

# A universe in a drop of water

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**Water** is an extraordinary molecule containing an abundance of invisible and essential life sustaining elements. Within a single drop of water, an astrologically large number “sextrillion or  $1.6 \times 10^{21}$ ” of molecules exists.

**Water** comprises a vast mixture of elements from the universe. The tiny water molecules are in constant communication with each other and the environment. Water can occur as a nanoscale water droplet, ice crystal, invisible vapour, or be as large as the ocean. Water is as old as the universe and is constantly recycled. Water not only flows around the ocean in conveyor-belt like currents, but also in the microscopic electro-magnetic exchanges between molecules.

**Water** composition relates to the quality of the natural and built environment. The water molecules can penetrate, erode, dissolve and shape everything like the landscape and built environment. Water is a reactive molecule, a universal solvent and it crosses all boundaries.

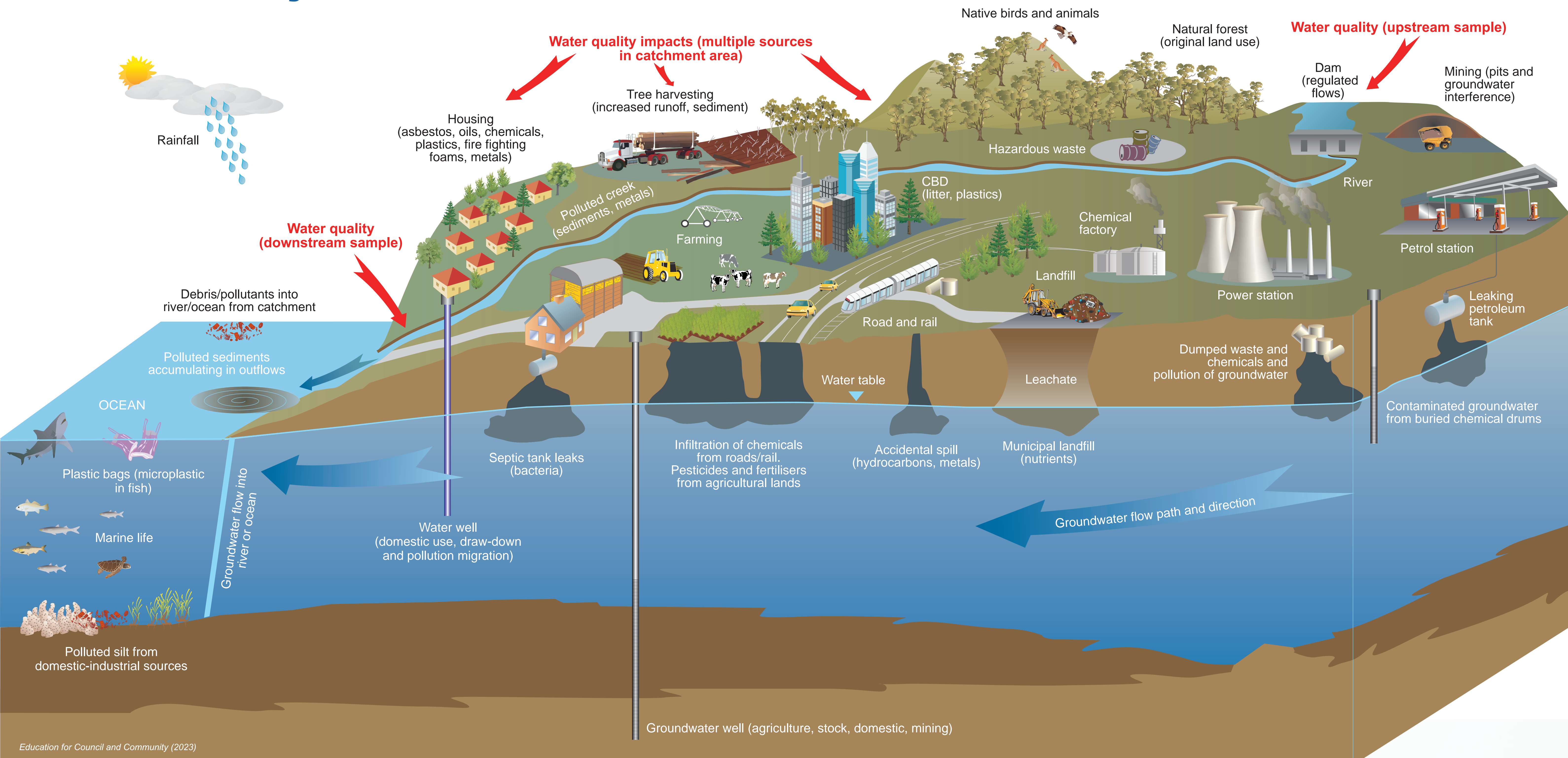
With modern analytical instruments, we can understand the intricate and minute physical, chemical and biological imprints in water. The water quality informs how our planet evolves over time.

From the weathering of rocks, and to the decay of a city, the water erodes and dissolves materials into the groundwater and waterways just like nutrients in a human artery. Most of the harmful pollutants in water are invisible.

Lessons learned with 3 decades of contaminated groundwater investigations is the need for education about waste and chemical management to support ongoing ecological sustainable development. Groundwater quality protection needs to include analyses of current and historical pollution sources and aspects such as community engagement, engineering solutions, and government incentives.

Keeping the tiny water molecules free of harmful pollutants is likely to become the greatest challenge for our generation and the next.

## Water Quality and Human Influences



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**About Dino Parisotto**  
 My passion is to educate the community about the need to protect water quality, and living in harmony with the environment.

**Professional qualifications**  
 Geology Degree (Hons), Masters Degree - Groundwater, NSW drillers licence, CEnvP Environmental Practitioner (site contamination specialist, SC40118).