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PRESS RELEASE

### **Drone research vs. marine pollution: 1-0**

Led by conservation biologist, Dr Sol Milne and [Ghost Diving Greece](#) Coordinator, Nikos Vardakas, the research project 'Coasts Untangled' aims at developing aerial surveying methods to better see into water with rugged & complex bottom topography, coupled with scuba-diving transect surveys in order to locate lost fishing gear, ultimately aiding their removal. The project is supported by Ocean Conservancy's Small Grants Program – Global Ghost Gear Initiative.

In October 2022, the first ghost net, a gill net measuring 10 meters, was retrieved with the use of this methodology, in Greece's Attica region. Gillnets are designed to hang in the water, with weights on the bottom and small floats on the top, suspending it in the water column. When they are lost in the seas and oceans, they indiscriminately catch all kinds of marine life, condemning them to a slow and painful death. This is a first of its kind achievement not only in Greece but worldwide for Ocean Conservancy's Global Ghost Gear Initiative as well as for [Ghost Diving](#), 'Coasts Untangled' main partner.

"Great to see a plan come full circle. We found this gillnet during a drone survey on Patroklos Island. It was lost or discarded by fishers and caught on the rocks where it could cause entanglement of wildlife. Using coordinates from the drone image, we went out and collected it," says Dr Milne.

The effects of lost fishing gear are wide-reaching & notoriously difficult to quantify. It is estimated almost 200,000 tonnes of fishing gear are currently moving freely in subtropical gyres alone, threatening marine wildlife & the ecosystems where they accumulate.<sup>1</sup> Fishing nets are usually made of plastic and do not biodegrade, accumulating in the sea for hundreds of years all the while losing tiny particles called microplastics that end up in the stomachs of fish and our own food chain.

In the first phase of the project, the team surveyed a total area covering 15 square kilometers of coastline across 17 sites, collecting 25,790 images, which are being analyzed for the presence of nets & plastic debris. Once images were collected, divers conducted underwater transects, traveling up to 2 km along sites that had been surveyed by drone, recording all the way along in search of lost fishing nets.

With the introduction of more data, the methodology that surprisingly enough has its roots in orangutan research, is continuously being further developed. The research team hopes to expand this effort into new regions, exploring how aerial monitoring can be used to combat marine pollution globally in the upcoming years.

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<sup>1</sup> Eriksen M, Lebreton LCM, Carson HS, Thiel M, Moore CJ, Bornerro JC, et al. (2014) Plastic Pollution in the World's Oceans: More than 5 Trillion Plastic Pieces Weighing over 250,000 Tons Afloat at Sea. PLoS ONE 9(12): e111913. <https://doi.org/10.1371/journal.pone.0111913>



Once the net was brought back to land, the weights and floats were removed so that the plastic material can be recycled. The [Healthy Seas](#) organisation ensures that nets recovered by Ghost Diving teams around the world become a new resource. Nylon nets are regenerated together with other nylon waste to produce [ECONYL®](#) yarn, the basis for new products such as socks, swimwear, accessories, carpets and more.

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### Notes to Editors

#### **About Ghost Diving**

Ghost Diving is an international non-profit organization of volunteer technical divers specialized in the removal of lost fishing gear and other marine debris since 2009. To this day, the Ghost Diving team has carried out diving projects independently or in collaboration with several international environmental and/or diving organizations like: Healthy Seas Foundation, Greenpeace, WWF, Global Ghost Gear Initiative and Global Underwater Explorers. <https://ghostdiving.org/>

#### **About Sol Milne, Ph.D.**

Sol Milne is a conservation biologist, focused on the impact of human activity on animal habitat, both marine and terrestrial. During his PhD he studied the effects of human land-use on orangutan nesting behaviour in Northern Borneo & how targeted restoration work can improve habitat quality. He began working with Global Ghost Gear Initiative (GGGI), using drones to identify lost fishing gear and marine debris in tropical waters of Myanmar, The Maldives and the Caribbean, with the aid of machine learning algorithms to identify ghost gear. He since founded Wolf Fish Ltd, a company focused on equipping conservation initiatives with the tools necessary to monitor marine and terrestrial habitat using drones. He is the Founder & Lead Scientist of Wolf Fish Ltd.

#### **About Nikos Vardakas**

Nikos Vardakas is a dedicated diver, explorer and educator and the coordinator of Ghost Diving Greece. He started diving in 1999 and has been actively teaching since 2002 for numerous diving organizations. He is currently an active Hypoxic Trimix instructor with SSI and a Fundamentals instructor for GUE. In 2002, on a quest to improve his skills and know-how, he came across the DIR (Doing It Right) philosophy, developed by GUE, adopting the principles that helped him develop a strong diving practice which continues to this day. He is also the GUE representative in Greece and, in 2009, was the first Greek to be certified as a GUE instructor. He hopes to pass on his knowledge to the Greek diving community. In 2018 he founded Scubalife Dive Centre with a vision to offer divers the opportunity to expand their diving frontiers and promote Greece as one of the best diving destinations in the Mediterranean. Besides training, Nikos is also involved in numerous shipwreck exploration projects in Greece.



**Photos:** [https://www.dropbox.com/sh/ofvg0xsamb62pnt/AADJfTcC-ShgD13N-rVQws\\_Ca?dl=0](https://www.dropbox.com/sh/ofvg0xsamb62pnt/AADJfTcC-ShgD13N-rVQws_Ca?dl=0)

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