

A documentary airing tonight on ABC's Four Corners, "[Shark Alarm](#)", comes on the heels of a [spate of shark bites in New South Wales](#) and raises questions about our relationship with these formidable animals.

Why do sharks bite humans? Are shark numbers "exploding"? If they are, is that a good or a bad thing? And the ultimate question (from a human point of view, at least): how can we make ocean users safer?

Anyone who says that they can confidently predict when, where or why sharks bite people is almost certainly wrong, regardless of whether they're a scientist, a politician or a journalist. Why? Partly because we simply don't know enough about sharks to anticipate their moves, and partly because attacks are [so rare](#). Despite the media [hype](#), you're still more likely to [drown](#) than be bitten by a shark.

The inconvenient truth is that ocean users may simply have to accept the risk of this very rare event, as unpalatable as that may be. But if that makes you uncomfortable, here are a few things to consider.

The shark population "explosion" cited as an explanation for the rise in attacks is very unlikely to be real. Within the animal kingdom, sharks are famously slow reproducers. Female great white sharks, for instance, typically produce a couple of offspring every other year, and only start reproducing [once they reach 17 years of age](#). The frilled shark *Chlamydoselachus anguineus* gestates for a period of [3.5 years](#).

As a result, sharks are incapable of "baby booms" and indeed are very [sensitive](#) to even low levels of fishing. We may be seeing more sharks in some specific areas due to changes in ocean conditions, but rabbits they are not.

All of the scientific evidence points to declines rather than increases in the numbers of these animals, both [globally](#) and in Australia's own [backyard](#). The apparent uptick in shark bites is

probably due to
[water](#)
more sharks.

[more people in the](#)
rather than

More sharks doesn't mean more bites

What's more, even if they were exploding in numbers, there is [no evidence](#) for a link between shark abundance and the likelihood that you will get bitten. Nor is there evidence that catching and killing sharks using drum lines – baited hooks attached to floating barrels – makes people safer, as demonstrated in Hawaii's culling of [more than 4,000 sharks](#).

So would fewer sharks be a good thing? No. A wealth of research shows that top predators like sharks are critical to ecosystem health, including protecting certain fisheries from [collapse](#), determining [where](#) and [what](#) fish eat, when they [spawn](#), how long they spend [hiding](#) in crevices, how deep they [dive](#), how "fat" or [healthy](#) they are, and how fast they [grow](#).

What's more, healthy shark populations may well mitigate against a range of ocean stressors including [climate change](#). In short, healthy oceans need healthy shark populations.

So much for healthy oceans – what about our own safety? Well that remains a challenge, and at the moment we're going the wrong way about addressing it. The ground-breaking Harvard sociobiologist E. O. Wilson famously said:

We are not afraid of predators, we're transfixed by them, prone to weave stories and fables and chatter endlessly about them, because fascination creates preparedness, and preparedness, survival. In a deeply tribal way, we love our monsters..."

To that end, knowledge is power. Destructive drum lines and nets don't create preparedness because they don't make us [safer](#) and they don't help us [learn](#) . Insidiously, they make us feel safer even though we may not be, potentially leading us to enter the water with far less vigilance than we ought to have.

Shark bites have been happening for centuries, but we are still stuck in a Groundhog Day mindset, reacting rather than learning. We need to shift the paradigm and approach the problem with open minds. A big part of this will involve developing an understanding of where and when shark bites occur and how this relates to our use of the oceans.

Investing in research is arguably the best way to prepare. Recent research from James Cook University has [generated insights](#) into the "secret lives" of bull sharks, as has [research on white shark movements and abundance by CSIRO](#) .

Globally, [tagging studies](#) and projects such as South Africa's [Shark Spotter](#) program have taught us much about shark behaviours and movements, which will be critical to reducing human risk. [Non-destructive sampling](#) will be crucial to understanding the abundance and distribution of these animals as we assess their conservation status.

To that end, the New South Wales state government's [decision](#) to invest in new technologies that generate knowledge, rather than simply killing more animals, should be applauded. Our challenge as a nation is to now move beyond crude drum lines and nets that kill sharks and other marine wildlife, and to give that funding instead to programs that help us love our monsters ... through knowledge, not fear.

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Relax, shark numbers aren't booming, but more research can make us safer

Written by The Conversation

beyond the academic appointment above.

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