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Researchers at the University of Portsmouth have discovered that rates of shipping in the North East Atlantic area rose by 34% in a five-year period.

Even more noticeable, and of major concern to scientists, is the rate of shipping growth in Marine Protected Areas. Analysis of vessel movements in these delicate environments shows an increase of 73% in the same time period.

The report, which was published in *Marine Pollution Bulletin*, is the first detailed survey of shipping activity in the North East Atlantic.

Researchers used data from over 530 million vessel positions recorded by Automatic Identification Systems (AIS). They looked at the change in shipping between 2013 and 2017 across ten distinct vessel types.

In total the study area covered 1.1 million km², including waters off Belgium, Denmark, France, Germany, Iceland, Ireland, The Netherlands, Norway, Portugal, Spain, and the U.K.

Lead author, James Robbins from the Institute of Marine Sciences at the University of Portsmouth, said: "This change is likely to put more pressure on the [marine environment](#), and consequently may have implications for the conservation of exposed and at-[risk species](#)."

"Renewed monitoring effort is needed to ensure that protective measures are adequate to conserve species under threat in a changing environment, where the footprint of human activities is expanding."

This increase in traffic in [marine protected areas](#), may have implications for the very species that these areas are designated to protect. Shipping can have a wide variety of impacts on the marine environment, with

some of the strongest concerns related to the spread of non-[indigenous species](#), noise, chemical, and air pollution, collisions with wildlife, and marine litter.

Shipping has been found to be a likely method of unintended movement for more than half of non-indigenous species in European waters (Katsanevakis et al., 2013). Once introduced, the species can become established and invasive, often having a negative impact on the ecosystems they invade. Invasive species are recognized by the Convention on Biological Diversity as one of the biggest threats to global biodiversity.

Dr. Sarah Marley, Visiting Researcher at the University of Portsmouth and Lecturer at Scotland's Rural College, said: "Shipping is the most widespread human activity in our oceans, carrying a multitude of threats—from subtle impacts like underwater noise pollution to dramatic outcomes when ships hit whales. We need to understand when and where shipping occurs in order to best mitigate these risks."

Some of the greatest shipping increases were found in areas close to the Spanish coast. The Espacio Marino de la Costa da Morte saw a rise of 413% in vessel activity. It is an area designated to protect seabirds. Several areas surrounding the Hebrides off the west coast of Scotland also saw increases in shipping. There was a growth of 463% around the Inner Hebrides and the Minches, a zone designated to protect harbor porpoises. The Vadehavet med Ribe Å, Tved Å og Varde Å vest for Vard off the coast of Denmark, where fish, seals and harbor porpoises are protected saw a 443% increase in ship movements.

Researchers at the University of Portsmouth are calling on [policy makers](#) to closely monitor shipping increases. They believe that as human population growth drives further development and [international trade](#), it is likely that shipping will continue to intensify. Current predictions are

for a global increase of between 240% and 1209% by 2050.

Professor Alex Ford, from the University's Institute of Marine Sciences, said: "Given the well-documented impacts that shipping can have on the marine environment, it is crucial that this situation continues to be monitored—particularly in areas designated to protect vulnerable species and ecosystems which may already be under pressure."

More information: James R. Robbins et al, Shipping in the north-east Atlantic: Identifying spatial and temporal patterns of change, *Marine Pollution Bulletin* (2022). [DOI: 10.1016/j.marpolbul.2022.113681](https://doi.org/10.1016/j.marpolbul.2022.113681)

Provided by University of Portsmouth

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