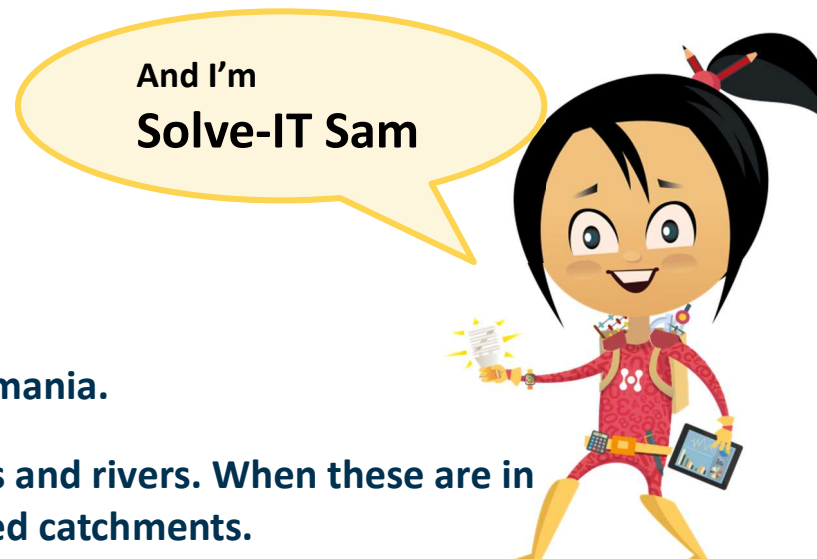


Year 4: HASS and Science

Activity: Our water catchments – monitoring in our catchments



We both work at Hydro Tasmania.

We help look after our lakes and rivers. When these are in the same area they are called catchments.

We take measurements, photographs and samples to record and assess what we see.

This is called monitoring.

Let's take a look...

Water flow

Each day Hydro Tasmania monitors how much water is flowing in our rivers

This is done to make sure there is enough water for:

- the power stations (to generate electricity)
- the animals and plants
- other users (businesses and individuals)

Hydro Tasmania has put measuring devices in rivers to record how much water flows past it every minute.

The device transmits the information to a computer in their office. It is then plotted (drawn) on a graph (like the one below).



Hydro Tasmania publish the graphs on their website so that other water users can see the information.



Lake levels

Each day Hydro Tasmania monitors our lakes and records the water level.

Monitoring the water level helps them to:

- know how much water they have in their lakes
- compare how much water there is now to before (last week, last month or last year)
- make sure there is water for everyone as well as the plants and animals in and around our lakes



The information is then plotted (drawn) on a graph. The graphs are also published on their website.

This helps other water users make decisions like:

- Is it a good water level for going boating?
- Is it a good water level for fishing?



Rainfall

Every time it rains, Hydro Tasmania records how much it rains.

Hydro Tasmania has rain gauges across Tasmania. The rain gauges inform them of:

- where the rain has fallen
- how much rain has fallen

Hydro Tasmania records this information in various charts, tables and on maps.

This information is important because the rain is collected by rivers and creeks. It then flows into Hydro Tasmania's lakes where it is stored.

The amount of rain changes:

- How much water is flowing in the rivers
- How much water is in their lakes

View the map on Hydro Tasmania's website www.hydro.com.au



Water quality

Hydro Tasmania monitors how clean the water is and if the plants and animals are healthy.

They use special equipment to take measurements in the field (at rivers and lakes).

Sometimes they collect a small amount of water in a jar. This is called a sample.

They analyse samples to look for:

- **Nutrients**
(these are necessary in small doses for plants to grow – too many nutrients are a bad sign)
- **Oxygen levels**
(how much oxygen is in the water – if there is too much or too little, animals in the lakes and rivers will die)
- **Turbidity**
(how clear the water is – if the water is cloudy plants cannot get enough sunlight to photosynthesise and may die)
- **Macroinvertebrates (bugs)**
(if there are lots of the right sort of bugs this means that the waterway is healthy)



Looking after the flora and fauna

Hydro Tasmania monitors the population and location of native flora and fauna.

Protecting threatened fish species

Hydro Tasmania's waterways provide an essential habitat (home) for threatened species. The Central Highland lakes contain five threatened galaxiid (fish) species.

They have funded research into how threatened fish species grow and reproduce, where and when they spawn, and the habitats they need to survive.

Hydro Tasmania use this information to help them manage water levels to protect important habitat.

Vegetation monitoring

Hydro Tasmania's lakes and rivers are home to native aquatic (underwater) and terrestrial (on land) plants. Like the galaxiids, some are threatened.

To monitor vegetation Hydro Tasmania scientists head out to site. Once there they observe their surroundings, take photos and write field notes. New technology means that they can map the locations where they find threatened plants or weeds by GPS coordinates on their iPads.

Vegetation helps to clean the water and air. It also provides habitat for animals.