Project Summary 2018-19

Effectiveness of rural land interventions to improve stream flows and water quality

Project C2: Rural Runoff

This project will develop a framework for the Rural Land Management Program to prioritise locations for investment and identifying the most appropriate rural runoff treatment measures.

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Melbourne Water makes major investments, including partnership with stakeholders, in mitigating the impacts of rural runoff on waterway and the effectiveness of this investment is constrained by limited information on:

- where the pollutants are coming from (i.e. the location and type of sources); and

- the effectiveness of runoff control measures.

This project aims to tackle these areas of uncertainty through investigations on the revegetated gullies in the Tarago catchment, a continuation of works in recent years.

The project will support the development of a framework for Melbourne Water's Rural Land Management Program to prioritise locations for investment and identifying the most appropriate rural runoff treatment measures. This capability will be used to substantially improve the existing RLMP benefit tool, as well as to provide guidelines for parameterisation of MUSIC to model rural mitigation measures.

Methods

The project will monitor flows and collect samples from seven monitoring sites to understand the concentration and loads of pathogens and chemicals delivered to the Tarago River, and to provide some understanding of the sources and origins of these pollutants to provide better information for accurate mitigation.

It will also be doing this from the buffered sites, allowed some evaluation of the performance of these buffers for pathogen and chemical reductions, and whether these buffers can reduce particular sources of microbial and chemical contamination.

In terms of pollutants, the project's focus will be placed on existing expertise of bacterial pathogens and bacterial source tracking, while pilot-scale work will also be undertaken to explore new areas of research, i.e. chemical contamination, chemical source tracking, protozoa contamination and protozoa source tracking.

Outcomes

- Performance of buffers for controlling physical pollutants, chemicals and microbial pathogens and their sources;

- Optimal structure and composition of buffers, including widths, vegetation layers and density;

- Impacts of stock access management on pollutant generation and export via buffers;

- Understanding of the level of microbial and chemical contamination generated from rural catchments in the Tarago reservoir;

- Understanding of the critical sources of bacteria, protozoa and viruses entering into the reservoir (and capacity of buffers to control); and

- Understanding of the sources of metals, nutrients, salts and xenobiotic compounds entering into the reservoir (and capacity of buffers to control).