

Effects of oil and gas platform decommissioning on Moray Firth porpoises

March 8 2024



The Jacky wellhead. Credit: Stephen Hurrell

New research from the University of Aberdeen has shed light on what effect decommissioning could have on local marine mammals.

An increasing number of offshore Oil and Gas, and wind energy structures will be decommissioned in the next decades as they reach the end of their production life.

The removal of man-made marine structures involves various activities that have the potential to impact marine mammals by increasing underwater noise levels. Marine mammals use sounds to communicate as well as for hunting, traveling, and breeding, and therefore, are sensitive to the noise produced by human activities. For instance, it is known that the presence of vessels and the noise generated by them can displace some marine mammal species and decrease their foraging activity.

Scientists from the University's Lighthouse Field Station have been studying harbor porpoises in the Moray Firth for many years, so took the opportunity to monitor their reaction to the decommissioning of a small oil and gas platform, the Jacky Wellhead. Their [study](#) is published in *Marine Pollution Bulletin*.

The complete removal of the Jacky Wellhead gave the team the chance to gather information on the underwater noise produced during the process, and to monitor the response of the porpoises.

Dr. Oihane Fernandez-Betelu, a Research Fellow at the University's School of Biological Sciences who led the study, said, "The removal of the Jacky Wellhead provided us with the opportunity to do a couple of things. First, to characterize the underwater noise produced during decommissioning and then to assess the variation in harbor porpoise behavior before, during, and after the decommissioning activities.

"Ultimately, the goal was to gather information on the effects of decommissioning, aiming to better inform future projects and facilitate the implementation of more effective and environmentally responsible approaches."

During the study, which was carried out in collaboration with the National Physical Laboratory (NPL), the researchers discovered that underwater noise levels (SPL) increased by 30 to 40 dB during decommissioning compared to baseline levels before decommissioning. The main source of underwater noise was attributed to the vessels involved in the process, and the noise of the platform being physically removed was masked by the noise of the three vessels that were present during the decommissioning.

During the process, the team observed that porpoises were displaced by less than 2 km from the site, which is comparable to the effect that vessels have on porpoises

Dr. Fernandez added, "While studies indicate that some marine predators benefit from Man-made Marine Structures (MMS) for foraging, probably due to increased prey abundance, we had anticipated a decrease in porpoise occurrence at the decommissioning site post-platform removal. However, once the vessels departed, porpoise occurrence returned to pre-decommissioning levels even though the structure was not there anymore. In terms of foraging, we found this only slightly decreased near the decommissioning site, but again, once the process was complete, foraging activity returned to original levels.

"We believe that this is the first study to look at the noise produced by decommissioning, and by improving our understanding of the [noise](#) produced by decommissioning activities, we have provided evidence for the consenting process of future projects."

More information: Oihane Fernandez-Betelu et al, Characterising underwater noise and changes in harbour porpoise behaviour during the decommissioning of an oil and gas platform, *Marine Pollution Bulletin* (2024). [DOI: 10.1016/j.marpolbul.2024.116083](https://doi.org/10.1016/j.marpolbul.2024.116083)

Provided by University of Aberdeen

Citation: Effects of oil and gas platform decommissioning on Moray Firth porpoises (2024, March 8) retrieved 6 May 2024 from <https://phys.org/news/2024-03-effects-oil-gas-platform-decommissioning.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.