

Toxoplasmosis and Hector's and Māui dolphins

Toxoplasmosis: a significant threat to Hector's and Māui dolphins

Toxoplasmosis is an infection caused by the *Toxoplasma gondii* parasite. The parasite is common and capable of infecting many animals, including humans. Up to one-third of people worldwide carry *T. gondii*, although most never develop symptoms.

Toxoplasmosis is, however, a confirmed cause of death in Hector's and Māui dolphins and is likely to be a significant human-caused threat to the dolphins' populations. This is especially the case for the critically endangered Māui dolphin. Toxoplasmosis is a cause of death in marine mammals elsewhere, including southern sea otters and Hawaiian monk seals, and is also known to cause behavioural changes, still births and reduced reproductive rates.

How are dolphins exposed to the parasite?

Cats, both domestic and feral, are the only animal in which the toxoplasma parasite can reproduce. The oocysts (eggs) are spread via cat faeces and can survive for many months in the environment. Rainwater and run-off transport the oocysts into the marine ecosystem through streams, rivers and stormwater drains. Hector's and Māui dolphins can then become infected by consuming contaminated water or prey (eg fish).

Wastewater treatment plants may also be a source of contamination (if cat faeces/kitty litter have been flushed down the toilet). Unfortunately, toxoplasma oocysts cannot be treated by standard wastewater disinfection methods such as UV radiation.

There is no vaccination available for dolphins, and addressing this threat requires multiple approaches to reduce the amount of cat faeces entering rivers, estuaries and the sea.

Actions that can help prevent the spread of *Toxoplasma gondii* to the marine environment



Keep cats indoors



Do not abandon unwanted cats, or feed feral cats



Dispose of cat faeces in the rubbish bin, not the toilet



Support wetland conservation and restoration (wetlands can trap toxoplasma oocysts and prevent them from entering waterways)



Spay or neuter your cat



Include green spaces in your garden or backyard that can help filter rainwater and reduce run-off to stormwater drains.

Find out more and have your say

The current review of the Hector's and Māui dolphin Threat Management Plan proposes the development of a Toxoplasmosis Action Plan to address this threat to dolphins. Public submissions are being sought on this review. The deadline for making a submission is 4 August 2019.

For further details on the review, to access consultation documents and to provide your feedback, visit www.doc.govt.nz/dolphintmp

For more information on toxoplasmosis in people: www.dermnetnz.org/topics/toxoplasmosis

For more information on Hector's and Māui dolphins: www.doc.govt.nz/dolphins



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Conservation
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Is your cat making dolphins sick?

Toxoplasma gondii can travel from land to sea

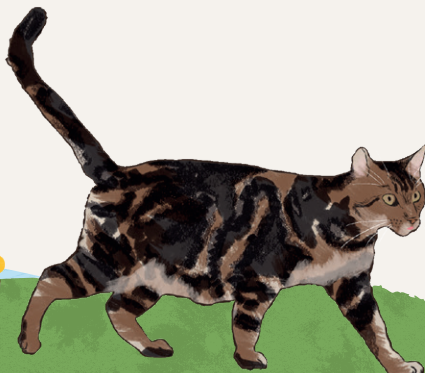
A microscopic parasite

Toxoplasma gondii is a parasite that causes the disease toxoplasmosis.



Spreads via cat faeces

T. gondii eggs spread into the environment via the faeces of cats. Wastewater treatment does not kill the parasite, and the eggs can persist for months.



Develops in the guts of cats

T. gondii is common and can infect many animals (including humans and dolphins) but can only reproduce in the digestive system of a cat.

Travels through waterways

Rain and stormwater run-off transport the eggs to the ocean through streams and estuaries.

The human factor

People can contribute to the spread of *T. gondii* when they allow pet cats to roam, abandon unwanted cats, or fail to control feral cat populations. Flushing cat faeces/kitty litter is also an issue.

Dolphins at risk

Hector's and Māui dolphins become infected with *T. gondii* by consuming contaminated water or prey. Toxoplasmosis is known to cause dolphin deaths.



Diagram adapted from US National Oceanic and Atmospheric Administration Fisheries 'Cat-borne threat to monk seals' poster.



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