

## rock reinforcements for shady orchard watercourses

**Landholder** Ian Clapham, Yarralumla Plantations

**Map reference** 7

**Land use** Macadamias

**Soil Erosion Solutions Grant** \$10,000 (tree removal hire equipment & operator for earthworks)

**Landholder's in-kind contribution** \$10,011 (labour, tree removal, tree pruning, grass planting, maintenance, rock works & grass)

### The site

An older macadamia orchard with a nearly closed canopy had been established with little regard for natural watercourses. As a result there was extensive sheet erosion with exposed tree roots, and gullies had formed where waterflows concentrated in the orchard. The damage to the orchard floor meant machine-harvesting in those areas of the orchard was ineffective. A new owner wanted to reduce the dramatic soil loss and improve machine-harvesting while maintaining existing production levels.



Low light levels and tree rows cutting across natural drainage lines

### The project

- Gullies running down the interrows were filled with large gravel. Some trees were removed and others pruned to assist grass cover to be established over the top of the gravel, permitting machine-harvesting. The filled gully functions as both a subsurface and surface drain.
- Where water flowed across the tree rows small rock check dams were installed to slow the water down and encourage sediment deposition.
- Selected trees growing in natural flowlines were removed.
- Windbreak trees causing excess shading were removed.



Rock fill in a gully protects against further erosion

### The benefits

- Active gully erosion through the orchard has been greatly reduced.
- Extra light has improved groundcover, reducing sheet erosion.
- Sediment is being trapped within the orchard, rather than ending up in dams and watercourses.
- The orchard's production has not been interrupted or set back by the erosion control works.

### Landholder's experience

What was the **best thing** about this project?

"The support from Soil Erosion Solutions to identify the priorities, planning and refining the project."

What was the **most difficult** aspect of the project?

"Trying to do something effective without disrupting the running of the orchard at the beginning of harvest."



A small check dam protects where water crosses the tree line