30
Entrance Distance : 1773m

UTM-WGS84
 32 T
 296147.3m E
 5246687.9m N
 Alt. surface 335m
 Alt. in cave 270m
 Covering thickness 65m

Radiolocation #4 @ S4_to_postS5_16
Entrance Distance : ~1600m

UTM-WGS84
 32 T
 296117m E
 5246556m N
 Alt. surface 327m
 Alt. in cave 267.5m
 Covering thickness 59.5m

Radiolocation #3 @ Post_S3_11
Entrance Distance : 1432m

UTM-WGS84
 32 T
 296059m E
 5246418m N
 Alt. surface 338m
 Alt. in cave 267m
 Covering thickness 71m

FOURBANNE EXPLORATION PROJECT
Exploration of the En Versenne cave
and the Résurgence de Fourbanne
Fourbanne - Doubs

ANNEXE 1

Siphon S3 (246m)

Lake

2nd Lake

1st Lake

Secondary passage

Siphon S2 (800m)

Lake

Radiolocation #1 @ 1A.43
Entrance Distance : 231m

UTM-WGS84
 32 T 296125m E ; 5245692m N
 Alt. surface 318m (?)
 Alt. in cave 265m
 Covering thickness 53m (?)

Siphon S1 (258m)

Entrance @ 1A.0
Resurgence

UTM-WGS84
 32 T
 296041.5m E
 5245517.4m N
 Alt. surface 265m

NG



Plan

0 20 40 60 80 100m

Original survey : Marlon Mendonça Dias
 Completed by Daniel Chailloux - Nov. 2017

Exploration and Survey of the Resurgence de Fourbanne 2017

2017 was an intense year, during which we visited the Fourbanne cave several times to continue our exploration and managed to push the cave 700 meters to a sixth sump. After having explored the cave to the end of S2 in 2016 (see our 2016 report for more details and history of the cave), the major challenge at the beginning of 2017 was to find a continuation after S2 which, after a T, ended in two separate dry corridors.

In January 2017, after the necessary work, we found a continuation leading to S3. In March, we passed S3 and ended up in a big gallery where the cave continues as a river, which we followed, partly swimming, partly walking, and partly clambering, until the next sump: S4, nearly 1.5 kilometers from the source. By summer 2017, we had passed S4 to come up, go down (S5), and then come up again, post-S5. On a later trip, we continued from there, walking and clambering while carrying 5-liter sidemount tanks, until we reached the beginning of S6, nearly 1.8 kilometers from the source. This one proved hard to pass with the small 5-liter tanks, as it goes deeper and is longer than both S4 and S5. There is a lot of fine sediment and clay that, together with small passages, makes for bad visibility. So, S6 was the last stop in 2017. The main goal for the next trip in 2018 is to get past S6.

Another good development this year was getting in contact with Denis Motte, one of the lead explorers of the En Versenne cave in the '80s, which we want to connect to in the long run. He had given up hope that he would see a connection between En Versenne and the Fourbanne cave, as exploration in those caves halted in the '90s. In En Versenne, after more than 9 kilometers of exploration, the explorers ended in a higher gallery at a big collapse and in a lower gallery at a siphon. This proved very hard to pass due to the length of dry cave to be crossed carrying dive gear, the fact that the bedding and walls of the siphon are all very silty clay, and the way out is downstream, which led to zero visibility during their tries in the '90s. In the 2016 report, you can read how exploration ended on the other side, in the Fourbanne cave, in the '90s.

Denis Motte was very enthusiastic about a new group working upstream in Fourbanne and invited us to visit the En Versenne cave. This is a closed cave, of which he is the only key holder. En Versenne is an active system where you can follow the river, mostly on foot.

As we found out, we also had to do plenty of swimming and even a little breath-hold diving while only wearing speleology overalls and some dry undergarments. In water of 10 degrees Celsius, this became rather cold. Wetsuits will be packed for next time, for sure! However, it was very special to see the siphon where downstream exploration halted and which is our end goal going upstream. The En Versenne cave is also a beautiful cave, not often visited, with nicely decorated portions and interesting underwater river scenery, including ravines.

We were also able to get in contact with Daniel Chailloux, a radiolocation expert who, due to his expertise, is asked to assist in many speleology projects. He came along in November on our last trip for the year, and thanks to his great help and the support of people from the local cave club, Association Speleologique du Doubs Central, we managed to do four radiolocations over the cave. It was great to find out our topo only deviated 1.4% at the farthest point we radiolocated.

The topo added to this report is based on our surveys and the radiolocations. We are now 2.5 kilometers, in a straight line, from the last known siphon in the En Versenne cave. A lot of work is still waiting for us.

More information can be found at:
facebook.com/FourbanneExplorationProject

TEAM

Richard Groot, Ferry Schram, Arno Mol, Marlon Mendonça Dias, Frans Janssen, Heleen Graauw, Dennis Blom, Jeroen Steinberg, Jan Mulder

Thanks to Denis Motte and Daniel Chailloux for their valuable input and support of the project.

Thanks to Anton van Rosmalen, Frederic Martin, Frans Schoonhoven, and the people of the l'ASDC who helped out on several occasions, and last but not least, to Monsieur Prost for letting us on his land.



On the Hunt for Pictures

Red Sea, November 16 – 23, 2017

In the third week of November, a dedicated group of GUE divers volunteered their time and talents to help GUE by shooting photos in the beautiful and colorful environment of the Egyptian Red Sea. The photoshoot's goal was to enrich GUE's photo library for educational materials. On board the MY *Nouran* from Red Sea Explorers (a GUE facility), the team sailed from the harbor in Hurghada, Egypt on a six-day liveaboard to the Northern Red Sea.

Aside from adding to the photo library, the group also benefited from photo tips shared by the photographers on board, workshops on posture, underwater position, and flutter kick mechanics, and video reviews of their personal skills.

The trip was loads of fun and included underwater encounters with dolphins, other Red Sea inhabitants, and world-famous wrecks.

The time spent on board was very successful; more than 3,000 photos were shot, ranging from skills and drills photos to beauty shots, surface images, and rescue skill documentation.

PARTICIPANTS

Dorota Czerny, Mark Devoldere, Matthew Eayrs, Peter Gaertner, Carsten Horn, Maren Isigkeit, Ursula Kalverkämper, Michael Karu, Julian Mühlhausen, Manuela Schoch, Red Sea Explorers (operator)



Attersee, Austria

January 2017

During a dive as part of a local Project Baseline initiative in the lake of Attersee, Kai and Michael have been measuring the visibility at different stations. Afterwards, they decided to have a look in unknown parts of the dive site and suddenly came across a lost net entangled over a tree. They decided that the net had to be removed.

In May, they measured it and took note of the coordinates. It was 24 meters long and entangled over a tree from 30 meters up to 22 meters. Nearby was a fish that died when it became entangled in the net.

In June, planning started for the team's Ghost Fishing project to be run in July. At first, we relocated and marked the net with a buoy. Then, we cut the net in two parts and lifted one part up. The next day, we cut the remaining entangled net from the tree and lifted it up.

LINKS

Facebook

<https://www.facebook.com/projectbaselineaustria/>

Vimeo

Short version: <https://vimeo.com/228395182>

Extended version: <https://vimeo.com/234889421>
(PB 2017 Film Festival conservation category runner-up)

TEAM

Michaela Strazanova (survey), Felix König (survey), Frank Rinnerberger (survey, worker), Kai Wünsche (safety), Ilonka Bayer (safety, worker), Peter & Petra Flaschin (safety), Mario Moser (worker), Hannes (safety), Bianca Rinnerberger (surface support), Michael Westreicher (coordinator, videolight, camera)



GUE Project Nuttlar Sauerland, Germany

April 13 - 16, 2017

GUE Project Nuttlar started in 2013 with a team of GUE instructors, divers, and friends led by GUE President Jarrod Jablonski, and it has continued once a year ever since. The project is focused on exploring and surveying a slate mine in Nuttlar, Sauerland, mid-Germany. In 2017, the fifth expedition of the project took place, and the team met up again for four days to continue working on the survey map and to work on other tasks. Since 2013, the mine has been open to certified cave divers. Diving activity is managed by Matthias Richter and his team from the dive shop Tauchschule Sorpesee. The project's survey map is intended to serve as a tool for the visiting cave divers to plan their dives in the mine.

After four years of concentrating on exploring

previously un-dived areas of the mine and surveying the various tunnels and halls, these two objectives are close to being met. Divers have been to all parts of the mine, including the lower level, and the survey map includes all main tunnels in the mine. Considering the tremendous video footage and pictures that had been taken so far, there was space and capacity for new ideas and experiments in 2017. GUE Instructor Peter Brandt from Belgium brought up the idea of doing some tests with photogrammetry.

Photogrammetry is the ability to reconstruct a 3D scene based on 2D data (pictures) and is usually used to create a 3D model of an object by taking pictures of it and the surrounding area. Therefore, the task was to answer the question of whether it's possible

to do it inside out. Could we create a model of a mine tunnel with photogrammetry? Different setups had to be tested to determine how best to capture the data, and up to three teams were involved in executing these tests. After the four days, a huge amount of data was collected and the real work started with processing it and evaluating the outcome. The results are very promising, and the team is looking forward to the next step of the project, bringing the mine to life in a 3D model.

For further information, please refer to www.facebook.com/GUEProjectNuttlar. The current version of the map can be downloaded at www.bergwerktauchen.de/karten.



2017 TEAM

H. Amecke (survey), A. Bossow (logistics),
D. Brunke (survey), P. Brandt (photogrammetry),
M. Eickho (logistics), N. Gerdau (survey), J. Gruber
(video lighting), J. Hoffmann (camera), I. Homberger
(survey), M. Isigkeit (coordinator, survey),
S. Labisch (surface manager), P. Leclerc (videolight),
S. Matthies (camera), J. Medenwaldt (survey),
K. Puchalska (logistics, survey), R. Rosenberger
(survey), S. Schlumbohm (exploration), D. Schmid
(photographer), M. Schmid (photo team),
M. Schernbeck (survey), T. Schnitter (survey
manager)





Argentarola Project

As part of Project Baseline Tyrrhenian Sea's monitoring activities, BigBlueXplorers, a GUE affiliate, carried out a specific project of mapping and describing the biological characteristics of the underwater habitat surrounding Argentarola, a small island off the Tuscany coast (central Italy). Argentarola is characterized by a high level of biodiversity in terms of the number of living species and its environmental conditions, but it is also a popular dive site and therefore very easy to monitor. The project's goal is to survey in different cardinal directions of the island (north, east, south, and west) for the successive mapping of the surrounding sea floors and their benthic characteristics.

The sea bottoms are mainly characterized by rock, alternated with sand and mud in the deepest zones. Algae, sponges, sea urchins, and starfish are common, but octopus and numerous small fish like bream, damsel fish, and mullet are also present. The sandy bottoms, on the other hand, are generally colonized by *Posidonia*

oceanica, the real green lung of the Mediterranean marine ecosystem, in addition to many other marine species such as dream fish, *Pinna nobilis*, and seahorses. Going deeper into the shady area, the seabed is generally colonized by several species of sea fans and red coral. The rocky cracks can host lobsters and eels, including moray eels, and in open water, we find dentex, bass, sea breams and grouper.

So far, the project has collected data from the north side of the island through the survey of a transect that reached a depth of 50 meters. GUE divers, divided into two or three divers per team, traveled along a temporary geo-referenced line that reached from the surface to the bottom. They collected environmental data at specific stations positioned every five meters on the line. The line was also used for surveying and for the subsequent representation of the collected data. At each station, GUE divers conducted a visual census to identify the different species of fish present in the

area, collected environmental parameters like visibility, temperature, current, type of substrate, and inclination, and with the support of photos and video, identified benthic species that were present.

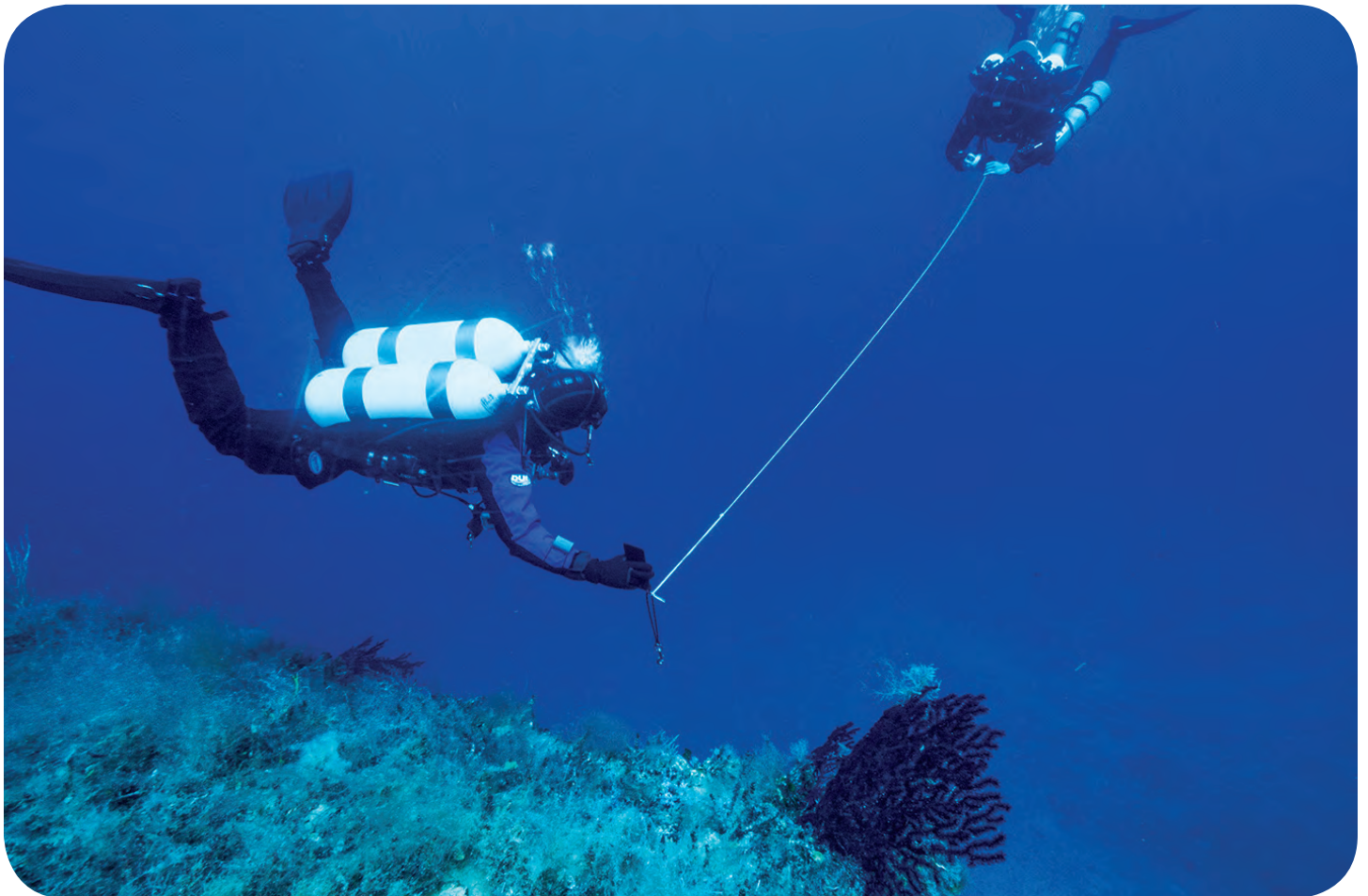
The first results highlight that almost the entire surveyed sector is represented by rocky bottom alternated with boulders and sand, with the exception of the deeper area where the seabed becomes predominantly muddy. Regarding benthic species, the presence of sea fans (*Eunicella singularis* and *Eunicella cavolinii*) was found in the more superficial bathymetric zone, while some rare red gorgonian (*Paramuricea clavata*) was detected only in the deepest stations. Near the muddy bottom, branches of lofogorgia were also identified. At the maximum depth of the study area, an *Alcyonum palmatum*, uncommon for the area, was recognized. Bream, moray eels (*Muraena helena*), scorpion fish, and chromis are, on the contrary, routinely recovered at different depths.

The next phase of the project is still in progress and involves the input of collected data into the project's website, which was developed in order to view the data in a 3D format. This allows an economy in terms of server space and the ability for researchers to directly access the collected data (<http://www.bigbluexplorers.com/argentarola.html>).

On the website, the different environmental parameters collected during the dives will be presented through graphs, and for each monitoring station, there will be descriptions, as well as video and photos of the identified species with a link to an online sea library that's available to the public.

Once the mapping of the different sides of the island is complete, the same stations can be used to monitor the environmental parameters and the marine organisms in order to study their seasonal variability.

In addition to being a good opportunity to engage a high number of GUE-trained divers in data collection activities, this project makes it possible to provide the scientific community with a really important dataset that is otherwise difficult to obtain.



Nave delle coperte

June 17, 2017
Sicily, Italy

A team of GUE divers explored the wreck nicknamed “Nave delle coperte,” 12 miles off the coast of Sicily, between Capo Passero and Malta. The name of the wreck, which lies on a sandy bottom at about 90 meters, was given by the local fishermen who, for decades, have recovered blankets when trawling on the site. According to traditional lore, every fisherman of Porto Palo has at least one blanket from the “Nave delle coperte.”

For the first time, divers Fabio Portella and Nicola Giusti visited and filmed the wreck that has supposedly never been explored before, finding hundreds of



bedclothes inside the cargo holds.

Identification of the ship is still in progress, but odds are that we’re dealing with the *Capetan Christos*, a general cargo vessel that sank on January 22, 1978. The vessel, built in 1960 by Mitsubishi Zosen (Shimonoseki, Japan) and owned at the time of loss by a Greek company, sank near the actual wreck position after the tow parted while they were being towed by the motor tug *Ocean Shore*, which picked up the crew.

Additional dives are planned for the future to find the data plate or the bell of the ship in order to confirm its identity.

Vickers Wellington

September 26, 2017
Sicily, Italy

A team of GUE divers, led by Fabio Portella of Capo Murro Diving Center, discovered the wreck of a Vickers Wellington off the Sicilian coast near Capo Murro di Porco (Syracuse). The Wellington was an English twin-engine, long-range medium bomber widely used during WWII. These aircraft took off from Tunisia and Malta to bomb Sicilian strategic targets. The Augusta naval base was one of these targets, and it’s likely the plane was shot down while coming back from this target.

A key feature of the aircraft was its geodetic airframe construction. The fuselage was built from 1,650 elements, consisting of duralumin W-beams.



Wooden battens were screwed to the beams and were covered with Irish linen. Multiple engine and propeller configurations were used for the Wellington; this wreck was equipped with two Bristol Hercules 14-cylinder, two-row radial engines.

The project has resulted in the creation of a guided dive tour, using a line that connects the different parts of the wreck that lie destroyed on a sandy bottom at about 34 meters.



Portofino, Italy

In August 2012, during an exploration dive of the deepest and unexplored seabed of the Portofino National Marine Park, a team of GUE divers, composed of Bruno Borelli and Niccolò Crespi, came across the remains of what seems to be an ancient shipwreck at about 60 meters deep. The discovery was immediately reported to the competent authorities that, with the help of the photographic material collected by the two divers, declared the site to be of archaeological interest and prohibited any human activity on and below the surface within a few hundred meters of the site.

The two divers who discovered the wreck could not rest; the images of the great anchors, the huge cannons, and the many other unidentified objects were continuously on their mind, leading them to read and speculate about the type of ship, the period it belongs to, and the possible causes of its demise. They called their discovery “The Cannons of San Giorgio” for the homonymous church nearby that preserves records of the events that took place in that stretch of sea in past centuries.

Five years later, the funds finally arrived to start the scientific investigation. The archaeologists of the Soprintendenza of Liguria wanted to dive and explore the

site themselves, so they contacted Bruno to accompany them with the support of his diving center, Portofino Divers. Piero Labò, a well-known GUE diver, and Ubaldo Pantaleo, a marine biologist and GUE diver, are also part of the small but exciting expedition. Ubaldo is in charge of developing the 3D survey of the site, while Bruno and Piero are in charge of collecting the measurements needed to build the 3D model and taking detailed pictures.

Simon Luca Trigona, the official in charge of the Technical Service of Underwater Archeology (STAS) for the Soprintendenza, did not hide his enthusiasm following the first exploratory dive.

Now, Bruno, Piero, and Ubaldo are authorized to return to the site for a photogrammetry project that will allow the Soprintendenza to have a scientifically detailed image of the site and to identify areas on which to focus future investigations in order to determine the type of ship and the cause of sinking.

In December 2017, the first phase of image acquisition ended and we are working on the production of the 3D model. The collaboration between GUE divers and the Soprintendenza will continue in 2018 for the second phase of the project. Stay tuned!



Fontanazzi Forgotten Branch Project 2017, Italy

May - September

Fontanazzi is a well-known underwater cave in northern Italy. Due to its stable condition, when compared to other local caves, it is probably the most visited cave of the Valstagna area. The first exploration began in 1986 by Gruppo Grotte Giara Modon's members. The first explorers had to struggle with the three famous restrictions found at the entrance, especially the deepest one at 12 meters that didn't allow divers to pass through with their tanks on.

In 1987, the same group of speleologists decided to enlarge the deepest restriction, breaking off a spur of rock. In the early '90s, exploration was productive and the entire shallow area was mapped, but it took from March 1997 to March 2000 to discover the entrance to the deep section, which happened during a dive led by

Alberto Cavedon. From 2000 to 2011, Alberto Cavedon and his group extended exploration in the deep section to a depth of 120 meters.

In 2017, an unusually dry climate for an Italian spring and summer allowed us to conduct several fun dives with exceptional conditions, beginning in April with almost no interruption.

Since there was only a small amount of poor-quality video documentation of the cave, our team decided to invest our enthusiasm in producing several high-quality videos showing the shallow areas of the cave. We started filming the sections of the cave we were confident with and decided to gain an intimacy with the rest by conducting dives in less visited branches.

One of these areas, called Pirate's Branch, starts

with a major restriction at 400 meters from the entrance, so we planned the dive in two teams. Team 1 entered the restriction while Team 2 visited the small room opposite to it. While Team 1 waited, Team 2 checked the small recessions in the room; the one heading east was known to be about 20 meters long, but we couldn't remember any information about the one heading west, parallel to the restriction. Team 2 started laying the line, and the recession became a tunnel with no restrictions. After a bend to the right, we joined the Pirate Branch's main line.

While resting in the small entrance pool inset in the rock, we shared our achievement with Team 1 and decided to call our finding "The Bypass."

None of us believed we found something new in such a well-known cave, but no one could find a sketch of it on any map, so the next weekend, two of us dived "The Bypass" with a local diver who confirmed us our discovery.

Our growing excitement led us to dive the passage the following week with the rest of the team; our goal was to remove the exploration line and install two jumps. Fortunately, the visibility was 2 to 3 meters, so we decided to let Cristiano lay the line, as he had never dived this part of the cave. He missed the main line and kept swimming into a virgin chimney that climbed upward for 6 meters and then proceeded again, parallel to Pirate's Branch.

This discovery changed the focus of our project, adding the survey of the Forgotten Branch to the video documentation. The 2018 edition of the project will focus on video documentation of the deep area of the cave.

TEAM 2017:

Andrea Gasparato, Cristian Benedetti, Cristiano Rosa, Giovanni Marzari

LINKS:

<https://vimeo.com/247631304>

<https://vimeo.com/198542148>

<https://vimeo.com/198978475>

<https://vimeo.com/215545900>





The Crack: Documentation of a Tectonic Cavity on Garda Lake's Seabed, Italy

April 2017

One of the most interesting dive sites on Garda Lake's east coast is Tempesta. The shore entrance allows divers to explore both the north and south walls.

The variety of landscape encountered at this dive site is caused by the proximity of the headland to the tectonic ridge that rides the bottom of the lake from north to south. Following the south wall, it is possible to find several fissures that are several meters long, but they are too small to allow divers to enter.

Around the year 2000, local divers reported an impressive crack at 50 meters that was big enough to enter, but since then, documentation was unavailable and even the location remained uncertain.

During a fun dive in spring 2016, our team came across the crack at a depth of 52 meters. As we only gathered scattered information, we were uncertain about its extent and accessibility. The goal of our pro-

ject was to document the position and dimensions of the crack through the creation of a geo-localized map and a video.

At first, we decided to focus on the video documentation, but several dives were needed to confirm the feasibility of running the canyon with all the necessary equipment. Fortunately, surveying has been straightforward due to the simple shape of the cavity.

2017 TEAM

Andrea Gasparato, Cristian Benedetti, Cristiano Rosa, Giovanni Marzari

LINKS

<https://vimeo.com/246659062>



Ghost Fishing Baia delle Sirene, Garda Lake, Italy

5 - 6th January 2017

Baia delle Sirene is a small bay on the east coast of Garda Lake, and its impressive landscape has astounded several writers, including Virgil and Goethe. Its particular beauty continues underwater, making the promontories a well-known dive site.

Unfortunately, storm currents on the northern boundary meet an obstacle that diverts their flow, making it easy for lost fishing nets to remain stuck on the rocky wall. As the access to Baia delle Sirene is on private property, both logistical and economic issues are encountered when planning a structured cleanup. Boat support and county permission is needed, and anchor drops are not permitted in the bay.

We decided to organize the cleanup to take place over the Christmas holidays, as it is the low tourist season and access by car to a small harbor south of the bay is possible. Despite the low water temperature during winter season (8 degrees Celsius), we planned two 240-minute dives to clean the wall's shallow portion (0 to 30 meters), dividing the four divers in two teams. The first team did cleanup and the second team did video documentation.

In order to be independent from surface boat support, we used DPVs to cover the gap between the entrance point and the actual dive site (1 kilometer). The most difficult aspect we encountered was transporting the recovered nets, as both our dives were very productive and we recovered more than 80 kilograms of net on each dive.

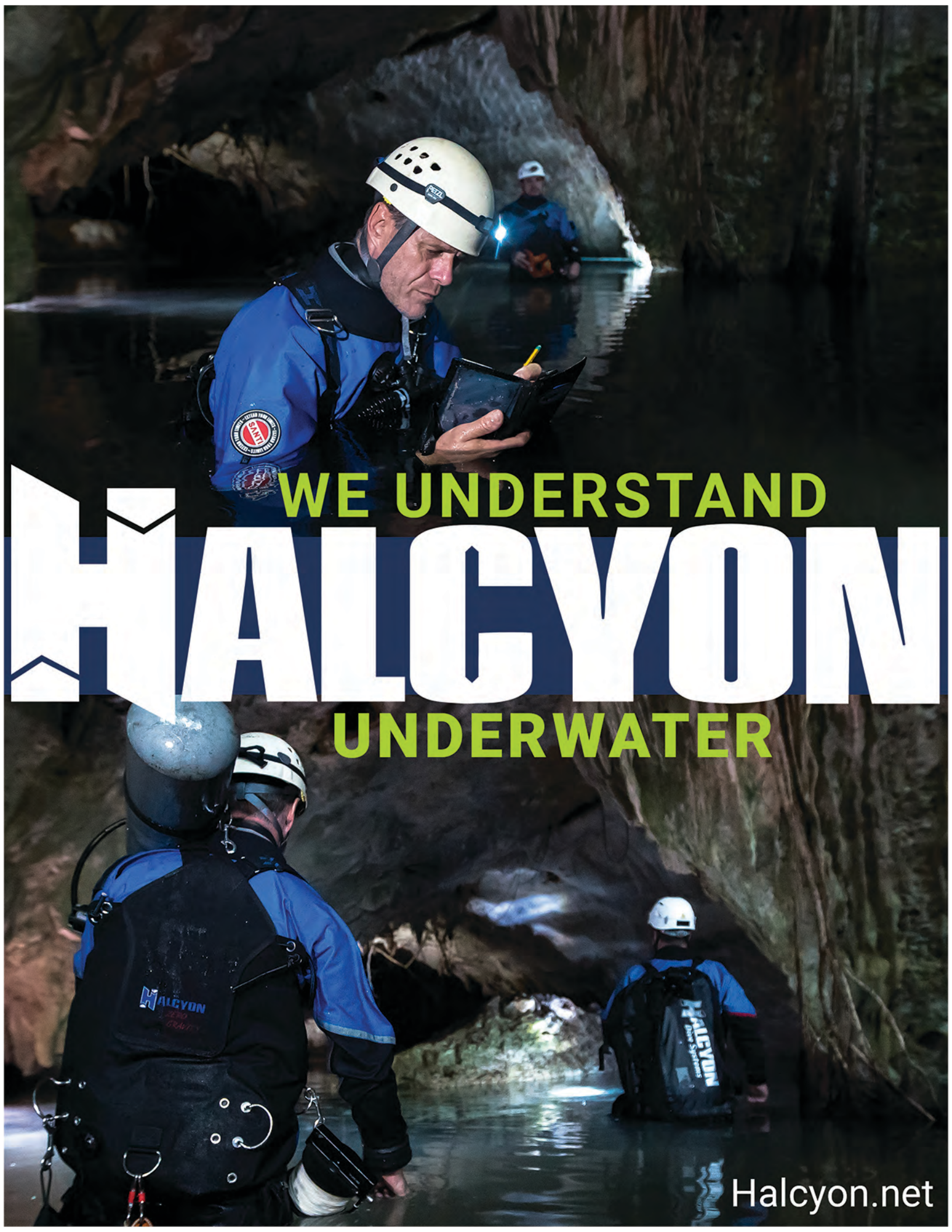
Since winter is approaching again, 2018's project will focus on the wall's deep portion (30 to 42 meters).

2017 TEAM

Andrea Gasparato, Cristian Benedetti, Cristiano Rosa, Giovanni Marzari

LINKS

<https://vimeo.com/226632529>



WE UNDERSTAND

HALCYON

UNDERWATER