

World-first system to monitor the 'seafood basket' of Australia

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Jacques Descloitres MODIS Land Rapid Response Team. Credit: NASA - GSFC

Australia's national science agency, CSIRO, has completed initial testing of a 'weather service' for water quality in the Spencer Gulf in South Australia—which provides much of the country's seafood—with plans to use the technology in local seafood farms.

CSIRO's AquaWatch Australia Mission combines data from [water](#)

sensors and satellites before applying computer models and [artificial intelligence](#) to provide near-real-time water quality monitoring and forecasts.

The Spencer Gulf test site is the first in Australia to demonstrate the AquaWatch technology works, a milestone achieved in partnership with SmartSat CRC and the South Australian Research and Development Institute (SARDI).

CSIRO senior scientist Dr. Nagur Cherukuru said the team's focus has now turned to collect data to inform the area's thriving [aquaculture industry](#), which could warn them of harmful marine events such as algal blooms before they occur.

"The Spencer Gulf is called 'Australia's seafood basket' for good reason," Dr. Cherukuru said.

"The region's aquaculture will put seafood on the table for thousands of Aussies these holidays, with the local industry's production worth over \$238 million a year.

"We're reaching out to the industry to be early adopters of AquaWatch, allowing them to monitor and forecast water quality as we build the system."

SARDI oceanographer Dr. Mark Doubell said the AquaWatch partnership with CSIRO significantly boosted water quality monitoring needed to support the ecologically sustainable growth of aquaculture in the region.

"The delivery of real-time data and improved satellite observations on water quality provides new information that complements existing operational oceanographic models to inform on the ecologically

sustainable use and development of our precious marine systems."

Kirsten Rough, Research Scientist at the Australian Southern Bluefin Tuna Industry Association, said the Spencer Gulf is a great area for aquaculture because it typically enjoys good water quality that makes for healthy fish.

However, she explained that current water monitoring efforts need improvement.

"In certain conditions, [algal blooms](#) can form, which threaten our stock and can cause [significant losses](#) for the industry," Ms Rough said.

"While we do monitor water quality, it's currently time-consuming and labor-intensive."

"Real-time monitoring means we can scale up surveillance and adjust feeding cycles. Early warning forecasts would allow for planning decisions like moving pens out of the way of harmful algae."

CSIRO is inviting Traditional Custodians and industry partners to help co-design the next phase to extend [water quality](#) monitoring of the Spencer Gulf and deliver data to decision-makers and Elders.

Professor Andy Koronios, CEO of SmartSat CRC, said his team was working with CSIRO as a foundation partner on AquaWatch.

"We are working hand-in-hand with CSIRO to harness data from satellites so we can better manage this very valuable resource," he said.

"AquaWatch is establishing [critical infrastructure](#) through a state-of-the-art data system and national water sensor networks to help our country become more resilient to extreme weather and adverse marine events."

"The technologies and capabilities that we are developing for the nation will result in commercial opportunities in aquaculture, in fisheries, and in making Australia a high-tech nation."

More information: author.csiro.au/about/challenging-s-missions/AquaWatch

Provided by CSIRO

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