

Study reveals how shipwrecks are providing a refuge for marine life

November 23 2023



Credit: Unsplash/CC0 Public Domain

An estimated 50,000 shipwrecks can be found around the UK's coastline and have been acting as a hidden refuge for fish, corals and other marine species in areas still open to destructive bottom towed fishing, a new

study has shown.

Many of these wrecks have been lying on the seabed for well over a century, and have served as a deterrent to fishers who use bottom towed trawling to secure their catches.

As a result, while many areas of the seabed have been damaged significantly in areas of heavy fishing pressure, the seabed in and around shipwrecks remains largely unblemished.

The new research found that the average density of marine life in areas still open to trawling was 240% greater within wreck sites than in sites actively being used for bottom towed fishing.

In parts of the seabed within a 50m radius of the wrecks, the difference was even greater with the density of marine life 340% greater than in the control sites.

Conversely, in sites closed to trawling, the abundance was 149% greater than on wrecks and 85% greater than on the seabed within a 50m radius of the wrecks.

The study, conducted by the University of Plymouth and Blue Marine Foundation, has been published in the journal *Marine Ecology*, and is the first to demonstrate the increased ecological importance of shipwrecks—and the areas surrounding them—in areas of heavy fishing pressure.

Jenny Hickman, the study's lead author, completed the research as part of her MSc Marine Conservation program at the University of Plymouth.

She said, "The industrial use of bottom towed fishing gear has been commonplace since the 1800s, and has significantly altered marine

communities and ecosystem services. Outside of legal protection, only areas inaccessible to trawlers are offered any protection, which is why shipwreck sites are rarely subject to trawling pressure. As many have been in situ for more than 100 years, they offer a baseline of ecological potential when trawling pressure is reduced or removed."

The research was conducted around five shipwrecks off the Berwickshire coast, which are all thought to have sunk in the late 19th and early 20th centuries.

Constructed from a range of different materials, they sit between 17 and 47 meters beneath the [ocean surface](#), with some in areas open to bottom-towed fishing and others in areas where some types of fishing are restricted.

The research teams, supported by local boat crews, gathered video footage of the shipwrecks, the surrounding 50m radius, and control locations more than 150m from the wreck site.

Footage of all the sites was then assessed, with the researchers, who had a particular interest in finding species deemed to be vulnerable to trawling if it is allowed to continue.

Joe Richards, Scotland Project Manager for Blue Marine Foundation and one of the study's co-authors, said, "It has long been thought that shipwrecks could be playing an important role in providing sanctuary for [marine species](#) to utilize. It is brilliant to see this proven in this study. The research provides and insight into what might be possible if bottom towed fishing activity is reduced. This feeds into our wider understanding of shipwrecks' potential to contribute to ecosystem recovery and enhancement, given the sheer number found on the seabed."

The University and the Blue Marine Foundation have worked together for many years examining the benefits of Marine Protected Areas (MPAs).

This has included studies in the Lyme Bay MPA—off the South Coast of England—which have provided foundational evidence for the UK Government's current approach to MPA management.

Researchers say the latest study demonstrates the importance of factoring wreck sites into future conservation plans, but also the benefits of Marine Protected Areas (MPAs) status.

Dr. Emma Sheehan, Associate Professor of Marine Ecology and senior author, added, "In recent years, the UK has made significant strides in terms of measures to protect the marine environment. There is still much to be done to reach the goal of having 30% of the ocean protected by 2030, but if we are to get close to that we need detailed evidence about what makes our ocean so special and any existing initiatives that are working well. This study builds on our existing work in that regard, and highlights an impact of past human activity that is actually having a positive impact on the seabed today. It is unquestionably something that should be factored into future marine management plans."

More information: Shipwrecks act as de facto marine protected areas in areas of heavy fishing pressure, *Marine Ecology* (2023). [DOI: 10.1111/maec.12782](https://doi.org/10.1111/maec.12782)

Provided by University of Plymouth

Citation: Study reveals how shipwrecks are providing a refuge for marine life (2023, November 23) retrieved 28 April 2024 from <https://phys.org/news/2023-11-reveals-shipwrecks-refuge->

[marine-life.html](#)

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.