



Australian Government



AUSTRALIAN INSTITUTE
OF MARINE SCIENCE

Media Release

November 7, 2018

Reef fish show signs of marine debris in their gut

Microplastics and other man-made fibres have been found in a popular fish species on the Great Barrier Reef.

This is the first study to report the presence of microdebris in wild-caught commercial fish in the World Heritage Area.

Researchers from the Australian Institute of Marine Science in Townsville, found 115 items of man-made debris in the gastro-intestinal tracts of 19 out of 20 juvenile coral trout collected on coral reefs at Lizard, Orpheus, Heron and One Tree Islands.

AIMS marine ecologist Dr Frederieke Kroon said 94 per cent of the items were a mix of semi-synthetic and naturally-derived materials, while only 6 per cent was synthetic.

“Marine debris was visually separated from the gut contents and examined in our laboratories at AIMS, with scientists looking for materials with a polymer composition, using the latest in spectroscopy technology.

“We examined potential ingestion of man-made debris in one-year old coral trout of two species, *Plectropomus leopardus* and *P. maculatus*, which comprise high-value commercial and recreational fisheries species on the Great Barrier Reef,” Dr Kroon said.

As part of the study, AIMS researchers developed a system to clearly identify and classify ingested marine microdebris into three groups; synthetic, semi-synthetic and naturally-derived items.

The study did not examine the potential risk to human consumers, as the items were detected in the fishes’ guts which is traditionally removed before consumption.

“Applying this classification in our study showed man-made items such as rayon, which is a semi-synthetic, were much more common in the fish gut than plastic items such as polyester,” Dr Kroon said.

“This new classification will improve our understanding of ingestion of microplastics versus other man-made debris.

“In the future, we hope this system of classification will help in assessing the risk of such ingestion to the health of the fish, as well as of potential human consumers.”

“In our study, the condition of the coral trout did not appear to be affected by the abundance of ingested microdebris.

“However, we do not know whether there could be any longer-term effects on coral trout reproduction or mortality.”

The source of the microfibrils detected in juvenile coral trout is currently unclear and could range from domestic, land-based and/or shipping-based sewage discharges, or international sources that may be delivering fibres to the Great Barrier Reef through oceanic or atmospheric transport.

AIMS researchers are currently examining other seafood species for microplastic contamination.

The research paper: *Classification of marine microdebris: [A review and case study on fish from the Great Barrier Reef, Australia](#)* is published in *Scientific Reports*.

Media Contact: AIMS Media and communications officer Emma Chadwick (07) 4753 4452 or 0412 181 919 email: e.chadwick@aims.gov.au