

# An Interview with a Glass of Water

In this week's edition of *Celebrity Substances* magazine, we bring you an in-depth interview with a very special material. Even though it covers two-thirds of our planet and makes up 80 percent of our bodies, we often take it for granted. So, here we're putting the tough questions to a glass of water.

story and illustrations  
by Jeffy James

I guess most of us have wondered from time to time what it's like to be water. Could you tell our readers a bit about your lifestyle?

It's great! I'm always in demand and I get to do amazing things all over the world. For example, just last month, I was snowing in the Southern Alps.

**Snowing? So your physical state changes a lot?**

Oh yeah, all the time. Solid, liquid, gas: I do them all. It's really exciting. One minute I'm rain. The next I could be steam, cloud, snow, ice ... even somebody's dirty old bathwater.

**Sounds like a busy job. What's the best part about it?**

Being appreciated, I think, because every living thing needs water: trees, humans, slime moulds ... everything! I especially like cleaning out human body systems. You know, flushing out wastes through kidneys, sweating, stuff like that.



**You like that? Yuck! Is there anything you don't like doing?**

Well, it's a bit dull being groundwater. It takes ages to filter up to the surface through layers of rock. And once, I got stuck in a glacier for two thousand years. That was totally boring, too. Also, I feel quite lost when I'm just a drop in the ocean. But when I evaporate and eventually become a cloud again, it all seems worthwhile.

**I bet it does. I guess we're talking about the water cycle here.**

Yeah, that's right. Which reminds me, I've had some fantastic cycles recently. I evaporated from a fishpond in China, hailed down in South America, went over a waterfall, got swallowed by a cow ...

**Ugh! That sounds a bit nasty.**

Nah, it's all part of the job. Hmm, what happened next? That's right, I came out the other end of the cow. (Okay, that was nasty.)

Woke up as a dewdrop, ended up hanging around as fog in Germany, and eventually drizzled down

into the same fish pond. That's a record world tour for me.

**Whew! What exciting adventures are coming up for you?**

No idea. I don't make plans – I just go with the flow. Things could become very different for me if we head into another ice age – or if the opposite happens and the polar ice caps melt. Anyway, how much longer do you want me to hang around in this glass? I've got work to do.

**What sort of work?**

Anything! In fact, why don't you drink me? You look a bit thirsty.

**I am actually.**

Go on, then. See you round!

**Glug, glug, glug**



# The Water Cycle

by William Rea



**In New Zealand**, we don't often think about how valuable water is. Turn on a tap, and clean water flows. All around us, there are streams, rivers, and lakes. But fresh water is not as plentiful as we might think. Although more than 70 percent of the Earth's surface is covered with water, less than 3 percent of this water is fresh. The rest is salt water in the seas and oceans. Water travels in an endless cycle between sea, sky, and land. This is just as well because, without water, the Earth would be a lifeless planet.



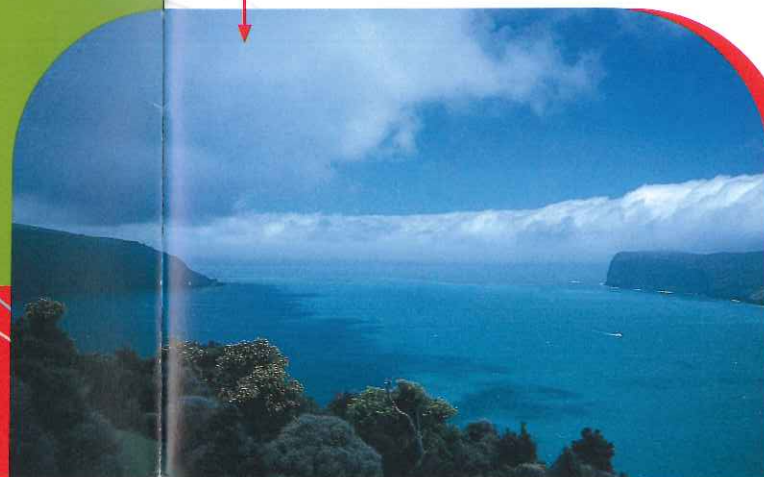
that they don't fall to the ground straight away. The droplets move around and bump into each other, joining up into bigger and bigger droplets.

Water is the only substance on Earth that's found naturally as a solid, a liquid, and a gas. The warmth of the Sun on lakes, seas, and oceans turns liquid water into an invisible gas called water vapour. Scientists call this process "evaporation" – but you probably just call it "drying".

As water vapour rises into the air, it cools down and turns into cloud. Most, but not all, clouds form over seas and oceans. Clouds are made up of millions of tiny liquid droplets. These droplets are so small and light

Eventually the water droplets become so big and heavy that they fall from the clouds as raindrops, hailstones, or snowflakes.

Much of New Zealand's rain and snow falls in the high country and mountains. In the mountains and high country, rainwater trickles into streams and begins to make its way to the sea. As the streams travel downhill, more water drains into them from the surrounding land. They get bigger and join together to form rivers.







Many New Zealand rivers flow quickly down through steep country, tumbling over waterfalls and churning through narrow rapids. As it travels, moving water shapes the land. Wind, rain, and flowing water slowly wear mountains down and cut gullies and gorges into the land. As water moves over the land, it carries off silt, sand, pebbles, rocks, and even boulders. This process is called "erosion". Glaciers, which are rivers of slow-moving ice,

do the same thing.

During its journey, water often stops for a while in lakes. Lakes may seem large to us, but even the very biggest lakes are small compared with the seas and oceans. Some lakes in New Zealand have been created by dams. We can use the force of the water tumbling down to produce electricity.

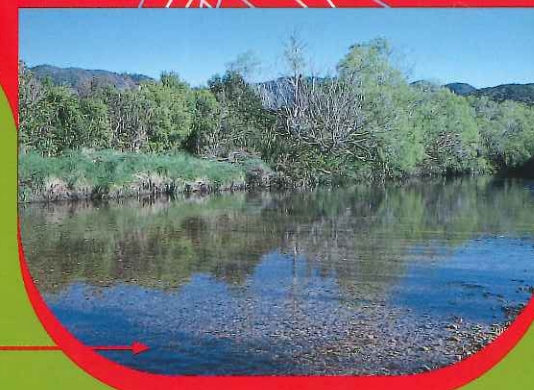


As rivers begin to travel through flatter land, they slow down and widen. Some of the soil and rocks that they have collected from the high country begin to sink to the bottom and build up on the banks.

This sort of material on the bottom or edge of a waterway is called "sediment".

Flooding is a natural process that's common in many parts of New Zealand. Areas like Canterbury are huge flood plains. These are very fertile because, time and time again over the centuries, rivers have flooded the land. Each time a river floods, it leaves behind a lot of the rich soil and minerals that it's been carrying.

Eventually, rivers find their way to the sea. River water still carries small amounts of minerals that have been



eroded from all the land it has passed through. These minerals make sea water salty. The salts become concentrated in the sea when water evaporates, leaving them behind. And this, of course, is where we came in ...