

Drinking water watched by Queensland's seventh sense

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CSIRO scientists inspect one of the floating nodes monitoring Lake Wivenhoe.
Credit: CSIRO

One of the major sources of drinking water for south-east Queensland is now under the watchful eye of Australia's largest integrated intelligent wireless sensor network.

CSIRO and a local [water](#) authority in Queensland, SEQWater, have joined forces to monitor the Lake Wivenhoe catchment, which spans an area about the size of the city of Brisbane, and supplies water to the region's 1.5 million residents.

Approximately 120 nodes, using CSIRO's FLECK™ smart [wireless sensor network](#) technology, are monitoring environmental conditions on Lake Wivenhoe and in the surrounding catchment.

CSIRO Senior Research Scientist, Dr Matthew Dunbabin said it is hoped that these sensors can provide the platform for the next generation of water quality monitoring systems.

"This is about real time data collection from the storage to the shore with a level of speed and detail not seen before," Dr Dunbabin said.

The sensor nodes operate in a meshed network, which means they record environmental variables and cooperate with each other to set up an ad hoc network to wirelessly transfer data.

"This gives us the capacity to monitor 'events' in real-time, such as high rainfall, droughts or contaminants entering the waterway," Dr Dunbabin said.

"If the network detects an 'event', it can autonomously advise the boat to sample in more detail."

Seqwater principal scientist, Associate Professor James Udy said the network is a cost-effective way of integrating different measures such as water quality, event flows, weather and pasture conditions, as well as cow movement.

Of the 120 nodes, 45 are floating and measure water temperature through the water column, while another 70 are land-based and spread across the catchment.

An autonomous solar-powered catamaran travels between the floating nodes gathering data.

Developed by CSIRO, this is manually controlled through a PDA, web interface or web-enabled mobile phones.

The technology being used at Lake Wivenhoe is on display in Sydney

from 12-14 May at CeBIT Australia at Darling Harbour.

Source: CSIRO Australia

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