

Orari - Opihi - Pareora Planting Guide

WORKING FOR OPIHI WATER

Farmers and residents in the Orari, Opihi and Pareora catchments are seeking advice on how to prepare for, undertake and maintain riparian plantings. The Working for Opihi Water project has compiled this brochure to provide information to guide you to begin the process. Most importantly it also includes advice on some species that are known to establish and grow well in the region.

We also encourage you to do your own research and ask professionals for assistance as every planting situation is different. References can be found on the back page.

For farmers riparian plantings are becoming an important element of on-farm sustainability and are some of the steps needed to ensure increasing environmental requirements are met.

Andy Palmer's
plantings on
Ohapi Creek.

Benefits of riparian plantings

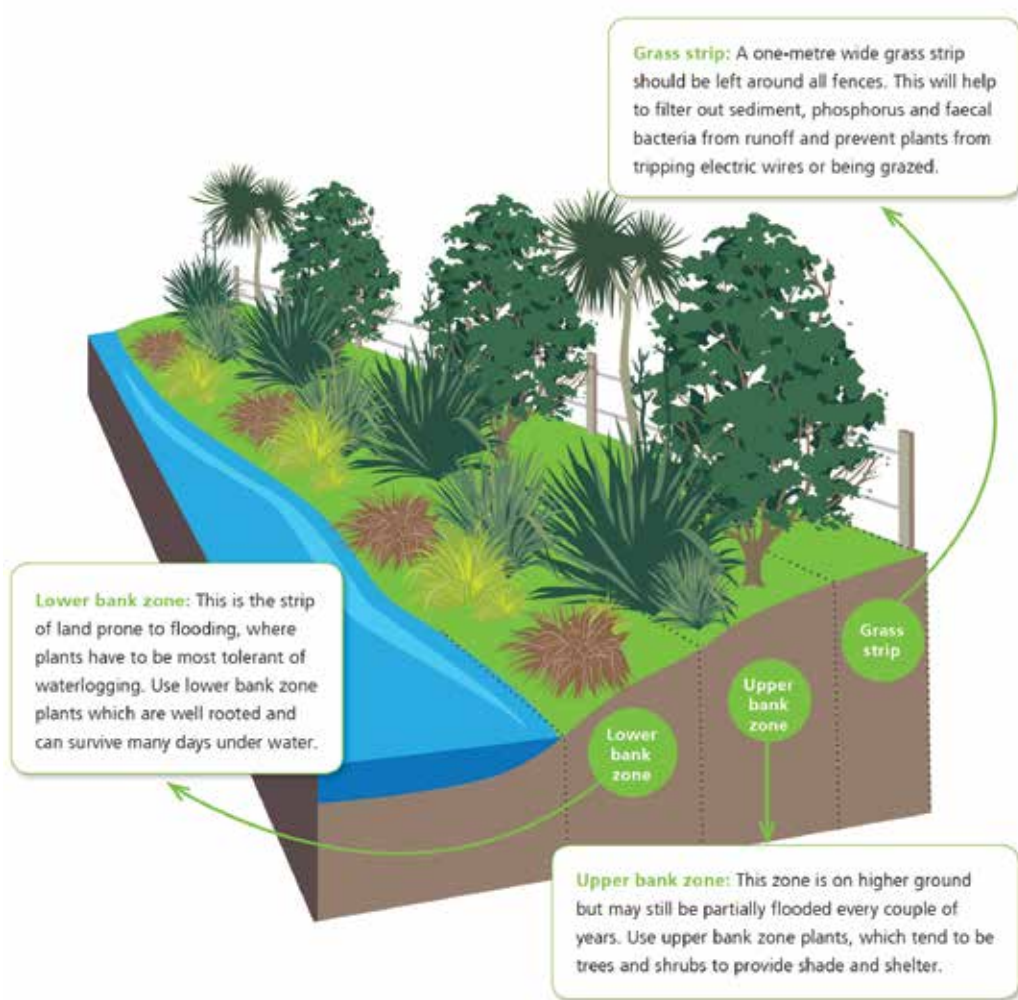
The benefits of well-planned and well-managed riparian planting areas on farm are considerable:

- Increases the quality and health of waterways;
- Increases the ability to filter nutrients before they reach waterways – Nitrogen, Phosphorus and bacteria/ viruses eg. E.coli;
- Reduces sediment run off;
- Reduces soil erosion of banks in waterways;
- Provides shade which reduces waterway temperatures;
- Minimises stock losses as animals are excluded by fences from riparian strips;
- Increased bio diversity of farm – aquatic life, native plants, birds and insects;
- Improves recreational opportunities eg. fishing;
- Enhances and beautifies your farm and adds value;
- Provides shade and shelter during bad weather for both animal welfare and productivity gains.



Steps to successful establishment: Plan well before taking action!

- Identify the areas to plant. Develop a realistic 5 - 10 year plan to progressively plant areas. Taking this first step will record your intention and focus to make things happen. Your initial plan may need to change for a variety of reasons but it will remain a reference document to action.
- Ensure you note how high flood levels reach up the banks of waterways.
- Planting too large an area at once reduces the chance of maintaining it well.
- Develop a budget for yearly planting and maintenance and include that in your annual financial plan. Some years it maybe possible to afford more plantings or boost maintenance of establishing plants. The purchase cost of plants can now be treated as operational costs for income tax.
- Order and select plants in advance to ensure supply of the grade size you want. Plants in 1 litre pots are an ideal size – they will cost more initially and should reduce losses and having to replant in future.
- Fence off areas along waterways to be planted up. A strip width at least 5 metres wide will ensure plants have adequate space to grow. Avoid planting too close to the fence so stock has less chance of eating plants.
- A wider strip will be needed to plant trees that ensure the waterway is shaded to reduce weed growth and cool the water. This type of planting suits a north bank and allows the south bank to be planted with low growing species that still filter any run off but enable access.
- If the slope beside the waterway is steeper a wider strip (approx. 10 metres) will be necessary than that required in a flat area. Seek advice for your particular situation.
- Remove unwanted weeds and plants like gorse, blackberry, broom, crack willows and other unwanted species.
- Erect a fence type that best suits the stock type you will graze. Your choice also needs to consider the height of the waterway during floods.



Species well suited to planting in the Orari, Opihi & Pareora catchments

Plant name	Latin name	Type	Zone	Tolerates						Benefits						Size (h x w)
				Full sun	Wind	Salt wind	Frost hardy	Boggy soil	Dry soil conditions	Attracts birds	Attracts bees	Slope Stabilisation	Filters runoff	Shade	Fish habitat	
Lower bank zone (Space 1 – 1.5 m between plants)																
Cabbage Tree (tī kōuka)	<i>Cordyline australis</i>	Tree	P/D/H	*	*	*	*	*		*	*	*	*		10 x 3 m	
Sedge (pūrei)	<i>Carex secta</i>	Sedge	P/D	*	*	*	*	*				*	*	*	0.75 x 1 m	
Red Tussock grass	<i>Chinochloa rubra</i>	Grass	P/D/H		*		*	*				*	*		1 x 1 m	
Swamp Sedge (pūrei)	<i>Carex virgata</i>	Sedge	P/D		*	*	*	*				*	*	*	0.75 x 1 m	
Jointed wire rush (oiioi)	<i>Apodasmia similis</i>	Grass	P/D	*	*	*	*	*	*			*	*	*	1 x 1 m	
Upper bank zone (Space 1.5 – 2 m between plants)																
Mikimiki or Mingimingi	<i>Coprosma propinqua</i>	Shrub	D/P/H	*	*	*	*	*	*	*	*			*	4 x 1.5 m	
Swamp Flax (harakeke)	<i>Phormium tenax</i>	Other		*	*	*	*	*		*	*	*	*		2 x 2 m	
Black Matipo (ko-hu- hu-)	<i>Pittosporum tenuifolium</i>	Small tree/tree	D/P/H	*	*		*			*		*	*	*	8 x 3 m	
Shrub Daisy	<i>Olearia hectori</i>	Shrub	H				*	*	*					*	3 x 3 m	
Broadleaf	<i>Griselinia littoralis</i>	Tree	D/P/H	*	*	*	*	*	*	*	*			*	10 x 3 m	
Koromiko	<i>Hebe salicifolia</i>	Shrub	D/P/H	*	*	*	*			*	*	*		*	1.8 x 1 m	
Lemonwood (tarata)	<i>Pittosporum eugenoides</i>	Tree	D/P	*			*		*	*		*		*	9 x 4 m	
Lowland Ribbonwood (manatu)	<i>Plagianthus regius</i>	Tree	D/P	*			*	*		*	*	*		*	3 x 15 m	
Mountain Flax	<i>Phormium cookianum</i>	Grass	D/P/H	*	*	*	*	*		*	*	*	*		2 x 2 m	
Narrow Leaved Lacebark	<i>Hoheria angustifolia</i>	Tree	D/P		*		*	*	*	*	*	*			6 x 3 m	
Kowhai	<i>Sophora microphylla</i>	Tree	D/P/H	*	*		*			*					6 x 4 m	
Kanuka	<i>Kunzea ericoides</i>	Tree	D/P/H	*	*	*	*	*	*		*	*		*	8 x 4 m	
Toetoe	<i>Austroderia richardii</i> or <i>Cortaderia richardii</i>	Grass	D/P	*	*		*					*	*		1.5 x 3m	
Plants for under Pivots																
Sedge (pu- rei)	<i>Carex secta</i>	Sedge	P/D	*	*	*	*	*				*	*	*	0.75 x 1 m	
Koromiko	<i>Hebe salicifolia</i>	Shrub	D/P/H	*	*	*	*			*	*	*		*	1.8 x 1 m	
Toetoe	<i>Austroderia richardii</i> or <i>Cortaderia richardii</i> or <i>Cortaderia toetoe</i>	Grass	P/D	*	*		*					*	*		1.5 x 3m	
Wire vine, scrambling pohuehue	<i>Muehlenbeckia complexa</i>	Shrub	D/P/H	*	*	*	*			*					2m	

Zone P = plains, D=downs, H=high country

The above list is a guide only. There are a number of other species available. Ask your nursery for eco-sourced plants as they are grown from local wild seed and they are best adapted to your climate and soils.

Effective planting technique

- Remove weeds or grass. 4-6 weeks before planting spray out 1 metre diameter circles at each planting position with a glyphosate-based herbicide. Check the product information to ensure correct application rates.
- Spring planting is best. Ensure plants are hardened ie. no soft new growth. The spacing between plants is ideally 1.5 metres.
- The planting hole needs to be deeper and wider than the plant's root system. Loosening the soil below the plant will allow the root system to spread out and establish more quickly. If roots are tangled cut off 1 cm and slit the sides in three places to encourage new roots.
- Ensure plant protectors are used and a 30-40 cm biodegradable, weed suppressant mulch like old carpet, cardboard or straw placed around the base. The protectors are effective against rabbits and hares, help retain moisture and reduce the effect of cold winds. Stakes can also be used to locate the plant (but don't attach the plant to the stake).



Diagram courtesy of DairyNZ

Successful riparian planting in Orari

Andy Palmer's dairy farm is in the Orari catchment, his farm has 3 km of meandering Ohapi creek, which he has progressively riparian planted over half of. Planting started in early 2000s and each year Andy adds to it. Andy's advice is to "Only do an area you can look after. There is no point to putting in thousands of plants if you can't look after them." Initially Andy lost some plants to frosts, now he selects the more robust frost hardy species like carex, flax and cabbage trees for the first stage and avoids the broad-leaves that don't survive the frost. "The more work you do pre-planting the better to clear broom, gorse etc." This preparation work includes making sure fences are in the right place and fully stock proof. "One or two cows can destroy 2 years of work." At first Andy had the fence close to the creek to reduce the loss of productive land. Now he has moved the fence further back in places so low lying areas can be planted and the race has been moved away from the stream. Plant protectors are used and removed after 12 months so that they can be reused.

Andy used to play in this creek as a child so wants to protect it for his children. He has noticed that his staff now show more pride in the farm since starting the riparian planting. In addition to this he thinks the planting adds value to the property and provides shelter for the cows.

The project partners are very grateful that DairyNZ has allowed the use of excerpts from their document.

Maintenance -

Vital for plant establishment!

- For 5 years after planting, regular maintenance is vital. This involves both weed and pest control. Always take care to protect the plant before spraying and ensure you select the correct sprays and follow instructions.
- Hand weeding is another option as is weed eating (string trimming) until the plants are established.



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