

Efficient Urban Water Systems

Water-smart tools and technologies

Rainwater, stormwater, greywater and reclaimed water will form an integral part of the world's future water supply.

CSIRO provides scientific solutions for water-wise commercial and residential developments, efficient agricultural enterprises, and water conservation/reuse systems.

These include innovative and adaptive management approaches for domestic-scale harvesting of rainwater and stormwater, reuse of grey water, on-site treatment of effluent, and the development of new treatment technologies.



CSIRO Microbiologist flame sterilises a wire loop, prior to sampling bacterial cultures

Water treatment technologies

Australia's water industry is using CSIRO research to optimise, validate and integrate treatment options to deliver good quality drinking water.

CSIRO is helping water companies to understand and manage biofilms in the systems that distribute our water. Biofiltration is being investigated for incorporation into treatment options for reduction of contamination, by algal flavours, herbicides and halomethanes.

CSIRO also has expertise in grey water testing and desalination of effluent. Researchers are monitoring and evaluating alternative treatment technologies in collaboration with Australian and international partners.

Groundwater management

CSIRO science and decision-support models are helping to determine the most sustainable method of managing water/sewer/stormwater infrastructure to minimise the effects on aquifers.

Our understanding of contaminant fluxes and the movement of contaminants from infrastructure into aquifers is being used by water utilities to predict whether urban contaminants will have a significant effect on aquifer sustainability.

Research is being conducted into the fate and behaviour of microbial pathogens associated with artificial recharge schemes, the biological influences on geochemistry during artificial recharge of water into aquifers, and on the factors influencing the biogeochemistry of aquifers due to artificial recharge.

Water efficient cities

Urban populations continue to grow, putting increasing pressure on water supply, wastewater collection, treatment and disposal systems. To meet this challenge, CSIRO is developing water-smart planning tools, technologies and systems.

CSIRO is applying current and new technologies to develop innovative solutions for integrated wastewater treatment, localised water reuse and resource recovery.

A range of models - from domestic to city scale – have been developed to allow water authorities to manage their assets more efficiently.



Recycled Water Treatment Plant pumping station. Purified recycled water from holding dam in background will be used for market garden irrigation



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