

# COASTAL SAFETY IN NEW SOUTH WALES

Surf Life Saving NSW and Nearnmap

MAY 2022 | BONDI BEACH, NSW AU



Surf Life Saving New South Wales is driven by a vision to equip, empower, develop and support its people to deliver vital aquatic rescue and safety services. Insights from Nearnmap high-resolution imagery are helping plan the resourcing of lifeguards and surf lifesavers with the aim of reducing the risk of drowning and injury.

## CHALLENGE

In the last year, 2021/22, 55 people tragically drowned on the NSW coastline. Lifeguards and surf lifesavers effectively manage the safety of members of the public in the water at over 150 beaches throughout New South Wales. But with population growth, particularly around regional areas, increased use of the coastline, and social media drawing people to beautiful yet isolated locations, there are many high risk sites where little assistance is available if swimmers get into difficulty. Surf Life Saving NSW aims to reduce the risk of drowning and injury by effectively offering surf lifeguarding services, surf lifesaving services, and support operations at the highest risk sites throughout New South Wales. Nick Mulcahy, Coastal Risk and Research Manager at Surf Life Saving NSW leads the project *Coastal Insights: Safer Coasts for the Future*, with support and funding provided by the New South Wales government through Resilience New South Wales. Until recently, the only exposure data available to Surf Life Saving NSW was collected by lifeguards and surf lifesavers, who record the number of people on the beach and in the water at patrol times. However, this data collection is limited to patrolled beaches at patrol times, and relies on lifeguards and surf lifesavers having the time during their duties to collect the data.

## SOLUTION

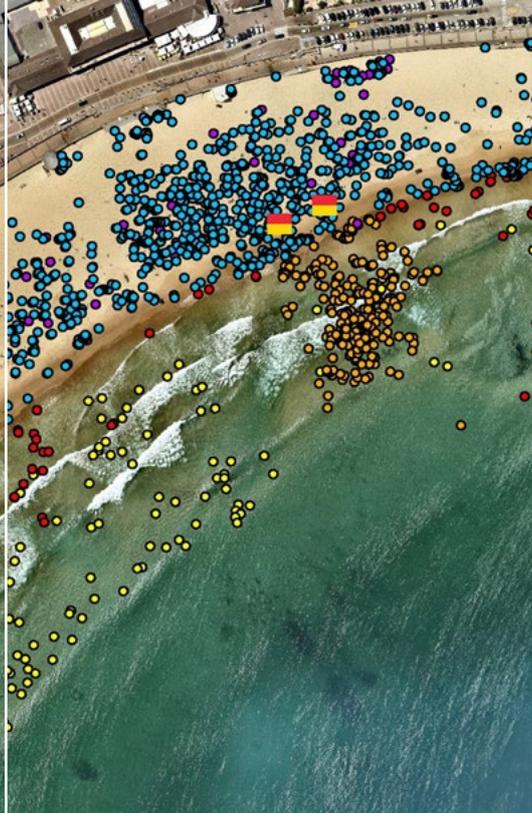
Investigating other approaches led the team to high frequency, high-resolution aerial imagery covering large sections of the NSW coastline. “Nearnmap was the perfect fit,” said Nick Mulcahy. A dedicated team of researchers systematically analyse high resolution aerial imagery in spatial mapping software to identify and detect beach and water users. The resolution of 5.6–7.5cm GSD allows identification of different categories of beach users including: swimmers (inside and outside the red and yellow flags); shade structures, such as sun umbrellas; sunbathers; paddle board users; surfers, and those using recreational boats. The resolution can also enable further identification of specific subcategories such as body boarders, those surfers on shortboards, and those on longboards. The methodology that Nick and his team of researchers have developed and refined enables accurate identification and counting of beach and water users in a replicable process, confirming a high level of consistency between researchers. The team can also undertake spatial mapping — such as heat or density mapping — to understand how those people are distributed.

OCT 2021 | FRESHWATER BEACH, NSW AU

**nearmap**



JAN 2017 | BONDI BEACH, NSW AU



Beach and water users identified



Spatial heat map of beach and water users

## IMPACT

Every Nearmap high-resolution image provides Surf Life Saving NSW with a considerable amount of information. Analysing multiple images provides an understanding of likely usage-pattern changes through different seasons. This enables the analysis of volume patterns and distribution of beach and water users at a site-specific scale, which is critical to help inform strategic and operational service deployment decisions at specific sites. This analysis has been undertaken on a multi-site scale across 650 beaches in New South Wales, quantifying the relative use of beaches throughout large sections of coastline and comparing their use by different types of beach and water user groups. The research team can combine their understanding developed through the relative use of one site to another and align that with the data collected by surf lifeguards and surf lifesavers to provide a good understanding of the likely use of unpatrolled sites outside of those periods. This exposure data enables them to quantify the relative risk of drowning and injury, which helps ensure lifeguarding services, surf lifesaving services, and support operations are allocated to the highest risk sites through the highest risk times of year and at the highest risk times of day. Nick Mulcahy summarises what this means now and into the future: “When you go to the beach, we hope to ensure that the right services can be in the right place at the right time, and you can go home with only great memories.”

“We can compare beach and water use across patrolled and unpatrolled beaches along large sections of coastline. As the high resolution aerial imagery captured by Nearmap can span very wide extents, we can also undertake that analysis ... and look at the proportional use of those sites to one another.”

Nick Mulcahy, Coastal Risk and Research Manager, Surf Life Saving NSW



**650 BEACHES SURVEYED**  
MULTI-SITE COVERAGE



**HIGH-RESOLUTION CLARITY**  
ACCURATE QUANTIFICATION



**BETTER INSIGHTS**  
IMPROVED RESOURCING



## NEARMAP HIGH-RESOLUTION IMAGERY:

Watch Nick Mulcahy’s presentation from Nearmap NAVIG8 2022 [here](#). To find out more about how Nearmap high-resolution aerial imagery and geospatial content can help your organisation, **book a demo today**.

