

# The New Zealand Herald

## Shark takes long way home

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A shark that swam from New Zealand to Fiji has returned home for Christmas, rounding off an 11,000km odyssey and amazing the scientists who tracked her journey.

In May, "Carol" became the first mako shark in New Zealand waters to be tracked with a satellite "spot" tag, under a Niwa research project funded by the Ministry for Primary Industries and Nova-Southeastern University in Florida.



Mako shark. Photo / Scott Tindale

Scientists watched in amazement as she set off for the Pacific Islands, only to change her mind halfway and turn back for a two-month stay near Ninety Mile Beach.

After a loop around the top of the North Island, the shark again set off for Fiji, reaching her destination in September.

It was what she did next – returning to New Zealand and arriving home only 100km from the spot where she was tagged – that most surprised scientists.

In the space of seven months, the 1.8m shark clocked up more than 11,300km, covering up to 100km a day.

This month, she cruised around the East Cape and was tracked near Mahia a few days ago, probably bound for Napier.

"This shark did some surprising things," Niwa principal scientist Dr Malcolm Francis said.

"First she headed off toward Fiji, which was kind of what we expected, then she turned around and came back again – which was totally unexpected."

When she did reach Fiji, it was thought she would stay there for winter.

"We thought she'd only come back when the waters got warmer in summer, but she kind of turned around and came back straight here anyway – and the water wasn't much warmer than it was when she left."

With a sample of only one, researchers could draw few conclusions – but Carol's adventure has changed assumptions about mako behaviour.

"We used to think they disappeared from our waters during autumn, winter and spring and headed off to the tropics," Dr Francis said.

"We also didn't know where exactly they went, what route they took and how long it took to get there. This kind of tag gives us several fixes a day."

More than 60 species of shark are due in New Zealand waters over summer, among them great whites, seven-gills, blue sharks, hammerheads, threshers and the occasional tiger shark.

But humans can expect to see few of these species, as most stay in deep water.

People were more likely to confront the "fish and chip" variety – school and rig sharks – or bigger species such as bronze whalers and basking sharks.

Great whites would roam all around our coastline over summer, especially in areas where they could find food, but sightings were rare.

### **Where's Grim?**

That's the question on the mind of Department of Conservation shark expert Clinton Duffy, who hasn't seen Grim since the island-hopping great white dropped off the radar last year.

Grim, who was a 3m juvenile when tagged off the Stewart Island in 2010 and would likely span 3.5m today, was last seen by Mr Duffy in March last year.

Scientists have tracked him visiting Fiji, Tonga and Niue before Grim sent a signal from the Louisville Seamount chain, northeast of New Zealand, just over year ago.

"I'd love to know where Grim is, but we haven't heard anything from his tag for a while," Mr Duffy said.

"We did have a report from a caged diving operation at Stewart Island he was seen in May this year, but that hasn't been confirmed."

But with Stewart Island now boasting a summer smorgasbord of seals, Mr Duffy wouldn't be surprised if that's where Grim was now.

## A shark's tale



# 'Carol'



- A young **mako**, about **1.8m long**.
- Is the first mako to be electronically "**spot-tagged**" in New Zealand waters and tracked.
- Has been covering remarkable distances of between **80km** and **100km** each day.
- Around ocean shelves and areas where food can be found, often slows down to a "cruise speed", still covering **20km-50km** each day.
- Surprised scientists by **leaving New Zealand** for the Pacific Islands - and then returning.
- Her journey was markedly different from that of another mako, which swam from Australia to the Indian Ocean - and stayed there.



Picture: Scott Tindale / Herald graphic

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