



WAIRUA CATCHMENT, KAIPARA HARBOUR

DETENTION BUND PROJECT

PROJECT DETAILS

Project cost:

\$106,000

(Engineering, design \$45,000. Monitoring: \$26,000 Construction: \$15-20,000 each)

Location:

Wairua

Parties:

OPUS consultants

2 x Fonterra farms

Living Water

Project purpose:

To test the effectiveness of detention bunds for slowing water and trapping sediment in order to meet freshwater ecological outcomes

Project timeframe:

FY 2018/2019 – 2019/2020. Preliminary results will be available during this time period.



This is an overview of the Living Water detention bund project. This project is currently underway, with the bunds constructed in early autumn 2018. The objective is to demonstrate whether detention bunds are a viable option for use in catchment-scale freshwater ecological enhancement projects.

This case study document will be updated periodically as the project progresses.

BACKGROUND

- A Wairua Catchment ecosystem services report commissioned by Living Water identified widespread use of detention bunds as a potential solution for improving freshwater ecosystems and catchment resilience.
- The earth bunds are built in flow paths to collect and slow the release of storm water. Living Water is trialling two detention bunds in the Wairua catchment to assess their ability to reduce peak flow and capture sediment in a Northland farming landscape.
- Having measured their performance, we aim to assess the cost effectiveness and water quality outcomes if bunds were used as a solution throughout the entire catchment.



AT A GLANCE

Number of trial sites:

- Construction of bunds has occurred in two sites. One detention bund (where water is held temporarily only after rain events) and one retention bund (where there is always a base of stored water, which rises during rainfall events and gets let out slowly but not completely drained).

Scalability

- We plan to test whether this is a cost effective and scalable approach to managing peak run off and reduced sediment to waterways

Key anticipated outputs

- Known effectiveness of detention and retention bunds
- Repeatable design developed (in order to be scaled)
- Cost effectiveness of bunds if implemented at scale

Outcome sought

- To ascertain the effectiveness of bunds as a peak run off control and sediment attenuation tool

Learnings

- The consenting process has been relatively smooth. The detention bund did not require a consent as its size meant it fell under the permitted activity rule.
- Building these structure costs around \$18-20,000 each. The remaining costs for this project are absorbed in engineering design and monitoring of effectiveness. The challenge for Living Water is help fast track this process so future bunds are cost effective to install.

NEXT STEPS

Undertake the study as per the timeframe above and report on progress as results come to hand.

FIND OUT MORE

Contact: Manager Sustainable Dairying Living Water, Matt Highway (matt.highway@fonterra.com)

Vlog explaining detention bunds: https://www.youtube.com/watch?v=9VNe_Y91J0M

Timelapse of construction: <https://www.youtube.com/watch?v=XooY7jKMNd0>



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Conservation
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