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Transforming open drains to support healthy waterways

Open drains on farms are important to ensure that pasture isn't waterlogged and remains productive. Water in these areas may be carrying contaminants which may then enter larger drains - ending up in a stream or the Taieri River. Contaminants include sediment, faecal matter and nitrate, and these can impact river health.

These drains can be enhanced to help capture and filter contaminants, resulting in improvements to stream and river health on the Taieri Plains while still maintaining the effectiveness of your drains.

Management approach

Open drains can be widened and re-shaped before they exit your farm - see below for some recent examples on the Taieri Plains.

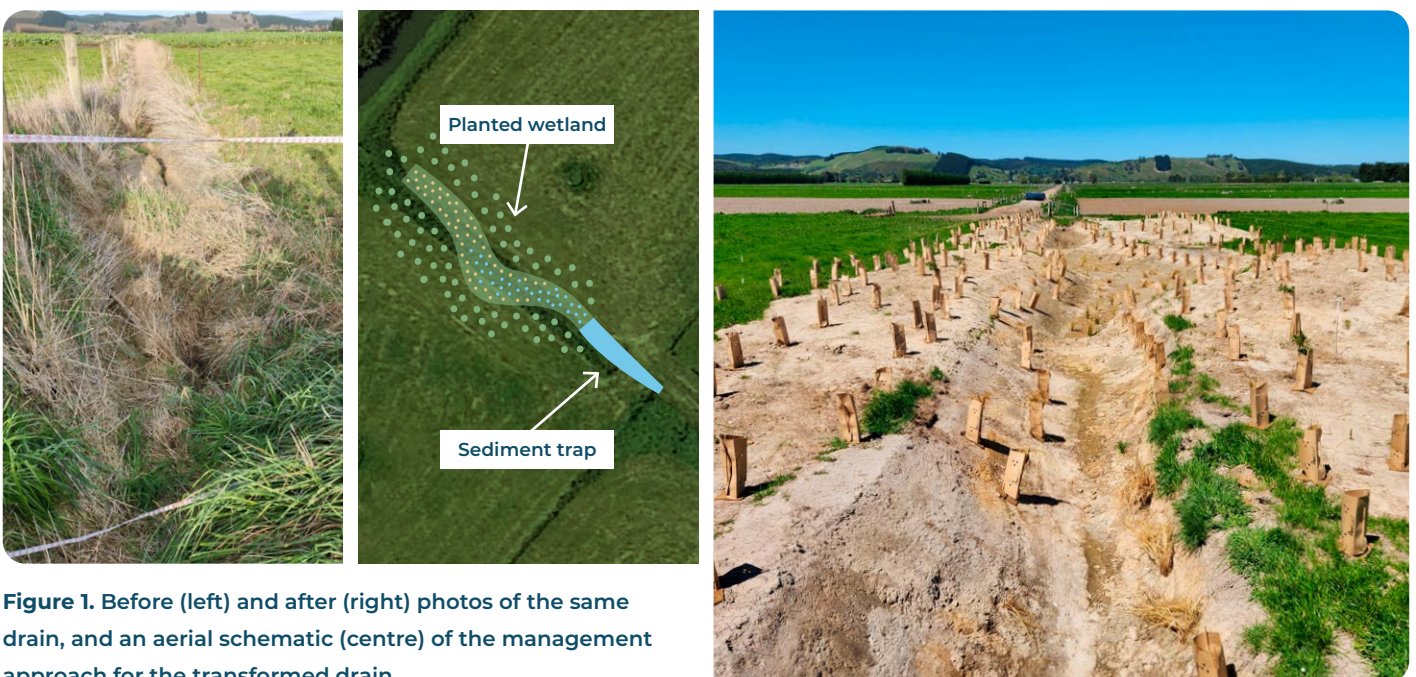
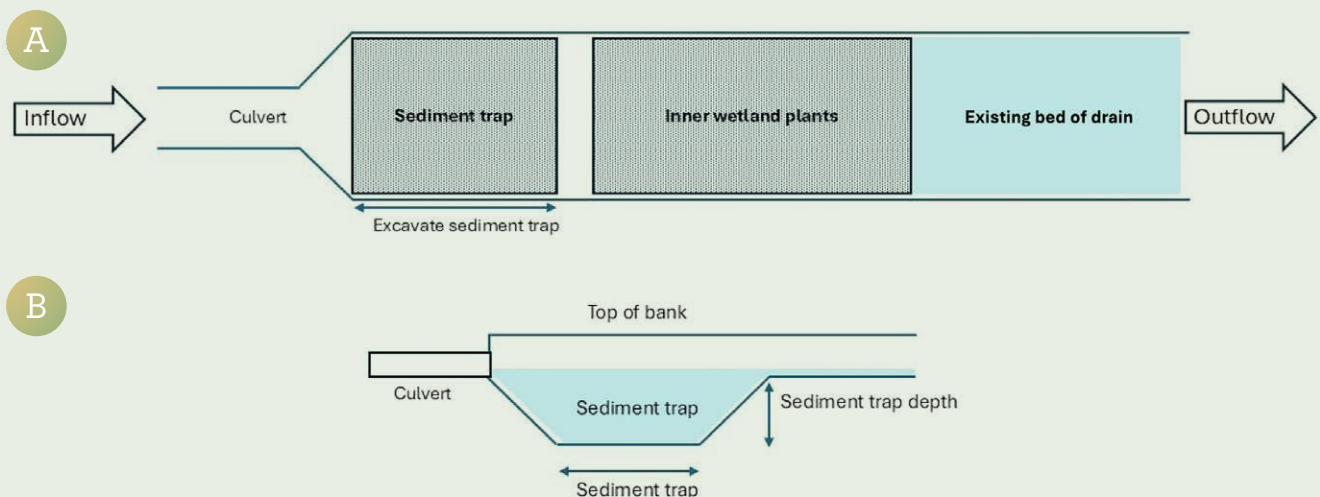


Figure 1. Before (left) and after (right) photos of the same drain, and an aerial schematic (centre) of the management approach for the transformed drain.



Figure 2. Management approach applied to another farm drain (before left, and after right) – this one has been widened and planted, with a small sediment trap.

The diagram below provides a schematic of how this was approached on one farm.



Points to note:

- These drains have been widened to ensure that there is no reduction in water conveyance, and they continue to drain the pasture.
- Sediment capturing areas were installed to capture any sediment leaving the farm e.g. off laneways.
- The newly opened and widened drain has been planted with the intention of filtering any water moving through the area.

If key on-farm drains are treated in this way across many farms on the Taieri Plains, then there will be cumulative benefits to both water quality and biodiversity. These actions can add up to have a big impact on improving stream and river health.

Additional options

Widen fences to create areas where further planting can be undertaken, which can quickly grow to provide shade and shelter to your stock. Through targeted planting at these sites, we're aiming to create areas for native birds and other species to live and thrive. We've planted species that are suited to the Taieri Plains, including those listed in the table below.



Figure 3. Farm drain with planting and sediment trap.

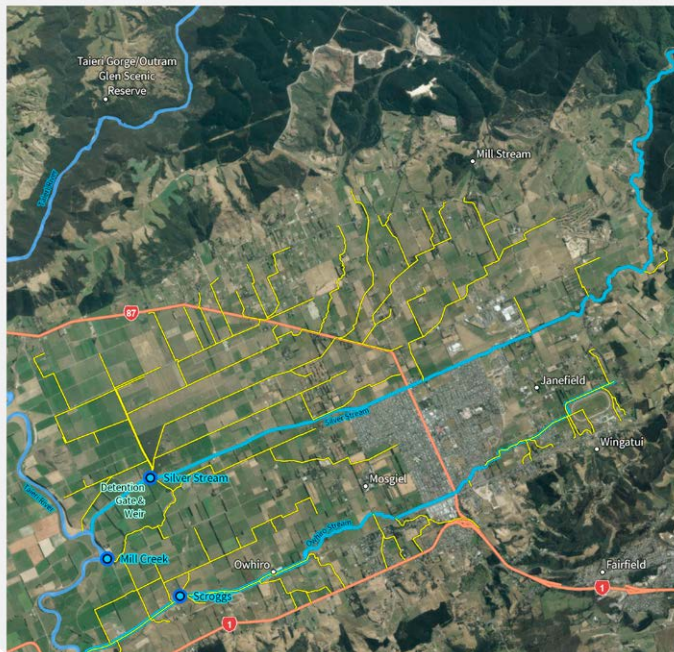
WET AREAS			
Plant species	Common name	Description	Planting for success
<i>Carex secta</i>	purei, sedge	1.5 m tall. Drooping harsh tussocks forming trunk-like base when mature. Green year-round.	Avoid planting in standing water, but once established, will tolerate moist lower embankments and shallow water to 0.2 m depth.
<i>Carex virgata</i>	pukio, swamp sedge	1–1.5 m tall. Green slender leaves, which are more upright than <i>Carex secta</i> . Thrives in damp, swampy conditions.	Avoid planting in standing water, but once established, will tolerate moist lower embankments and shallow water to 0.2 m depth.
MID ZONE			
Plant species	Common name	Description	Planting for success
<i>Austroderia richardii</i>	toetoe	1–3m tall. Coarse green tussocks, with tall feathery flower heads borne on cylindrical stems.	Mid-zone with occasional wet roots.
<i>Phormium tenax</i>	harakeke, New Zealand flax	1–3 m tall. Robust clumps of tough robust leaves. Tall dark brown to black flower heads.	Mid-zone with occasional wet roots.
<i>Coprosma propinqua</i>	mingimingi	1.5-5m tall. Common bushy shrub, with angled branches bearing glossy angled leaves.	Mid-zone with occasional wet roots.
DRIER AREAS			
Plant species	Common name	Description	Planting for success
<i>Cordyline australis</i>	ti kouka, cabbage tree	Up to 12m tall. Tall-growing soft stemmed tree bearing tufts of fibrous leaves.	Upper zone. Can tolerate a mixture of moist and drier soils.
<i>Hoeheria angustifolia</i>	narrow-leaf lacebark	Up to 10m tall. Tall soft-wooded grey-trunked tree bearing masses of narrow sharply toothed leaves and small clusters of white flowers that develop into dry papery winged fruits.	Upper zone. Can tolerate a mixture of moist and drier soils.
<i>Plagianthus regius</i>	ribbonwood	Up to 20m tall. Tall tree with soft jagged pointed leaves and long sprays of tiny yellowish flowers and small green fruit that fall as a unit.	Upper zone. Can tolerate a mixture of moist and drier soils.

ORC Flood Protection Management Bylaw 2022

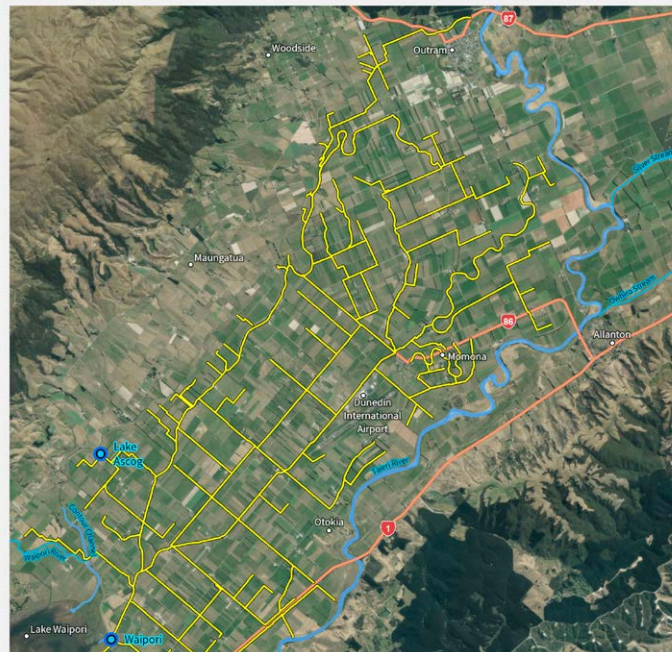
Don't forget to check if your drain is part of the ORC's Flood Protection Management Bylaw 2022 before undertaking any significant works on drains on the Taieri Plains. Check the following maps:



East Taieri Drainage Scheme



West Taieri Drainage Scheme



East Taieri:
taieriwai.nz/orceast



West Taieri:
taieriwai.nz/orcwest

About the Healthy Taieri Project

This summary has been prepared as part of the Healthy Taieri Project on behalf of Upper Taieri Wai. This project is funded by the Ministry of Primary Industries' Integrated Farm Planning Accelerator Fund.

A report on water quality in the lower Taieri catchment, including the locations and details of current and past monitoring are available at www.taieriwai.nz. This site also has more resources from the Healthy Taieri Project.



All on farm work was delivered as part of the Regenerating Wetlands Partnership between NZ Landcare Trust and Fonterra. Funding was provided to support dairy farmers on the Taieri Plains to enhance critical wet areas on farm.