

# Norway study highlights whale excrement's role in ecosystem

February 9 2023

---



Excrement from minke whales such as this one tagged by a Stanford University team is "worth its weight in gold," researchers say.

Minke whale excrement is "worth its weight in gold" as it plays an important role in fertilizing phytoplankton and thereby reducing the

cetacean's carbon footprint, according to a Norwegian study.

For the first time, researchers from the Norwegian Institute for Marine Research have studied the concentration of nutrients in whale [excrement](#) before it is dissolved in seawater.

"It can sound disgusting, but for the ecosystem it's worth its weight in gold," researchers said in a statement Thursday.

"The idea is simply that the feces fertilize the sea in the same way that cows and sheep do on land," they continued.

The researchers analyzed the excrement of minke whales harpooned by whalers—as Norway is one of few countries allowing the commercial hunting of these cetaceans.

The some 15,000 whales that migrate each summer to the Norwegian archipelago of Svalbard in the Arctic release some 600 tons of excrement on the surface of the water each day, at a rate of about 40 kilograms (88 pounds) per animal.

According to the study, the daily excrement releases about 10 tons of phosphorus and 7 tons of nitrogen into the oceans, nutrients that are essential for the growth of [phytoplankton](#)—microscopic algae that absorb [carbon dioxide](#) through photosynthesis and convert it into oxygen.

The scientists concluded that the minke whale excrement contributed to between 0.2 and 4 percent of daily phytoplankton production in the Arctic Svalbard region.

"The real contribution of whales is probably higher because these estimates do not include urine, which is very rich in nitrogen," research

leader Kjell Gundersen told AFP.

Each minke whale—an animal weighing 40-50 tons as an adult that feeds by filtering large quantities of water—releases "several hundred litres of urine" per day.

"If there are fewer whales, there is a risk that there will be less fertilization of the ocean," Gundersen said.

"More phytoplankton production also means more CO<sub>2</sub> is absorbed," he added.

"This is positive for the climate," he noted, "but we don't know the net balance of whales in terms of greenhouse gases" because cetaceans also emit methane when they breathe.

This question, which is still largely unexplored, will be the subject of a European study that will start in June and last four years.

© 2023 AFP

Citation: Norway study highlights whale excrement's role in ecosystem (2023, February 9) retrieved 28 April 2024 from

<https://phys.org/news/2023-02-norway-highlights-whale-excrement-role.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.