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Aerial patrols don't see all the sharks, but they're keeping people safe

Duncan Leadbitter

University of Wollongong, dleadbit@uow.edu.au

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Abstract

The recent series of shark bites on the north coast of New South Wales is a politician's worst nightmare, as the government tries to balance public safety with protecting wildlife. In response NSW has stayed away from culling sharks and launched a new program, run through the Department of Primary Industries, Fisheries, to tag, track and monitor sharks. However, more research may not necessarily prove to be the answer because good research takes time and large resource allocations to deal with infrequent events – and politicians don't have the luxury of time. Instead, we should look at programs that are already working, such as aerial patrols.

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Aerial patrols don't see all the sharks, but they're keeping people safe

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[Duncan Leadbitter](#)

Author



1. [Duncan Leadbitter](#)

Visiting Fellow, Australian National Centre for Ocean Resources and Security at University of Wollongong

The recent series of shark bites on the north coast of New South Wales is a politician's worst nightmare, as the government tries to balance public safety with protecting wildlife.

In response NSW has stayed away from [culling sharks](#) and launched a [new program](#), run through the Department of Primary Industries, Fisheries, to tag, track and monitor sharks.

However, more research may not necessarily prove to be the answer because good research takes time and large resource allocations to deal with infrequent events – and politicians don't have the luxury of time.

Instead, we should look at programs that are already working, such as aerial patrols.

Safe beaches for almost 60 years

For almost 60 years the [Australian Aerial Patrol](#) has provided a voluntary, community-funded service spotting sharks over the beaches of the Illawarra and Shoalhaven regions of NSW during the swimming season.

I recall the "shark patrol" over the Wollongong beaches where I grew up almost 50 years ago. I joined as a volunteer four summers ago and enjoy the community service, the challenges of low-altitude flying, and the commitment of volunteers who come from all walks of life.



Spot the sharks. Duncan Leadbitter, Author provided

Recently [on The Conversation](#) Jane Williamson argued that aerial patrols have been “discredited” as an effective method of shark patrol. This is based on a New South Wales [study](#) from Department of Primary Industries researchers which found that plane-based patrols only see 12.5% of all sharks.

Based on this information in this study, the authors concluded that aerial patrols were ineffective. But this is only one way of looking at aerial patrols.

A fair way to assess aerial patrols

The DPI Fisheries also manages the shark-meshing program that operates from Newcastle to Wollongong. In the past one of the program’s [objectives](#) was “culling populations of large, aggressive sharks”. Numbers of sharks and other species killed and entangled are collected in the program’s [annual reports](#).

The DPI has [argued](#) that this program is successful. This is based on outcomes (reduction in fatalities on ocean beaches), not inputs (number of sharks caught).

If the aerial patrol were evaluated on outcomes (number of fatalities or bites), not inputs (number of sharks seen), then it too would have an enviable record. The last fatality in the Aerial Patrol's region was in 1966 in Jervis Bay after a boat sank.

This outcome suggests that seeing only one shark in eight has merit and is not ineffective, as claimed by the researchers.

We could also expand the performance metrics to include impacts on endangered species. For instance, in 2014-15, [22 protected species were killed](#) in the state's meshing program, including white sharks. Aerial patrols clearly have no interaction or impact on threatened species.

Collaboration is best for bathers

The Aerial Patrol is not the only source of bather protection operating in the Illawarra and Shoalhaven regions. Some of the more popular beaches have ground-based patrolled areas during the summer swimming season.

According to Surf Lifesaving Association [statistics](#) there were 148 shark alarms statewide in 2013-14, of which 117 were in the Newcastle to Wollongong region (which would reflect the larger number of patrolled beaches). Seven were in the Illawarra-Shoalhaven region.

Whether these figures are too low or too high hasn't been evaluated by the DPI Fisheries but for those that are called from the water by life savers I am sure they welcome the warning.

The surf lifesaving providers operate a comprehensive radio network and the Aerial Patrol can radio ground based patrols to get people out of the water and, conversely, the ground patrols can ask the Aerial Patrol to investigate potential shark sightings.

This cross platform collaboration has been happening for decades and may well be why the region has a very low level of interactions between sharks and bathers. The way to deal with low-frequency events is not to remove options but to increase them and encourage collaboration.

No single solution to the issue

A variety of alternative methods for protecting bathers have been put forward over the years, such as electrical currents and chemical barriers, but none has been judged to be worthy of trials in NSW.

Meanwhile we now have a tagging program but, as noted CSIRO great white shark expert Barry Bruce [stated in 2013](#): "I would love our research to completely eliminate the risk of a shark attack but no amount of research, tagging or monitoring will ever do that."

Given the variability in shark numbers and distribution (in time and space) the question of how long it may take to generate usable data remains an open one. More importantly, by whose metrics will this approach be evaluated as being useful?

The state government may wish to consider allocating responsibility for bather protection to the emergency services portfolio and convene a management committee of relevant stakeholders, such as beach safety providers, environmental groups, scientists and policy makers.

A more balanced approach would enable politicians to have access to a suite of actions that could be implemented quickly whilst enabling investment in new approaches to bather protection.