

CSIRO

AquaWatch Australia

Delivering enhanced water
quality monitoring to protect
our most vital resource - water



The United Nations estimates that **more than 3 billion people** are at risk because a lack of data means the safety of their water is unknown. Unsafe water **kills more people than all forms of violence combined**, including wars.



Drinking water
& sanitation



Recreation

Aquaculture
& agriculture



Industries

Communities

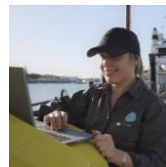


Water is a vital resource. Current monitoring methods are fragmented and lack a comprehensive approach. The AquaWatch Australia Mission will provide reliable and robust data to support improved decision making and water quality management opportunities through its integrated ground to space water quality system

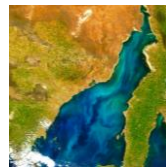
AquaWatch is committed to contributing to UN Sustainable Development Goal 6 to ensure the availability and sustainable management of water and sanitation for all and Goal 14 to conserve and sustainably use the oceans, seas and marine resources for sustainable development.



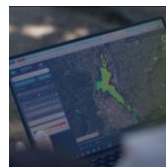
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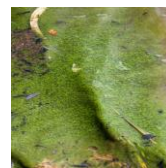
Informed Decision-Making: AquaWatch provides essential water quality information for informed decision-making by industries, communities and government agencies.



Early Warning: It offers early warnings to help communities, governments and industries prepare for and mitigate water quality issues, such as toxic algal blooms.



Measuring Outcomes: AquaWatch measures the outcomes of water resource management and policy changes, enabling evidence-based improvements.

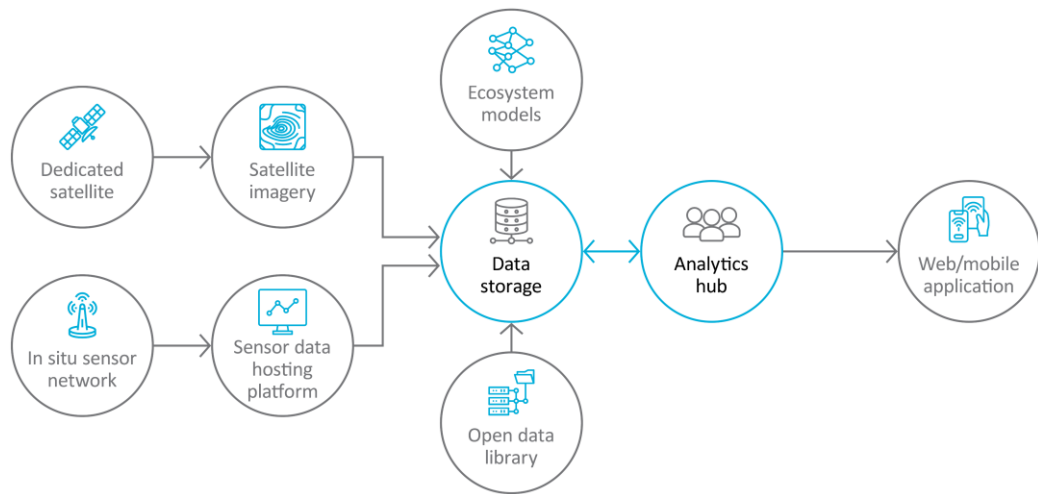


Quantifying water quality issues: AquaWatch will ensure users have the right information at the right time, helping key sectors identify the root causes of water quality issues, including the impact of land management practices.

AquaWatch will be a world-class integrated ground-to-space water quality monitoring system with global applicability. It connects proven technologies and techniques in an innovative way and leverages emerging technologies for continuous improvement.

These technologies are being co-designed and tested in real-world applications via a select number of pilot sites with local partners. The result will be continental-scale water quality monitoring and forecasts that continuously improves to become more accurate and reliable.

AquaWatch data system



Technologies



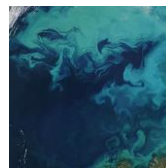
Water quality sensors: In-situ water quality sensors provide highly accurate measurements used to validate satellite data. We aim to contribute additional sensors, networking expertise and data aggregation capabilities to establish dense national water quality sensor networks.



Earth observation: Data from Earth observation (EO) satellites is used to extrapolate across entire continents. An end-to-end simulator was developed to predict satellite performance for water monitoring and specifications for custom-built water quality sensors have been tested.



Data system: The data is processed using our advanced cloud computing analytics platform, the AquaWatch data system. Within this system, AI inversion modelling can be applied and result in different data services (monitoring and forecast information) to suit the application and end users.



Water quality modelling: In the data system, sensor and EO data is integrated with physical models to make predictions about water quality. The use of AI can help to scale up local forecasting models to regional and continental coverage.

Work with us

With foundation partner, the SmartSat Cooperative Research Centre, we're seeking collaborators to co-invest and co-design the AquaWatch system with us.

Partnerships play a crucial role in the success of AquaWatch from across research, academia, industry and government.

Key partners and co-designed pilot sites will help drive innovation and capacity building across space and tech development, and water-based sensors, to ensure a more robust and effective monitoring system.

Indigenous communities | environmental protection | aquaculture | agriculture | water utilities | government agencies | councils | research institutions | universities | philanthropic organisations | space technologies | hydroelectricity | desalination plants | emergency response organisations

As Australia's national science agency and innovation catalyst, CSIRO is solving the greatest challenges through innovative science and technology.

CSIRO. Unlocking a better future for everyone.

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