

## Background

Near Parewanui, the Rangitikei River meanders, eroding the west bank. Flooding during Cyclone Gabrielle accelerated the erosion, and the river almost reached the stopbank.



Horizons Regional Council employed contractors to backfill and repair the 400m long damaged section of riverbank.



Fortifier Erosion Control Rock Bags were filled with local, ungraded river run material, with rock size ranging from sand up to around 300mm. (4 tonne Rock Bags pictured.)



A row of 4 tonne bags was placed at the toe, and 2 tonne bags layered above, staggered in the staircase method.



The damaged section of river bank was filled and planted with Willow trees, with the Rock Bags positioned to take the brunt of the river's impact, shielding the plantings while they mature.



This image is from a different installation, however it illustrates how flow velocities are slowed greatly around the Rock Bags, allowing silt to be deposited.



After several high water events, the Parewanui installation has settled, and silt buildup has begun.



This satellite image some time after the repair was completed shows that the Rock Bags have done their job perfectly, withstanding several floods, and assisting the main channel to meander away again.

Note the white patches visible amongst the willow plantings where the river has inundated the repair, depositing silt, but not eroding.



Nursery plants and grasses have also naturally begun to grow within and through the Rock Bags.



Root systems will tie bags together and further contribute to bank retention. Eventually, the bags will be covered and integrated into the habitat, assisting stability and promoting rejuvenation of the damaged area.

