Submission No 58

MANAGEMENT OF SHARKS IN NEW SOUTH WALES WATERS

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Parliamentary Inquiry into management of sharks in NSW waters

NSW Government submission

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NSW GOVERNMENT

The NSW Government is committed to making NSW beaches safer.

There are a range of measures in place across NSW including public education and awareness campaigns, shark tagging, shark spotting and beach meshing. In addition to existing shark management arrangements the NSW Government is investigating emerging shark deterrent and detection shark technologies.

Current NSW shark management arrangements

The NSW Government provides a suite of bather protection measures to reduce the risk of shark bite incidents and fatalities, which include:

- A shark meshing program along 51 beaches between Wollongong and Stockton;
- The public awareness program 'SharkSmart', designed to inform and educate water sports enthusiasts about ways to reduce the risk of a shark bite incident;
- A Shark Incident Response Plan, which provides a coordinated government response to shark related incidents;
- Grants to assist the construction of observation towers and provide associated shark-spotting equipment; and
- Research to investigate better ways to use aerial surveillance to provide additional bather protection during the peak beach activity season.

Shark Meshing (Bather Protection) Program

NSW Department of Primary Industries manages the NSW Shark Meshing Program in accordance with joint management agreements (JMAs) and a management plan authorised by the *Fisheries Management Act 1994* and the *Threatened Species Conservation Act 1995*.

The NSW Shark Meshing Program has been effective in helping to provide a safer environment for swimmers and surfers since it was first introduced in Sydney in 1937, and since then there has only been one fatality at a netted beach, in 1951 at Merewether.

The 'sunk nets' are set below the surface in 10 to 12 metres of water, within 500 metres of the shore. A total of 51 ocean beaches from Wollongong to Newcastle are netted between 1 September and 30 April each year, which avoids the majority of the whale migration period. The nets are also fitted with acoustic warning devices to alert dolphins and whales.

Specialist contractors carry out shark meshing operations and the nets are checked regularly by contractors at least every 72 hours, weather permitting;

The JMAs and the management plan require an annual performance report to be prepared and submitted to the parties to the JMAs and relevant scientific committees convened under the State's threatened species legislation by 31 July each year.

NSW DPI reviewed the SMP and prepared the Report into the NSW Shark Meshing Program, which describes the operational aspects of the SMP, assesses its potential environmental impacts, and made some recommendations as to how to mitigate those

impacts. The Report is an important reference source to inform public understanding of the SMP, and provides a baseline against which future changes can be measured.

A copy of the Report and further information on the SMP, JMAs and annual performance reports is available at http://www.dpi.nsw.gov.au/fisheries/info/sharks/meshing.

Observation Tower Grant Program

The NSW Government has committed funding for building up to ten new observation towers per year on beaches or beach headlands for effective shark spotting.

This funding is being managed by the NSW Department of Primary Industries through a grant application process.

Applications for the Observation Tower Grant Program closed Wednesday 30 September 2015.

SharkSmart public education campaign

The Department of Primary Industries website hosts information to help swimmers in all of the state's waters (including all beaches and estuarine environments) and is designed to complement other safe swimming messages. SharkSmart information is provided via several multimedia options include downloadable brochures, mp3s and in iPhone app.

North Coast Shark Campaign

The NSW Government has invested $250,000 for a targeted North Coast campaign ahead of predicted warmer spring and summer conditions.

This is in response to an increase in shark incidents in this region.

The North Coast campaign is a multi-agency response, comprising DPI, local police, Surf Life Saving NSW, local councils and the CSIRO.

The NSW Government's focus on the North Coast includes:

- North Coast Shark Tagging Project led out of Ballina by DPI's shark biologist, Dr Vic Peddemors.
- Deployment of DPI Fisheries boats to assess local conditions and to inform research tasks – in particular the presence of schools of bait fish that are known to attract sharks to the shoreline, current and water temperature trends.
- North Coast SharkSmart public education campaign beginning in October.
- Partnership with local surf clubs – every Surf Life Saving NSW club along the North Coast will be supplied with SharkSmart campaign materials and information.
- Fast-tracked lookout towers funding from the Towers Grant Program.
- Maintaining strong linkages and representation on the Ballina Shire Shark Mitigation Advisory Group.

Cardno report

The Department of Primary Industries commissioned the environmental consulting company Cardno to undertake an independent review of emerging technologies for bather protection (including swimmers and surfers) to create a 'short list' of feasible technologies for possible trial off some NSW ocean beaches.

The focus of the draft Cardno report was on technologies that might be effective at the whole-of-beach scale, however aerial survey methods were not considered as part the review. Technologies considered by the review fell into two broad categories: shark deterrents and shark detectors.

In evaluating the emerging technologies for potential trial, eight criteria were considered, in order of importance:

1) the practicalities of implementing at a whole-of-beach scale;
2) the potential for adverse effects on human health (particularly interference with pacemakers);
3) the ability to withstand conditions similar to NSW beaches;
4) commercial availability;
5) effectiveness on white, tiger or bull sharks;
6) verification of effectiveness via independent testing;
7) potential for adverse effects on wildlife;
8) potential to affect other water users.

The overall outcome of the review indicated that shark deterrent and detection technologies are effective in some circumstances, or in the case of physical barriers effectively prevent shark from entering beaches where water users are present.

The draft report makes the following recommendations:

1. The short-listed technologies cannot provide a single, simple solution that would encompass all types of beaches in NSW, consideration should be given as to how best to integrate emerging technologies, were they trialled successfully, into the NSW Government's overall suite of bather protection measures;

2. Although most of the shark deterrents that operate at large-scales have potential for whole-of-beach protection further refinement is required before short-listing for potential trial at NSW beaches. The report contains advice for each type of emerging shark deterrent technology as to the refinement that is needed to make them ready for trial;

3. The short-list of shark detectors for potential trial on NSW beaches is limited to the shark spotter program but Smart Drumline and Cleverbuoy systems would also be suitable for trial pending resolution of some issues.

The Cardno report is expected to finalised by the end of 2015.

The draft Cardno report can be accessed online at:

http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0011/578999/cardno-review-of-bather-protection-technologies.pdf

Scientific Shark Summit

On 29 September 2015, the NSW Government hosted the 2015 Scientific Shark Summit at Taronga Zoo.

The summit brought together experts from around the world to discuss new and emerging shark detection and deterrent technologies.

Australian and international experts in this field discussed new and innovative ways to better protect NSW beach goers.

The technologies reviewed by the Cardno report were discussed at the summit and include chemical repellents, electrical repellents, land-based 'shark spotters', barriers, magnetic and sonar technologies.

Outcomes of the summit are expected to be released by way of an outcomes document in late 2015.

Existing information

The Cardno review of bather protection technologies provides an overview of and references to a comprehensive range of information about sharks, shark incidents and shark management approaches.

The NSW Department of Primary Industries website also contains a large amount of data relating to sharks, shark meshing, shark research and bather protection which can be accessed at http://www.dpi.nsw.gov.au/fisheries/info/sharks .

Tourism and related industries

Destination NSW employs a team of regional Zone Managers who work closely with tourism industry stakeholders in Sydney and regional NSW. To date, the Zone Managers have only received limited feedback from tourism stakeholders regarding the possible impact of shark attacks on their businesses. At this stage there is no concrete evidence of tourism and related industries being adversely affected or a reduction in visitor numbers due to possible shark attacks.

The National and International Visitor Surveys are undertaken by Tourism Research Australia[1] on a quarterly basis with data available approximately three months after the end of the relevant quarter. All data for the September 2015 quarter will be publicly available on 16 December 2015.

[1] Tourism Research Australia (TRA) is administratively a branch within the Tourism Division of Austrade

The Legislative Assembly Committee on Investment, Industry and Regional Development may wish to review data from the National and International Visitor Surveys when it becomes available for the years ending September and December 2015 and March 2016 to gain a better understanding of whether there has been a reduction in visitors to coastal regions and the possible impact on tourism and related industries.