

Day 1 - Fact Sheet 1

Tales of the Todd- Read all about it!

The Freshwater Story

Where does water come from?

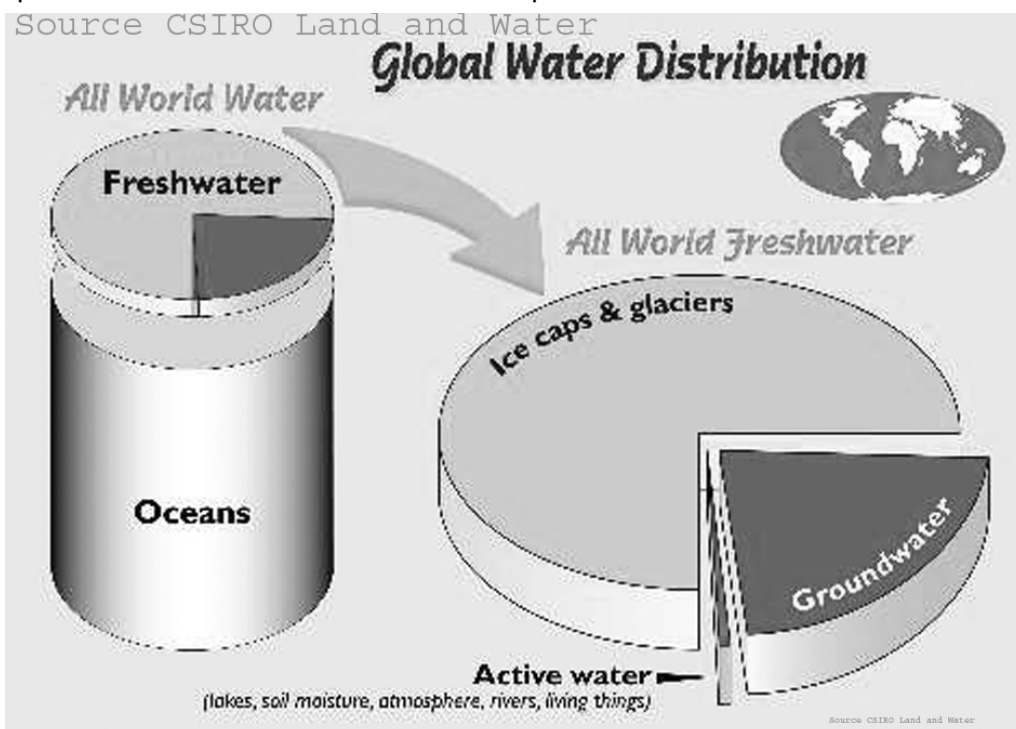
Water spends time in the ocean, in the air, on the Earth's surface, and under it as groundwater. This water circulates endlessly in a kind of global plumbing system called the hydrologic cycle or water cycle.

Global plumbing!

The water cycle is controlled by the sun, which produces the heat energy that determines the way the earth uses and recycles its water. This heat energy evaporates water in the oceans, lakes and even backyard pools. When water evaporates, it rises into the cooler air, collects, and forms clouds. Eventually, the water droplets that form, fall from the sky as rain, snow, sleet, or hail. When water falls to the ground, it doesn't stop moving, some flows across the earth's surface into bodies of water like rivers and lakes. Other water seeps into the soil where it makes its way to becoming groundwater, and then may slowly flow into rivers and lakes, or back into the sea. Then the cycle starts all over again!

Where on Earth can we find water?

The earth's supply of fresh water is estimated to be at 72.5 trillion litres. Sounds like a lot of water but is it? Of the total amount of water on earth, about 97.5% is found in the oceans. Around 1.9% is frozen in ice sheets and glaciers. That means only about 0.6% is liquid fresh water. Fresh water in liquid form is the most easily usable by humans as well as water plants and animals. Water frozen in ice sheets, glaciers or salt water from oceans is expensive to make usable for human consumption.



Of the 0.6% liquid fresh water readily available, 0.02% of the entire earth's supply is found in rivers, streams and lakes called surface water. The other 0.58% is found in ground water or water below the surface. Ground water is rain or melted snow that has sunk into the ground. The main source of water in and around Alice Springs is ground water.

Some ground water is naturally stored in aquifers where water fills the gaps between soil particles. When rain falls or snow melts, the water seeps into the soil. There it can recharge (refill) shallow ground water aquifers. An aquifer of this kind can be found beneath the town of Alice Springs (called the 'Town Basin').

Some water may slowly seep deep into the earth or it may have been there for hundreds or even thousands of years forming fossil aquifers. We can use water from these shallow or fossil aquifers by drilling wells or bores. In the early days of settlement in Alice Springs, the wells and bores were sunk in the shallow, rechargeable town basin; since 1964, the town has been supplied by bores sunk at the Roe Creek bore field south of Alice Springs, which access non-rechargeable fossil aquifers.

Water Type	Volume (x10 ⁶ km ³)	Residence time
Oceans and Seas	1370	~ 4000 years
Lakes and Reservoirs	0.13	~ 10 years
Swamps	<0.01	1-10 years
River Channels	<0.01	~ 2 weeks
Soil Moisture	0.07	2 weeks - 1 year
Groundwater	60	2 weeks - 10 000 years
Icecaps and Glaciers	30	10-1000 years
Atmospheric Water	0.01	~ 10 days
Biospheric Water	<0.01	~ 1 week

Groundwater educational links

Australian Links

<http://www.lpe.nt.gov.au/advis/water/facts/pdf/AliceSpringsTownBasin.pdf>

<http://www.lpe.nt.gov.au/advis/water/facts/pdf/BeneficialUses.pdf>

<http://www.lpe.nt.gov.au/advis/water/facts/pdf/GWInformation.pdf>

[Waterlinks in Australia](#) A list of regional Australian pages about water

International Links

[NGWA.org](#) An educational site from the US National Ground Water Association

[Groundwater.com](#) A directory of online groundwater resources, from the Groundwater Foundation,

[USAAquifer Storage and Recovery](#) An interactive diagram showing how water is stored underground

[The San Antonio Water System](#) An interactive website from the USA showing the hydrologic cycle of San Antonio