Sharks

Sharks continue to congregate close to shore “like no one can remember” on the state’s North Coast, with surfers and swimmers being warned to get out of the water almost daily between Ballina and Lennox Heads, says Ballina Shire mayor David Wright.

But a state government tagging program has tracked eight great white sharks travelling a collective 2292 kilometres in the past month — often far from shore.

One 2.2 metre female travelled 1000 kilometres south since she was tagged near Ballina on August 26, according to data collected by the North Coast Local Waters Shark Tagging Project.

The results of the program have been released ahead of a shark summit in Sydney which will look at options such as real-time tracking of sharks that would be available to swimmers and surfers on a smartphone app or website.

Or Wright said he believed the data but said there were still a number of sharks swimming dangerously close to shore and people.

“No one can remember it being like this. Even if [the sharks] are moving, they are still there,” Mr Wright said.

“It could very well be true for the ones that are tagged [are moving] but we still had them 10 metres from shore at Lighthouse beach about two weeks ago,” he said.

Primary Industries, Land and Water Minister Niall Blair said the early results of the tagging program showed that great white sharks travelled large distances daily. “What this data shows is that white sharks are highly mobile and much of their activity is occurring many kilometres off the coast.

“This is important information that is providing insights into their movements to address concerns that these sharks are remaining in one location,” Mr Blair said.

Two surfers have died and two have been severely injured in attacks on the state’s north coast in the past year.

Father-of-three Craig Ison was attacked and nearly died while surfing at Evans Head in August.

The shark was seen in the same area where body boarder Matt Lee was mauled in July at Lighthouse Beach, Ballina.

Keeping sharks at bay

Clever Buoys

An acoustic detection method designed to detect sharks at beaches where an array of buoys are deployed. It uses multi-beam sonar to identify underwater objects.

Shortlisted by the government.

Shark spotters likely

Emma Partridge

Spotters, detection buoys and drumlines with GPS could be trialled at NSW beaches this summer to protect swimmers and surfers from shark attacks.

There have been 13 shark attacks in NSW this year, including one fatality, up from three in 2014.

Premier Mike Baird, who spoke at an international shark summit in Sydney on Tuesday, said he was committed to finding ways to protect beachgoers while being mindful of how marine life was affected by netting. “We are going to do everything possible to get the trial under way this summer,” he said.

More than 70 shark experts and scientists gathered at Taronga Zoo to discuss a range of shark deterrent and detection methods after a rising number of attacks.

The shark summit, which is the first of its kind, also examined the results of the government’s $250,000 shark tagging program on the state’s far North Coast.

The technologies discussed ranged from dead shark scent in a can and electrical and magnetic barri-
as summit floats deterrent plans

Smart Drumlines
A drumline attached to electronic GPS buoys. The buoy detects when a shark has been captured on the line and sends a message to shore. Contractors then catch and reposition the shark. Shortlisted by the government.

Electronic fencing/cables
Electronic barriers provide an electric field that can provide protection for a whole beach. Sharks have highly sensitive receptors and electric barriers seek to exploit their sensory biology.

Shark repellents
A chemical deterrent in an aerosol can that sprays the scent of decomposing shark tissue.

Shark shields
A personal electrical deterrent that creates an electric field around a person in the water that sharks can detect. Designed to attach to surfboards but can also be fitted to ankles.

ers to camouflage wetsuits. Three options have been shortlisted by the state government and could be trialled at beaches from Bronte to Byron Bay.

The most likely measure is a “shark spotter” program, which has been successfully trialled in South Africa. Spotters using binoculars were positioned along the coast and sounded a siren when a shark was spotted. They simultaneously raised a white flag showing a black shark. A range of different coloured flags are used to warn swimmers of conditions.

Green means good spotting conditions with no sharks sighted; black signals no sharks have been sighted but visibility is minimal and a red flag means a shark has been seen in the past two hours. NSW lifeguards could take part in the program.

Another option is the Clever Buoy, which uses sonar to detect shark movements. If a shark is detected, the buoy sends a message to lifeguards who raise an alarm.

Another measure being considered is a drumline attached to an electronic GPS buoy. When a Smart Drumline catches a shark, it sends an alert. Contractors can release the shark and reposition it away from swimmers and surfers.

Primary Industries Minister Niall Blair ruled out the culling of great white sharks, which are protected under NSW law.

The Department of Primary Industries’ top shark biologist, Vic Peddemors, believed beachgoers wanted a more environmentally friendly approach to sharks than nets. “We feel that they have been effective but they do have obvious by-catch issues,” he said.
A shark summit has not led to an action plan for beach safety

SIMON KING
FRED PAWLE

The great fish moved silently through the night water, propelled by short sweeps of its crescent tail.

And the reality is that more than four decades on from Peter Benchley's novel "Jaws," scientists still have no idea where that great fish was moving to.

Despite many heralding a new era of shark-attack mitigation at the world's first shark summit in Sydney this week, the opportunity to embrace new-age technologies in a bid to halt the ongoing tragedy in Australia's surf came with two notes of caution: for one, nothing's going to happen anytime soon; besides, sharks do what sharks do and no one really understands why.

As a series of experts lined up to say none of the technologies was ready or could immediately be adapted for the harsh Australian conditions — which involve coming to terms with massive sand movements and frequent, thumping low-pressure systems — the only one not on message was NSW Premier Mike Baird, who remained hopeful that a string of environmentally friendly solutions would be in places on beaches this summer.

That the Premier stood alone illustrates the disconnect between the urgency and the response.

Surfers and ocean lovers are starting to lose patience, says attack survivor Dave Pearson, co-founder of the Bite Club, a support group for the rapidly growing number of people affected by shark attacks.

"If no firm decision is made from yesterday's summit, the government may lose some credibility with the water using community," Pearson says.

"The time for waiting for the problem to move on is over."

Pearson understands Baird's bind, though. He says deploying nets and drum lines — which have proved effective in Queensland — would, unfortunately, be "political suicide."

"The Greens and the anti-shark-cull groups, although not large, seem to want to shout their message in the face of anyone who would even suggest that a few sharks be removed from the ocean," he says. "We assume they would campaign heavily against any premier who suggested this."

The only response to the NSW crisis so far has been a $250,000 tagging program, announced in August, which has tagged eight great whites. Data from the tags reveals they constantly swim around with no fixed address.

But urgent action is needed. According to the Australian Shark Attack File managed by Sydney's Taronga Zoo, in the past 100 years there have been 541 unprovoked shark attacks along Australia's coastline, 137 of them fatal.

This year, there have been 13 attacks with one fatality in NSW, Queensland has had three attacks, and there has been one each in South Australia, Western Australia and Victoria.

In Tasmania, the death of 46-year-old Damian Johnson fell into the dubious category of "provoked attack." Johnson did not initiate contact with the shark, nor was he doing anything that should have aggravated the shark, believed to be a great white. But he was collecting scallops, which the ASA defines as provocation.

If the "provoked" attacks are factored in, across the past century there have been 528 cases, with 174 fatalities and 457 injuries.

**AUSTRALIAN**

*Date: 1/10/2015*  
*Page: 11*

In short, given the recent growth in numbers, Australia is now the shark fatality capital of the world.

But if you bury yourself solely in the stats, it allows for dehumanising comparisons — such as that more people are killed by toasters than sharks in any given year.

Ask the families of Johnson or Tadashi Nakahara, a 41-year-old father who was killed last February while surfing at Ballina's Shelly Beach in northern NSW.

Or 17-year-old Jay Muscat, killed at Cheynes Beach, east of Albany in Western Australia; or Daniel Smith, 18, of Mossman, killed while fishing at Rudder Reef, off the coast of Port Douglas, Queensland; or Paul Willox, 50, from Byron Bay, NSW; or Christine Armstrong, 63, taken by a suspected bronze whale as she fell behind her swimming group at Tathra Beach, NSW, or high school teacher Sam Kellett, 28, taken while he was spearfishing off Yorke Peninsula, South Australia.

All of them were killed last year.

At Kellett's inquest, which is taking place in Adelaide, his friends have had to relive the last thing they saw: a shark thrashing about in a stream of blood where their mate had been.

Sharks don't discriminate. All kinds of ocean lovers are included in the list of casualties. Pearson says Baird's love of the ocean — he is often photographed at the beach with his surfboard — has helped in only a small way.

"We have a few political surfers at the moment, which hopefully is a good thing," he says. "It is removing the stigma that surfers are dope-bludging beach bums and legitimises surfing as a sport and recreational activity for all. Surfing has become a big industry in Australia and raises a lot of income."

"Get down to any city beach and you will see more people enjoying the healing effects of the ocean. After a hard day running the country, what better way to wash off the stress than scoring a few waves?"

Baird is adamant he will push for a summer trial of at least one of the new-age technologies.

The NSW Department of Primary Industries' shark guru Vic Peddemors—who is running the tagging operation on the state's north coast — says given that lives are at stake, stringent trials are required before any equipment is deployed on the beaches — "So we can stand with our hand on our heart and say, 'Yes, we are confident in this product, yes this is going to protect you from potential fatality from shark bites.'"

The lead author of the report that presented the technologies to the shark summit, Bond University associate professor Daryl McPhee, goes one step further. "There is never going to be a magic bullet for the issue of unprovoked shark bite — NSW is a very large and diverse surf zone environment," he says. "There's a lot of technologies which are just nearby there."

Among all the whizbangery, he likes the look of the simplest solution from South Africa: people standing on the beach and looking at the surf.

"The shark spotters program, with some tweaks, is a very good program which has been successful in Cape Town — it has potential for the NSW coast. But no matter what you use, it will not be 100 per cent effective. At present any new technology would not be able to detect 100 per cent of sharks."

However, there is an old technology that is effective drum lines and nets.

Fifty-one beaches between Wollongong and Newcastle are protected by mesh nets; since the first nets were put in place in 1937, there has been only one fatal attack at a protected beach — a 1951 death in Merewether.

Just across the border on the Gold Coast, nets and drum lines have been in place for more than 50 years; the last person killed there in a shark attack was Sarah Whiley, who was fatally attacked by a 4.5m bull shark.

□ Continued page next
Sharks

Wave goodbye to danger with hi-tech deterrent devices

Apart from the unavailability of an immediate solution, shark experts also agree that it remains a mystery why sharks are attracted to Ballina.

“We just don’t know,” Peddemors tells The Australian. “The topography of the beaches at Ballina and on many of those north coast beaches (is) very similar to (places) where the white shark nurseries are big sandy bays, gently sloping. Maybe it’s just that type of habitat that these young animals like to swim in during the day.

“At the moment there’s an inordinate amount of fish activity on the north coast, it’s really spectacular. You’ve got long ribbons of fish in against the shoreline, hundreds of bottlenose dolphins feeding... so it’s not surprising that there’s other predators like sharks in the area.”

The South African experience has echoed that of Australia. Getzomy Cliff of the KwaZulu-Natal Sharks Board has focused on electrical shark repellents.

“We also use a combination of nets and drum lines, which have been incredibly successful in reducing the risk of shark attack — but unfortunately they come at a huge environmental cost,” he tells The Australian.

“This is why we have pursued electrical shark repellents and developed the technology behind the Shark Shield, which is a personal repellent which creates a cocoon of an electric field around you... But we’re not quite at the line yet.”

While the shark summit was a good move and Baird should be applauded for starting the journey, it is merely the first step and there is a long way to go.

And at this stage the best advice from the summit is probably common sense.

“It’s really important; people need to take responsibility. We’re giving you the message: what to look for, when not to get into the water to avoid the chances of a shark encounter. People do need to take their own responsibility as well,” Peddemors says. “Because it’s not just you that gets bitten... it has huge impacts on the local population, it has huge impacts on the local economy, seeing that. If you looked at the angling in Lennox Head at the moment, it’s quite astounding. It’s important to take that into consideration.”

AUSTRALIAN
Date: 1/10/2015
Page: 11

26