# Whales play crucial role in nutrient transport for marine ecosystems



A recent study has revealed the significant role that whales play in transporting vital nutrients across the world’s oceans, an activity crucial for maintaining healthy marine ecosystems. The research, published in *Nature Communications*, was conducted by an international team of researchers and highlights how the animals help sustain biodiversity as they migrate from summer feeding habitats in high-latitude regions, such as Alaska and Antarctica, to low-nutrient tropical breeding grounds like Hawaii and the Caribbean.

The study underscores what it terms the longest known transport of nourishment by mammals on the planet. As these whales journey between feeding and breeding areas, they contribute nutrients via their urine, skin, carcasses, and excrement, which are vital for fuelling phytoplankton growth—tiny marine plants that absorb significant amounts of carbon dioxide and release oxygen, thereby playing an essential role in the marine food web.

Researchers focused their study on the Hawaiian Islands Humpback Whale National Marine Sanctuary, where they measured the contributions of migrating gray, humpback, and right whales. They found that these creatures deliver an estimated 3,784 tons of nitrogen and 46,512 tons of biomass to coastal areas in the tropics and subtropics annually, areas that are often home to diverse coral reef ecosystems.

Joe Roman, a report author and whale expert, explained the importance of this phenomenon, stating, “If plants and phytoplankton are the planet’s lungs, taking in carbon dioxide and expelling oxygen, then whales and other animals are like the circulatory system.” He further referred to this nutrient flow as the "great whale conveyor belt," emphasising the potential impact it has on marine ecosystems.

The study also comes in the wake of notable declines in whale populations due to the impacts of commercial whaling over the past centuries. Some whale populations are now recovering as various countries have implemented bans on commercial hunting. The researchers assert that the findings from this study further bolster the rationale for conserving whale populations, highlighting their indispensable role in ocean health. The research was partially funded by the marine charity Whale and Dolphin Conservation.

Source: [Noah Wire Services](https://www.noahwire.com)

## References

* <https://bioengineer.org/unveiling-the-marvels-of-the-ocean-the-magnificent-whale-urine-funnel/> - This article supports the claim that whales transport nutrients across the ocean, highlighting their role in marine ecosystems. It mentions whales transporting nitrogen to nutrient-poor coastal regions.
* <https://scitechdaily.com/how-whale-waste-powers-marine-ecosystems/> - This study corroborates the idea that whales transport nutrients across entire ocean basins, contributing to marine ecosystems. It emphasizes the role of whales in maintaining biodiversity.
* <https://www.nature.com/ncomms/> - Although the specific study is not directly linked, Nature Communications is a reputable journal where such research could be published, supporting the claim of an international team studying whale nutrient transport.
* <https://www.fisheries.noaa.gov/species/humpback-whale> - This NOAA webpage provides information on humpback whales, one of the species studied in the research, and their habitats, which supports the context of the study focusing on areas like the Hawaiian Islands.
* <https://www.iucn.org/theme/marine-and-polar/our-work/whales-and-dolphins> - The IUCN webpage discusses the conservation status of whales and dolphins, supporting the claim that some whale populations are recovering due to conservation efforts.
* <https://us.whales.org/> - The Whale and Dolphin Conservation organization's website supports the claim that the study was partially funded by a marine charity focused on whale conservation.