Taking the bite out of shark DNA

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Macquarie University marine scientist Heidi Ahonen.

(PhysOrg.com) -- Extracting shark DNA has been somewhat of a challenge in the past, with scientists having to overcome the obvious hurdles associated with carrying out biopsies on live and rather uncooperative specimens.

Now, two Macquarie University marine scientists, Heidi Ahonen and Dr Adam Stow, have come up with a way of extracting the DNA without disturbing sharks in the wild - by taking samples from their old teeth.

Extracting DNA from sharks is not as simple as with other animals, given that they do not have the bony skeleton that is essential in order for

the traditional extraction method to work.

Thanks to the unique ability sharks have to replace their teeth throughout their lifetime, however, old teeth may be collected from the sea floor in areas where sharks are known to aggregate.

Other DNA sources could include trophy jaws and teeth found in museums and private collections.

"Sadly, trophy jaws and teeth from sharks are relatively commonplace, whereas living sharks are becoming increasingly rare," Ahonen said, when interviewed by Nature News.

"This method allows information locked away within the teeth and jaws to be exploited to assist with conservation management."

Ahonen and Stow use a hand drill to extract a small amount of material from a shark's tooth or jaw. They then combine the material with a mixture of detergents and enzymes in order to release the DNA.

The new extraction technique will assist the marine science team at Macquarie in their study of grey nurse sharks and variations in shark genetics over time.

Ahonen and Stow's research has been published in the *Journal of Fish Biology.*

Provided by Macquarie University

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