



SCIENCE AND  
INDUSTRY  
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## STEM Community Partnerships Program

### Camden local scenario

#### Water

We are entering into an unknown future with shrinking resources and a growing population. The international population is projected to increase from 7 billion to over 9 billion by the year 2050, and our national water use double in the same time period<sup>1</sup>.

Of all the water in the world approximately 97% is salt water and 2% is located in our glaciers on the North and South Poles. This leaves approximately 1% as fresh and usable<sup>2</sup>. This small percentage is used for human consumption, households, agriculture, transportation and energy production. In many countries water scarcity is already a problem with 1 in 9 people worldwide not having access to safe and clean drinking water and 1 out of every 5 deaths of children under the age of 5 is due to a water-related illness<sup>2</sup>. Water scarcity threatens to become a large problem for Australia's future too.

Across Australia, the driest populated continent on earth, consumers use on average 100,000 L of freshwater per person, per year. Aside from domestic uses, the agricultural industry is by far the largest consumer of water, accounting for over half of Australia's water use, primarily for sheep, beef, and grain farming<sup>3</sup>. Water taken out of the system for domestic, agricultural or energy production is water that is not available for the environment. Maintaining the health of local water bodies is imperative for their future preservation.

Camden Council has been involved in stormwater management projects to help maintain water quality in local waterways. Two of these projects are the Lake Annan Gross Pollutant Trap and Lake Annan Rehabilitation<sup>4</sup>.

How your Council tackles the complexity of this issue will impact you now and future generations.



*Lake Annan Gross Pollutant Trap  
(Photo courtesy Camden Council<sup>4</sup>)*

## Your task

Your task is to use the information above and resources provided below as a start to identify a local problem and design a STEM-focused solution.

(Question, Design, Explore, Communicate)

## Resources

### CSIRO research

Water: <http://www.csiro.au/en/Research/Environment/Water>

- Alternative water supplies for cities: <https://www.csiro.au/en/research/natural-environment/water/water-book/urban-water-sustainability>  
<https://www.csiro.au/en/research/natural-environment/water/Water-Book/Future-urban-water-supplies>
- Managed aquifer recharge and stormwater: <https://research.csiro.au/mar/csiros-role-in-mar-research/research-to-develop-mar-for-liveable-sustainable-resilient-cities/>

### Reports

Camden water quality: <https://www.camden.nsw.gov.au/environment/water/>

- <sup>4</sup>Camden Local Lakes Fact Sheet: <https://www.camden.nsw.gov.au/assets/pdfs/Environment/Water-Quality/Local-Lakes-Fact-sheet.pdf>
- Lake Annan Specific Area Plan of Management: <https://www.camden.nsw.gov.au/assets/pdfs/Council/Plans-and-Strategies/Plans-of-Management/15-8922-Lake-Annan-Specific-Area-Plan-of-Management-Adopted-by-Council-27-May-20142-1.pdf>

Sydney Water South West Growth Area: <http://www.sydneywater.com.au/SW/water-the-environment/what-we-re-doing/current-projects/servicing-growth-areas/south-west-growth-area/index.htm>

<sup>3</sup>Australian Bureau of Statistics: Water Account, Australia, 2014-15:

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/4610.0>

- <sup>1</sup>CSIRO Global Megatrends Report Overview, 2012:  
<https://publications.csiro.au/rpr/download?pid=csiro:EP126135&dsid=DS2>
- <sup>2</sup> Hajkowicz, Stefan 2015, *Global megatrends: seven patterns of change shaping our future*, CSIRO Publishing, Victoria, Australia

### Articles

- National Geographic, A Clean Water Crisis:  
<http://environment.nationalgeographic.com.au/environment/freshwater/freshwater-crisis/>
- World Water Council, Water Crisis: Towards a way to improve the situation: <https://www.worldwatercouncil.org/en>

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