

Jellyfish joyride a threat to the oceans

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The numbers of jellyfish, like this 'Catostylus', appear to be on the increase due to a combination of pollution, overfishing and climate change.

Early action could be crucial to addressing the problem of major increases in jellyfish numbers, which appears to be the result of human activities.

New research led by University of Queensland and CSIRO Climate Adaptation Flagship scientist, Dr Anthony Richardson presents convincing evidence that this "jellyfish joyride" is associated with overfishing and excess nutrients from fertilisers and sewage.

"Dense jellyfish aggregations can be a natural feature of healthy [ocean](#)

[ecosystems](#), but a clear picture is now emerging of more severe and frequent jellyfish outbreaks worldwide," Dr Richardson, of UQ's School of Mathematics and Physics, said.

"In recent years, jellyfish blooms have been recorded in the Mediterranean, the Gulf of Mexico, the Black and Caspian Seas, the Northeast US coast, and particularly in Far East coastal waters.

"The most dramatic have been the outbreaks in the Sea of Japan involving the gargantuan Nomura jellyfish which can grow up to 2m in diameter and weigh 200kg."

The new research, by Dr Richardson and colleagues at the University of Miami, Swansea University and the University of the Western Cape, has been published in the international journal: Trends in [Ecology and Evolution](#), in time for World Oceans Day today, June 8.

"Fish normally keep jellyfish in check through competition and predation but overfishing can destroy that balance," Dr Richardson said.

"For example, off Namibia intense fishing has decimated sardine stocks and jellyfish have replaced them as the dominant species."

[Climate change](#) may favour some jellyfish species by increasing the availability of flagellates in surface waters - a key jellyfish food source. Warmer oceans could also extend the distribution of many jellyfish species.

"Mounting evidence suggests that open-ocean ecosystems can flip from being dominated by fish, to being dominated by jellyfish," Dr Richardson said.

"This would have lasting ecological, economic and social consequences.

"We need to start managing the marine environment in a holistic and precautionary way to prevent more examples of what could be termed a '[jellyfish](#) joyride'."

The full research paper is available at:

www.sciencedirect.com/science/journal/01695347

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