

# Harnessing community knowledge through citizen science: co-design, co-monitoring and co-interpretation in practice

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'Caring for Waterhole Creek' is Environment Protection Authority Victoria's (EPA) first project that utilises **co-design, co-monitoring** and **co-interpretation**. These citizen science principles have been used to create a fit-for-purpose project that caters for the Latrobe Valley community's concerns about Waterhole Creek's state of health, investigates gaps in environmental data and increases awareness of waterway health. The Caring for Waterhole Creek campaign creates a two-way working relationship between EPA and the Latrobe Valley community, using citizen science to monitor the environment, respond to the community's environmental concerns and increase the scientific literacy of a community adversely affected by pollution.

## Caring for Waterhole Creek water monitoring campaign



### Co-design

- Latrobe Valley community invited to become EPA citizen scientists
- Citizen scientists directed where sampling sites would be located and how frequently they would monitor utilising their knowledge of the region
- EPA directed sampling equipment and sample types based on freshwater science expertise

### Co-monitoring

- Regular fortnightly field monitoring carried out by citizen scientists for: temperature, pH, turbidity, electrical conductivity, ammonia and phosphate
- EPA staff and citizen scientists take samples for macroinvertebrates, heavy metals in sediment, pesticides in water and e-DNA for dwarf galaxias

### Co-interpretation

- Workshop approach. EPA provides maps, water quality guidelines and support
- Citizen scientists compare their water data against EPA water quality guidelines, map the results and identify hotspots
- Citizen scientists present their results and conclusions to EPA freshwater scientists

### Shared understanding

- Citizen scientist's have an increased willingness to continue monitoring
- Working two-way relationship
- Increased trust
- The experience and knowledge provided by the citizen scientists and EPA was equally valuable



**Co-design, co-monitoring** and **co-interpretation** has resulted in an engaging citizen science program with scientific rigour, community relevance and connection to the environment. Surveys conducted throughout the project indicated citizen scientists had an overall positive experience of the project.

*"It's important for EPA and other science-based organisations to do what they can to ensure that everybody can be involved. In a small way, citizen science can play its part in increasing community awareness of environmental problems."* Bob, Caring for Waterhole Creek Citizen Scientist