

# CODE OF PRACTICE

Guidelines for Water Race Property Owners

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## Taratahi and Carrington Water Races

### 1. Background

The Carterton District contains two water race systems that total some 306km in length. The Taratahi race (270km long) takes 800 litres per second (l/s) from the Waingawa River when the river exceeds 3500 l/s at the gauging site, 480 l/s when the flow is between 1900-3500 l/s, 410 l/s when the flow is between 1700-1900l/s, and 337 l/s when the level at the gauging site is less than 1700 l/s. The Carrington race (36km) takes 250l/s from the Mangatāre Stream when the flow exceeds 1200 l/s at the gauging site, 113 l/s when the flow is greater than 330l/s, and 65l/s when the low is less than 240 l/s.

The Taratahi and Carrington races have resource consents, which allow them to take water for the race (for stock watering purposes), and discharge contaminants to waterways at the end of the race branches. Although some rural land owners have expressed a negative view of having the races passing through their land, surveys of users have shown that the majority of land owners want them. The races were created decades ago to allow dry land to be farmed. For some users their existence is still vital and without them many farmers could not sustain their current or in some cases even economically viable farming practices.

In addition, the water races have developed their own individual ecosystems and are an established part of the environment.

For those with alternative water sources or who do not farm their land intensively, costs for upkeep of the race systems can seem a burden. However, the fact remains that the best option for the community as a whole, is to keep the races, and the races cannot continue to function within their consented conditions unless all people whose land the race passes through understand and adopt this voluntary code of practice. The intent from both Greater Wellington Regional Council and the councils is to look at a longer-term strategy, common sense good practise guidelines.

### 2. Purpose

This code of practice/strategy is designed to minimise:

- the wastage of water from the Taratahi and Carrington water races
  - the input of contaminants from various farming and land activities to these races
  - other adverse environmental impacts from the race systems and their associated operation.
  - Maintain effective management of the water race and reduce constraints on their operation
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### 3. Status

This code of practice/strategy is a voluntary document and compliance with it is not enforceable. The users of these races, however, recognise that whilst highly beneficial to many, the taking of water, and discharging of contaminants to water, which are activities associated with the races, must comply with laws such as the Resource Management Act 1991, the Carterton District Council Race Bylaws, and the granted Resource Consents.

By adopting this code of practice/strategy, the race users intend that negative effects and practices associated with the races can be minimised, allowing users and the environment to continue to receive the benefits of access to the race waters while ensuring overall compliance with the condition of the resource consent. This may also lead to a reduction in both management costs and maintenance costs.

### 4. Best Practical Means

This document is based on encouraging users to adopt a “best practical means” of meeting the main purposes of reducing wastage and minimising pollution. What this means is that there may be several ways of addressing a particular problem, and each property owner may select the way which best suits their particular situation. Stopping stock wading in the race, for example, could be met by:

- fencing off the race and pumping water from the race to stock troughs
- locating an electric wire along the centre of the race, allowing stock to access the edge for drinking but not into the race for wading and wallowing
- stocking the paddocks which the race passes through with stock which do not stand in the race, (sheep instead of cattle, for example).

To assist with determining the best practical means, the Water Race Committee will provide an advisory service, either through their members or with assistance from the Carterton District Council, depending on the needs of individual race users.

### 5. Minimising Water Wastage

The resource consent to take water from the Waingawa River for the Taratahi Water Race allows for a maximum take of 800 l/s when there is normal flow in the river, reducing to 337 l/s during low flow conditions.

Similarly, there are reducing water volumes allowed to be taken from the Mangatāre for the Carrington Water Race as the river flow drops.

Even with the maximum allowable takes the flows at the ends of the races are minimal and stock can be deprived of water.

It is therefore important to make the best use of the water and not to waste any, particularly during low flow conditions in summer.

Water is wasted by the following practices:

- **Allowing** the race to become wider and shallower than is necessary to handle the flow and provide stock access. A wider race has a larger surface for evaporation. For every 100km of race length, a doubling of the race width from say 1m to 2m, would provide an extra 500m<sup>3</sup> of water loss by evaporation per day on a dry windy day. A shallow race

with low freeboard, (the height between the top of the race bank and the water level), can also allow water to escape onto surrounding land, and may create rather than remove flooding during high rainfall events.

- **Allowing** the base and sides of the race to become more permeable to water flow into the surrounding ground. This could be by cracking, having a gravelly base with permeable soils below, or could be occurring at a moderate rate through the existing soils. Such losses could be reduced by appropriate maintenance and repairs, potentially including lining the race with low permeability soils such as clay or synthetic lining materials in the high risk portions of the network. It has been estimated for the Taratahi race system that over 50% of the water taken into the race may be lost through seepage into the ground. Such estimates have not been made for the Carrington race, but it may be that the levels are similar or even higher.

Advice on cleaning, maintenance, and repair of the race to make best use of the water is available from farmers on the Water Race Committee, and the Carterton District Council.

- **Using** water from the races for any purpose other than stock watering, especially if such use involves taking the water, by gravity or pumping, out of the races. The exception to this is water taken from the very end of the race branches, especially where the water quality at that point is significantly degraded and creates an impact on the receiving waters.

## 6. Minimising Race Water Contamination

The Taratahi Race water starts at the Waingawa River, and the Carrington race at the Mangatārere Stream. Where these waters leave their source rivers, they are of very high quality. As the water flows along the races, however, it is progressively degraded to a lower quality.

This is from such causes as:

- **Stock wading** along the races instead of just accessing them from the edge for drinking, and or causing bank erosion.
- **Drainage ditches**, which may be directed to the races, adding to the contaminant load the race waters carry,
- **Stock driving races** which pass over the water race and the runoff from these when it rains flowing into the water race,
- **Vehicle and stock crossings** passing through the water race, stirring up sediment and washing debris from tires and vehicle undercarriages into the races
- **General land drainage**, putting contaminants such as; sediment, microbes, and nutrients from fertilisers into the water race,
- **Sediment, weed or herbicides** from race clearing activities,
- **Fertiliser application**, being undertaken too close to the race or to steep banks to the race.
- **Urban pollution** where the races interact with waterways and flow from urban areas
- **Road runoff**

While some of these activities are hard to avoid, it is possible to minimise their effect to a much greater degree than is currently occurring.

The poor water quality which currently occurs in the lower reaches of many branches of the race can create stock health problems for the users in these area and can have a significant

impact on the water quality of the rivers and streams that the race branches eventually flow into.

Where the quality of these receiving waters is currently not high, the intention is to gradually improve this quality. This improvement will not occur straight away but will happen over a matter of years or even decades if the individual discharges of effluent and contaminated waters to the waterways are reduced. Such district wide improvements are already starting to happen with the Carterton District Council obtaining new consents to upgrade the community wastewater treatment facilities for Carterton and improvements in dairy shed effluent treatment and disposal.

## 7. Minimising Environmental Impacts

The race systems have been in existence for so long that although man made, they have now become an important part of the natural ecosystem. In particular they are home to various fish life including eels, kokopu, and brown mudfish. During drain cleaning activities, all eels and other fish should be returned to the race up stream of the cleaning activity. It is recommended that landowner discuss the best method of drain cleaning with either the Carterton District Council or the Greater Wellington Regional Council to ensure environmental impacts are minimised in the process.

## 8. Landowner Checklist

- Take a fresh look at your races and fill in the Landowner checklist.
- Listed are the most common causes of excessive water wastage and entry of contaminants.
- Consider how you could make improvements to reduce wastage and contamination of the water in the race as it passes through your property.

This Code of Practice/Strategy provides an opportunity for the farming industry, and other bodies to demonstrate their ability to voluntarily adopt common sense and workable solutions to a common problem, and ensure the continuance of the races for the benefit of the community as a whole.

Compliance with the code of practice/strategy will also significantly contribute to improving and sustaining the quality of water in the waterways of the Carterton District, whilst ensuring that Carterton District Council is meeting the terms and conditions of its Resource Consents thus further ensuring the longevity of the water race network.

## 8.1 Landowner Checklist

Property:	Owner:
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Date:	Number of Race Branches:	Total Length of Race:
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<b>Problem</b>	<b>Current State on Property</b>	<b>Preferred Fix of Problem</b>	<b>Date Fixed</b>
Stock wandering in aces			
Drainage feeding into race			
Stock races draining into race			
Vehicle crossing in race			
Race cleaning – (herbicide spraying only by approved contractors, return of eels and fish)			
Fertiliser application (application to be kept away from race and steep banks leading to race)			
Race Width (should be as narrow as possible).			
Race Freeboard (should be as high as possible)			
Water Loss Through Race (assistance can be provided to measure this)			
Water Used for Other Purposes.			

## **9. Water Race Planting Strategy**

### **9.1 Introduction**

The Planting alongside Stock Water Races Guideline specifies the rules and conditions for a private land-owner wanting to plant adjacent to stock water races. It should be read in conjunction with the Carterton District Council Water Race Bylaw.

### **9.2 Context**

This guideline has been formulated in the context of ensuring races are kept free from vegetation and debris that could impede a races function in delivering water to stock while also allowing for improvements in the water quality and amenity values of races, and the retention of their ecological values.

Compliance with this guideline and the Water Race Bylaw does not necessarily imply compliance with the rules of the Greater Wellington Regional Council's Proposed Natural Resources Plan and resource consent may be required.

### **9.3 Guideline Objective**

The objective of this guideline is to provide a standard approach for approving and recording applications for permission to plant trees or shrubs alongside water races. This guideline will encourage riparian planting where it is done so in a manner which enhances the water quality.

A landowner applying for a permit to plant alongside a water race must comply with the provisions under Section 4 of this guideline and with the table of acceptable plants.

### **9.4 Guideline Statement**

Trees and shrubs may be planted within 10 metres of a water race only after written permission has been received from the Council's Water race overseer. Permission to plant trees and shrubs applies only to those outlined in the application and not for any subsequent planting not mentioned except for the replacement of dead plants.

The applicant and subsequent owners are responsible for ensuring that all applicable Acts, Regional and District Plans and Bylaws are followed when planting trees and shrubs (for example if planting near power wires).

All applications to plant trees or shrubs alongside stock water races must be made in writing on the appropriate form Application Form to the Carterton District Council's Water Race overseer. This can be downloaded from the Council's website or obtained from any of the Council's Service Centre in Holloway Street.

A written response will be made by the Council to the application within 10 working days setting out the conditions to be met if the application is granted.

A copy of the application and Council reply will be put on the applicant's property file for future reference. The appropriate manager will also be advised of the application and decision reached.



### **9.5 The particular species of trees or shrubs shall be stated on the application.**

Species such as pinus radiata, poplar and willow will not be permitted. The Council reserves the right to prohibit other tree species if they are determined to be an issue if planted alongside water races.

Trees and shrubs can only be planted on the opposite side of the race from which it is maintained, where practicable.

The lateral (side) growth is to be maintained in the shape of a trimmed hedge so as not to encroach on the water race. The purpose of this requirement is to allow for race maintenance.

All tree trimmings in the vicinity of the race are to be moved sufficient distance away to avoid wind-blown material entering the race. Any loose tree material in the race is to be removed. This is to be done immediately following trimming.

Any dead or loose material entering the race from the trees as a result of adverse weather such as north-west gales is also to be removed.

Carterton District Council shall be advised before any planting or tree maintenance work is carried out so as to avoid any conflict with water race operations.

Please note that the Carterton District Council reserves the right to request the removal of the trees or shrubs if they are found at any time to be a problem with the operation of the water race system.

The Council reserves the right to withdraw permission for the planting of trees and shrubs if it is found that any of the clauses in Section 9.4 of this guideline have not been complied with.

### **9.6 Links to other documents and community outcomes**

This guideline links to the Carterton Water Race Bylaw, the Code of Practice/Strategy, and the Community Outcome that there is sufficient water to meet the needs of communities and ecosystems.

### **9.7 Review**

The review of this planting strategy will be aligned with the Water Race Bylaw review programme.

## 10. Acceptable Trees and Shrubs Alongside Stock water Races

### **Akiraho (*Olearia paniculata*)**

Two years old, 1.6 metres. From the daisy family, this very hardy shrub to small tree grows up to six metres tall, can stand light soils and is found along forest margins and in scrub. Akiraho is mostly a coastal and lowland plant that likes open sunlight and is frost hardy when mature

### **Harakeke, swamp flax (*Phormium tenax*)**

Two and a half year old, 2 metres. Flax is tough, likes open sunlight, and grows best in alluvial soils although it grows well in lowland swamps and dry hillsides.

### **Karamu (*Coprosma robusta*)**

Two and a half years old, 2 metres. This shrub or small tree with leathery leaves grows up to six metres tall and is found throughout NZ in lowland forests.

### **Kohuhu (*Pittosporum tenuifolium*)**

Two and a half years old, 1.5m. A coastal to lower mountain forest tree up to eight metres tall. Found all over the country except in the west of the South Island.

### **Makomako, wineberry (*Aristotelia serrata*)**

Five years old, 2 metres. A very common, fast growing semi-deciduous small tree up to ten metres tall found throughout NZ in forests and scrubland, along forest margins and roadsides.

### **Manatu, lowland ribbonwood (*Plagianthus regius*)**

Five years old, 3 metres. A common lowland forest tree up to 15 metres tall that, unusually, is regularly leafless in winter.

### **Manuka (*Leptospermum scoparium*)**

Five years old, 2.5 metres. Manuka is found mostly in open habitats throughout NZ. It is a fast growing reasonably frost hardy shrub, up to 4 metres tall, that establishes well in disturbed land.

### **Ngaio (*Myoporum laetum*)**

Five years old, 2 metres. A leafy tree up to ten metres high whose spreading branches shade out understorey vegetation. Ngaio likes open sunlight and is frost hardy when mature but can recover from light frosts when young.

### **Toetoe – spring flowering (*Cortaderia fulvida*)**

Five years old, 2 metres. This native grass, which is actually a type of sedge, is tough and likes open sunlight.

### **Ti kouka, cabbage tree (*Cordyline australis*)**

18 months old, 1.6 metres. An icon NZ tree that reaches up to 20 metres tall, ti kouka grows along edges of forests and swamps and along river banks.

### **Horoeaka, lancewood (*Pseudopanax crassifolius*)**

Five years old, > 5 metres. Round headed tree up to 15 metres tall, found in forest and shrubland throughout NZ from sea level to 760m.

### **Kawakawa, pepper tree (*Macropiper excelsum*)**

Three years old, 1 metre. A small densely- branched aromatic tree or shrub up to six metres high that grows in shady sheltered areas throughout NZ.

### **Koromiko (*Hebe stricta*)**

Five years old, 2 metres. There are over 100 species in the hebe genus in NZ. Most grow in open habitats, but some, like the koromiko, are common in shrubland and forest margins, making them a good riparian plant.

### **Kowhai (*Sophora microphvlla*)**

## 11. Prohibited Trees and Shrubs Alongside Stock water Races

Pinus radiata  
Poplar  
Willow

## 12. Fencing

- Single wire for cattle – can be using standards or posts and permanent wire or pig tails and ‘hot wire’.
- Fence and alignment to be capable of upgrading if sheep exclusion required.
- Minimum of 0.5m to maximum of 1.0m away from edge of channel on the side that will be accessed by an excavator for cleaning.
- Any planting to be on the northern or uphill side of the channel wherever possible – this maximises the shading and filtering potential of the planting.
- Planting to consist of small native shrubs, trees and flaxes (refer section 10). **Avoid** any planting that has a high water uptake capability such as poplars (refer section 11).
- If planting both sides of the channel, then the property owner will be responsible for all cleaning costs and the recommendation would be that space is allowed for a small excavator to travel along one edge of the planting for cleaning – specific approval is required from Council & the Water Race overseer for this.
- Gates shall be provided where any fence crosses a water race for ease of access by Council for cleaning and inspection purposes.
- Re-entrant sections of fence for stock drinking purposes are permitted and encouraged. Discuss with the water race overseer for best practice guidance at the time.
- Where there is a requirement or need to re-align a section of the water race to optimise the availability of a paddock and at the same time make fencing a more effective and efficient outcome, the Council’s water race overseer must be involved from the beginning.

Please contact the water race overseer for any matter associated with the maintenance and operation of the water race including any comments or ideas on how Council can better use and enhance this facility including the provision or a better environmental outcome for the district.