



**MEDIA RELEASE**

**Victor Vescovo dives the Kermadec Trench (South Pacific), successfully completing dives to all four of the South Pacific's deepest trenches for the first time, and the first person to dive all four of the world's 10,000-meter trenches**

DALLAS, TX (December 14, 2021) – Caladan Oceanic, led by explorer Victor Vescovo, along with expedition partners EYOS Expeditions, Triton Submarines, and Greenroom Robotics, successfully dived to the deepest point of the Kermadec Trench in the South Pacific Ocean on December 11th at a preliminary, calculated depth of 10,003 meters (+/- 4 meters). It is the fourth-deepest ocean trench in the world and this was the first time a human had ever dived to its deepest point. The completion of this dive sets a new world record for Vescovo, having now completed dives to all four<sup>1</sup> of the world's 10,000-meter trenches - the Mariana, Tonga, Philippine and Kermadec trenches.

The Kermadec Trench was the final dive in the South Pacific leg of the *Ring of Fire 2021* diving expedition, which has also included the first ever human descents to the bottom of the San Cristóbal (8,483 meters), Santa Cruz (9,142 meters) and New Hebrides (7,794 meters) trenches. All dives were exploratory, mapping, and hardware-testing in nature and did not retrieve any water, soil, or life samples in accordance with local rules. No marine science personnel were aboard the vessel at any time.

Victor Vescovo said upon his returning from the deep: "I am so happy to have had the opportunity to dive the Kermadec Trench. It is one of Earth's only four 10,000-plus meter trenches, and with this dive, I am so pleased to have been able to pilot the *Limiting Factor* submersible to all of them. I'm very proud of the team at Triton that designed, built, and perfected this craft which gives us access to any place on the seafloor at any time, repeatedly and safely. It is the only commercially-certified submersible capable of such extreme dives and is an amazing tool for scientific research. It was also great to work with EYOS Expeditions and Greenroom Robotics who provided logistical and technical support for the expedition."

---

<sup>1</sup> The deepest trench in the world is the Challenger Deep, Mariana Trench with a depth of 10,935 meters as per a recent peer-reviewed paper (See: <https://doi.org/10.1016/j.dsr.2021.103644>). The second-deepest is the Horizon Deep, Tonga Trench at 10,823 meters. The third-deepest is the Emden Deep, Philippine Trench at 10,045 meters. The Kuril-Kamchatka Trench in the north Pacific is not deeper than 10,000 meters, as is often reported, as a result of two separate mapping expeditions conducted there in 2020 and 2021 with the most advanced sonar currently installed on a civilian vessel (the Kongsberg EM124), which establish its depth at 9,650 meters +/- 13 meters.

The maximum depth recorded at the Kermadec Trench's lowest point was 10,003 +/- 4 meters, as measured by multiple, independent and calibrated depth instruments onboard the submersible *Limiting Factor*, as well as onboard the unmanned robotic lander "Skaff" which the submersible rendez-vous'd with near the deepest point.

Vescovo reported seeing extreme underwater terrain including jagged underwater canyons and cliffs, as well as what appeared to be "brilliant, gold-colored bacterial mats indicative of chemosynthesis, living off the minerals and gases coming from the rocks and fissures." (See picture)

The *Ring of Fire 2021* expedition commenced by journeying south from Guam on November 4th to thoroughly map the Massau, West Melanesian and New Britain trenches in higher detail than available previously, before making the first crewed descent of the San Cristóbal Trench south of the Solomon Islands at a maximum depth of 8,483.

"I've seen brightly-colored bacterial mats living and growing at 9,000-plus meters in multiple trenches now, in the total absence of sunlight, feeding off the trace minerals and methane seeping off the rocks in the deeps. This is a very different type of life and metabolism than we see in shallower water or on land. It's more similar to what we might find on other planets, I imagine," explained Vescovo.

This mission has also seen the first crewed descents to the absolute bottoms of the Santa Cruz Trench, to a maximum depth of 9,142 meters, and New Hebrides Trench, maximum depth of 7,794 meters.

"The bottom of the San Cristóbal Trench had a rather unique topography and I was surprised to see a jellyfish at a pretty extreme depth of 8,483 meters. The New Hebrides Trench by contrast was unusually sterile and cloudy - possibly due to recent seismic activity - although the sub's cameras did manage to catch another glimpse of a solitary jellyfish at approximately 7,780 meters. Seeing life at these depths is extraordinary given the ambient pressure is more than five tons per square inch in a temperature of two degrees C" said Vescovo.

Since leaving Guam, 130,000 square kilometres of deep ocean terrain was been mapped during the expedition, including the first comprehensive mapping of the Melanesian and New Britain Trenches with the state-of-the-art Kongsberg EM124 sonar, which has significantly higher resolution than any predecessor deep-ocean sonar. This mapping, like that in all of Caladan Oceanic's previous expeditions, is being conducted to support GEBCO's Seabed2030 project, whose goal is to map the remaining 85% of the seafloor that is unmapped by 2030.

"Given that we are diving into places that have never had a human visit, we are always a bit surprised by what we find. If the trenches are nearly identical, or very different, then that helps contribute to the overall knowledge of the deeps. A submersible allows us to cover a heck of a lot more area than stationary, dropped landers, or even remotely-piloted vehicles that move quite a bit slower than the sub - especially in challenging terrain. Manned submersibles offer a unique capability set that other technologies do not." said Vescovo.

The team's next mission is to conduct the first crewed descents of the Atacama Trench off the coast of Chile as well as an attempt to make the first crewed descent

of the Mid-American Trench off the western coast of Mexico. Both dives will be accompanied by formal scientific team members from Chile or Mexico, respectively. Both trenches follow the deep-ocean fault lines located off the western coast of Latin America. No human has ever visited the deepest points of these trenches.

For more information, visit [caladanoceanic.com](http://caladanoceanic.com) and follow us on Twitter @VictorVescovo for ongoing updates.

- END -

---

For any Press enquiries, please contact:

**John Cotton**

+44: 7788 276922

E: [john@jcapr.co.uk](mailto:john@jcapr.co.uk)

---

## **NOTES TO EDITORS**

### **About Caladan Oceanic**

Caladan Oceanic is a private company dedicated to the advancement of undersea technology and supporting expeditions to increase the understanding of the oceans. Founder Victor Vescovo, a former Commander in the US Navy, has long had a passion for exploration and has summited the highest peak on all seven of the world's continents including Mt. Everest, and skied at least 100 kilometers to both the North and South Poles. With the completion of the Five Deeps Expedition in August 2019, Vescovo became the first person in history to have been to the top of all the world's continents, to reach both poles, and to descend to the bottom of all its oceans. He also holds the record for the most dives to the bottom of Challenger Deep, the deepest point on the planet, a total of twelve times. He was awarded the Explorer's Club Medal in March 2020 and will receive the 2021 SeaKeeper of the Year Award at the International SeaKeepers Society ceremony in Miami on February 17th, 2022 as well as the Don Walsh Award for Ocean Exploration by the Society for Underwater Technology (SUT) and The Marine Technology Society (MTS) in London in early 2022.

### **About EYOS Expeditions**

EYOS Expeditions has been designing complex and challenging expeditions for private vessels since 2008. Drawing on the decades of experience of the company's co-founders, the EYOS team has delivered over 1,200 safe and successful expeditions to some of the most remote destinations on Earth. EYOS Expeditions holds several "world firsts" and routinely take clients to destinations rarely or never before visited. EYOS Expeditions and sister company Expedition Voyager Consultants have worked behind the scenes on many of the industry's ground-breaking itineraries and have a long history of delivering once-in-a-lifetime experiences for clients while maintaining the highest standards of safety, professionalism, and environmental stewardship. EYOS Expeditions is today regarded as the industry leader for planning and operating remote expeditions using submersibles.

## **About Triton Submarines**

Triton Submarines of Sebastian, Florida, is the most experienced civil submarine producer in the world today – and the only contemporary manufacturer of acrylic-pressure-hull-equipped personal submarines to deliver multiple classed and certified vessels capable of diving to 3,300 feet (1,000 meters) as well as to full ocean depth (11,000 meters). Triton Submarines senior staff members have over 350 years of combined experience with more than 80 different submersibles, and their operations team have together logged over 25,000 dives. Triton clients also enjoy superlative after-sales service and technical support from a company dedicated to their total satisfaction.

## **About Greenroom Robotics**

Greenroom Robotics is an Australia-based company specializing in technologies related to deep-sea exploration. The company led the recent refit of the submersible *Limiting Factor* in Perth, Australia to ensure it was ready for Caladan's South Pacific 2021 expedition and is still supporting its continuing missions in the areas of Test & Evaluations, Submersible Operations, and Maintenance at Sea. Caladan Oceanic has made specific use of Greenroom's novel mission management software for automated data management and post-mission analysis, which now handles the comprehensive data and media generated for each dive.

##