



Jellyfish 'early warning system' to help avoid deadly stingers in FNQ



Pic: Dr Lisa Gershwin

Stings from venomous box jellyfish common in tropical waters are highly painful and can be fatal.

The ability to predict when higher concentrations of jellyfish – known as 'smacks' – is an attractive prospect to scientists, surf lifesavers and tourism operators alike.

NESP Tropical Water Quality Hub scientists have studied where and when swimmers in Australia's northern tropical waters are most likely to be stung by Irukandji box jellyfish like *Carukia barnsei* and *Malo kingi*.

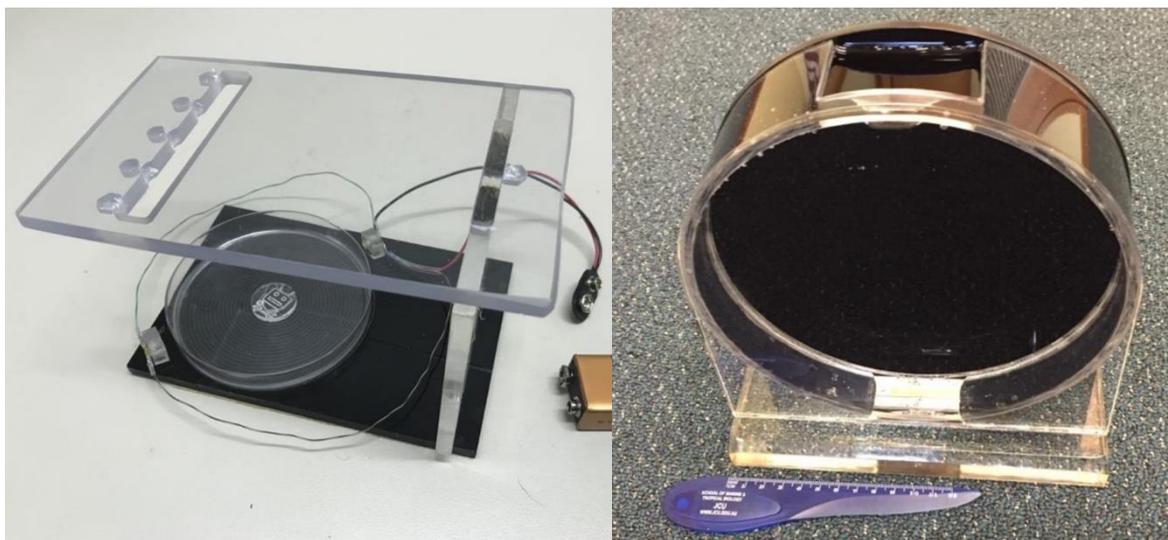
Over three years, Dr Scott Condie at CSIRO and his research team from JCU and UQ have established an Australian Venomous Jellyfish Database (AVJD), [now publicly available on the eAtlas database](#), which brings together data on jellyfish sightings and stings from a wide variety of sources including scientific research, Surf Lifesaving clubs and hospital records.

Of all the factors affecting where and when stings occurred, wind direction was found to be the most important. Slow north-westerly winds corresponded to more stings than conditions with strong south-easterly winds. Tide height was also found to be important, with more stings occurring at low tide.

“These relationships are key to making sting risk forecasts, similar to current fire danger rating forecasts, which can be made available to lifesavers, tourism operators and the general community,”, said Dr Condie.

The project also focused on refining and expanding jellyfish monitoring. Box jellyfish are usually tiny and transparent, making identifying them difficult.

As part of the project underwater camera rigs called ‘Jellycams’, which can automatically capture images of jellyfish that swim past them, were built and deployed at observation sites including Palm Cove and Yorkeys Knob in Cairns, and at The Strand and Magnetic Island in Townsville. The rigs also measured water temperature. Additionally, the team constructed easy-to-use jellyfish viewing boxes, which allow people untrained in jellyfish identification to capture a stinger, snap a photo on a smartphone and send it to an expert for identification.



Jellyfish viewing boxes developed under the NESF project. Unidentified jellyfish can be scooped into the container, where the black background allows an easy high-contrast photo from a smartphone, which can then be sent to an expert for a definitive identification. Pic: Scott Condie

Russell Blanchard, lifeguard supervisor for Surf Lifesaving Queensland’s North Barrier Branch in Townsville, said the two jellyfish viewing boxes provided by the project ‘had come in very handy’ for volunteer surf lifesavers.

“We’ve used them multiple times already - they are beneficial to volunteer surf lifesavers, who don’t necessarily have the same experience identifying jellyfish by eye,” he said.

“As a whole our involvement in the project has been pretty beneficial, when we gather our own data on jellyfish we are usually dealing with limited areas, the researchers however have been collecting information from a much larger area which gives them a good picture of what the jellies are doing.”

Cairns-based Indigenous rangers also contributed to the research providing vital advice and assistance with fieldwork.

More information about the jellyfish project, including the final report, [can be found on the National Environmental Science Program's Tropical Water Quality Hub website.](#)

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