

Riparian Planting Plan – Waikaka Stream Southland

1. Objectives

- Protect water quality by filtering sediment, nutrients, and runoff from adjoining land. Stabilise streambanks to reduce erosion.
- Provide habitat for native fish (e.g. kōaro, longfin eel, īnanga) and birds.
- Provide shading to lower stream temperature.
- Support biodiversity with locally appropriate native species.

2. Planting Zones

(from stream edge outwards, typically 5–15 m width depending on land availability)

Zone A – Toe of Bank / Water's Edge (0–1 m)

- Purpose: Bank stabilisation, filter fine sediment
- Plants:
 - *Carex secta* (greater swamp sedge)
 - *Carex virgata* (pale sedge)
 - *Carex geminata*
 - *Juncus edgariae* (wiwi)

Zone B – Lower Bank (1–3 m)

- Purpose: Dense grass/sedge cover, prevent slumping, trap nutrients.
- Plants:
 - *Flax/harakeke* (*Phormium tenax*)
 - *Toe toe* (*Austroderia richardii*)
 - *Mānuka* (*Leptospermum scoparium*)
 - *Hybrid Willow* (*Salix matsudana*)

Zone C – Mid-bank / Floodplain Margin (3–6 m)

- Purpose: Shrubs and small trees for cover, bank stability, shading.
- Plants:
 - *Coprosma robusta* (*karamū*)
 - *Coprosma propinqua*
 - *Pittosporum tenuifolium* (*kōhūhū*)
 - *Cordyline australis* (*Ti kouka/cabbage tree*)
 - *Pittosporum eugenoides* (*Lemonwood*)
 - *Griselina littoralis* (*Kapuka*)
 - *Hebe solicifolia* (*Koromiko*)

Zone D – Upper Riparian Margin (6–15 m)

- Purpose: Tall forest species for shade, long-term habitat, shelter.
- Plants:

- *Kowhai* (*Sophora microphylla*)
- *Ribbonwood* (*Plagianthus regius*)
- *Kahikatea* (*Dacrycarpus dacrydioides*, in wetter soils)
- *Totara* (*Podocarpus totara*)
- *Mountain beech* (*Nothofagus solandri* var. *cliffortioides*) where suitable

3. Layout / Spacing

- Sedges and rushes: 0.5–0.8 m spacing in staggered rows.
- Shrubs and flax: 1.2–1.5 m spacing.
- Small trees: 2–3 m spacing.
- Tall trees: 3–5 m spacing.
- Average 3,000–4,000 plants/ha.

4. Site Preparation

- Fence off from stock access.
- Spray narrow strip (herbicide or scrape mulch) before planting. No spraying during windy or wet weather.
- Spray selection to be determined in consultation with Hokonui Rūnanga
- Control weeds (willows, broom, gorse) before establishing natives.

5. Planting

- Use fertiliser to assist initial establishment. Fertiliser type and application to be determined in consultation with Hokonui Rūnanga
- Use tablets or apply granules > 2m from the stream channel.
- Plant grades are to be a minimum of PB3 (or similar).
- If required, plants are to be protected against rabbits with a guard.
- Irrigate if necessary and apply mulch around plants to retain moisture.

6. Maintenance

- Weed control: 2–3 times per year for the first 3 years, or as necessary depending on the local conditions and speed of weed establishment.
- Release spray/mulch around young plants.
- Replace dead plants (up to 20%).
- Monitor streambank stability and adjust planting if erosion hotspots appear.

7. Additional Features

- **Access paths:** Two 3m wide grass strips for farm/maintenance access. Location is to be confirmed.
- **Habitat features:** logs, rocks, or backwaters to support fish and invertebrates.

8. Timing

- Planting to be undertaken immediately following reinstatement of the stream channel.

Diversion	Length (m)	Year Diverted	Year Reinstated
Waikaka Diversion 1	470	3	4
Shepherds Creek	590	4	5
Waikaka Diversion 2	630	4	6
Waikaka Diversion 3	700	6	7
Waikaka Diversion 4	550	7	8
Total	2940		

Planting Schedule

Zone A - Toe of Bank/Water's Edge (0-1m)



Carex secta Pūrei
Greater swamp sedge



Carex virgata Pale
sedge



Carex geminata
Wetland cutty grass



Juncus edgariae Wiwi



Carex comans
Maurea

Zone B - Lower Bank (1-3m)



Phormium tenax
Harakeke/NZ Flax



Australaderia richardii
South Island Toe Toe



Leptospermum scoparium
Manuka/Tea Tree



Salix matsudana
Hybrid willow

Zone C - Mid Bank / Floodplain Margin (3-6m)



Coprosma robusta
Karamu



Coprosma propinqua
Mingimingi



Pittosporum tenuifolium
Kohuhu



Cordyline australis
Ti kouka/cabbage tree



Pittosporum eugenioides
Tarata / lemonwood



Griselinia littoralis
Kapuka / Kaupuka



Hebe salicifolia
Koromiko / Hebe

Zone D - Upper Riparian Margin (6-15m)



Sophora microphylla
South Island Kowhai



Plagianthus regius
Ribbonwood



Dacrycarpus dacrydioides
Kahikatea/White Pine



Podocarpus totara
Totara



Fuscospora cliffortioides
Mountain Beech