

**Te Whanau Hou
Caring for the Grovetown Lagoon
A Community Management Plan**



February 2003

TABLE OF CONTENTS

1. Report Summary	1
2. Grovetown Lagoon Working Group	2
3. Background to the Management Plan.....	2
4. Physical Description	4
4.1 Map of Wairau Plain Showing the Extent of Swamp Vegetation Pre 1850 (From Budge, Proposed Settlement Survey)	5
4.2 Historic Features of River Control	6
4.3 Grovetown Lagoon and Catchment Map - The Extent of the Project Area	7
5. Vision Statement	8
6. The Management Plan	9
Issues, Objectives, Recommendations and Methods	9
Issues 9	
6.1 Issue 1 Community Ownership and Participation	9
6.1.1 Objective:	9
6.1.2 Recommendations:	9
6.1.3 Methods:	10
6.2 Issue 2 Water Quality	10
6.2.1 Objective:	10
6.2.2 Recommendations:	11
6.2.3 Methods:	11
6.3 Issue 3 Water Flow and Water Levels.....	12
6.3.1 Objectives:	12
6.3.2 Recommendations:	12
6.3.3 Methods:	12
6.4 Issue 4 Air Quality	13
6.4.1 Objectives:	13
6.4.2 Recommendation:	13
6.4.3 Methods:	13
6.5 Issue 5 Pest Management.....	14
6.5.1 Objectives:	14
6.5.2 Recommendations:	14
6.5.3 Methods:	14
6.6 Issue 6 Ecology	15
6.6.1 Objectives:	15
6.6.2 Recommendations:	15
6.6.3 Methods:	16
6.7 Issue 7 Wetlands	16
6.7.1 Objectives:	16
6.7.2 Recommendations:	17
6.7.3 Methods:	17
6.8 Issue 8 Landscape Management.....	17
6.8.1 Objectives:	17
6.8.2 Recommendations:	18
6.8.3 Methods:	18
6.9 Issue 9 Users - (Traditional and Cultural Purposes, Access and Recreation).....	18
6.9.1 Objectives:	18
6.9.2 Recommendations:	18

6.9.3 Methods:	19
7. Monitoring, Reporting and Review of Management Plan.....	19
Recommendations:.....	19
8. Resources	19
9. Other Users and Interested Groups	20
9.1 Nelson Marlborough Fish and Game Council.....	20
9.1.1 Fish and Game Interests in the Grovetown Lagoon	20
9.1.2 The Sports Fish Resource.....	20
9.1.3 The Game Bird Resource.....	20
9.1.4 Waterfowl Hunting History.....	21
9.1.5 The Waterfowl Season	21
9.1.6 Waterfowl Hunting and Maimais.....	21
9.1.7 Issues.....	21
9.2 Wairau Rowing Club.....	22
10. Flora and Fauna of the Lagoon.....	22
10.1 Aquatic and Riparian Vegetation	22
10.2 Fish Populations.....	23
10.3 Bird Species.....	23
Appendix 1	24
Origin of the Grovetown Lagoon as Part of the Wairau River Channel	24
Stopbanking of Grovetown Lagoon from the Wairau River and Flow from the Lagoon to the River.....	24
Flooding into the Grovetown Lagoon Catchment from Other Sources and Remedial Stopbanking to Prevent Flooding	26
Watercourses and Drainage Channels into the Grovetown Lagoon.....	26
Weed Establishment in the Grovetown Lagoon.....	27
Appendix 2	28
Code of Practice for Hunting the Grovetown Lagoons, and for Maimai Standards	28
Appendix 3	29
Flora and Fauna List.....	29
Appendix 4	30
References.....	30
Appendix 5	31
Links with Other Marlborough District Council Projects	31
Appendix 6	32
Interested Parties	32

1. Report Summary

The Grovetown Lagoon Project presents a unique opportunity for the Marlborough community, to come together and bring about positive environmental change, such as enhanced ecology, and improved water quality and landscape. The project also has the potential to demonstrate that successful outcomes for the Grovetown Lagoon can lead to successful outcomes elsewhere in Marlborough.

As can be seen from the details provided in this Management Plan, about the history of managing the Grovetown Lagoon area, there has been significant human intervention with natural process to bring the lagoon to its present state.

There is a clear distinction between reinstating a system to its original natural state and carrying out work to restore the potential benefits of natural processes, and it is this second course of action that is intended for the lagoon.

At a practical level, the reinstatement of the lagoon is both undesirable and unachievable. This is because certain inherent natural processes, such as seasonal flooding and associated silting, would reduce the lagoon to a wetland state, through its isolation and progressive silt loading. Also, the amount of spring and groundwater supply, available to recharge the lagoon, has been irrevocably altered by the taking of groundwater for rural purposes.

This Project acknowledges the value of the lagoon and its catchment waterways as a natural asset, with significant potential to add to the wealth of Marlborough's natural systems and to provide a direct benefit to the Marlborough community.

This project is concerned about maximising the potential of the natural systems offered by the lagoon's current environment to achieve the objectives of the Project's Vision Statement.

2. Grovetown Lagoon Working Group

Te Runanga a Rangitane o Wairau
Ngati Rarua
Ngati Toarangatira
Department of Conservation
Nelson Marlborough Fish and Game Council
Marlborough District Council
NZ Landcare Trust
Grovetown Community

3. Background to the Management Plan

A project aimed at restoring and enhancing the Grovetown Lagoon was launched on Saturday 2 February 2002 with a tree planting ceremony at the lagoon to observe World Wetland Day.

The project is a combined effort between the mana whenua, the Marlborough District Council, the Department of Conservation, the Nelson Marlborough Fish and Game Council, the Grovetown community, and NZ Landcare Trust. The project has for some time been the vision of Te Runanga A Rangitane O Wairau, Ngati Rarua and Ngati Toarangatira.

The lagoon is a relatively recent oxbow lagoon (refer to Section 6 for the history of the lagoon formation) but represents the last significant component of a freshwater wetland that once covered the lower Wairau Plain. Long-term misuse and neglect has resulted in its present degraded state. Steps taken to improve the water quality and ecological values of the lagoon will result in a place where there will be improved habitat for fish and birds, and where people can fish and swim once again.

Historically the lagoon, adjoining wetland and waterways were considered a mahinga kai (food resource) by Rangitane and Ngati Rarua and as such these were highly valued for the abundance of freshwater foods and resources such as inanga, tuna, patiki, wata-kirihi.

The western boundary of the lagoon is considered wahi tapu (sacred) being the location of the main tribal Urupa in this region for Rangitane, Ngati Rarua and Ngati Toa Rangitira.

Much of the lagoon land is now in private ownership with the exception of two parcels of land at the entranceway to the lagoon. One section referred to as Maori

Commonage G is jointly owned by Rangitane, Ngati Rarua and Ngati Toa Rangitira. The other adjoining section known as the Grovetown Domain is owned by the Crown and currently administered by the Department of Conservation.

These two blocks originated as a result of a build up of accretion land in the early 1900's. Following a number of hearings in the 1920's the Courts ruled that 5 acres (Maori commonage G) would be allocated to the three iwi and the remaining two acres (Grovetown Domain) to the Crown which is currently administered by the Department of Conservation.

Concerned at the continued deteriorating state of the area particularly the water quality, aesthetic condition and the decline in habitat for freshwater fish species, Rangitane and Ngati Rarua decided in 2001 to develop a joint working strategy aimed at improving the situation.

Toward the end of 2001 the two iwi approached the Marlborough District Council for support to improve the status of the lagoon and wetlands.

After a number of initial hui between the iwi and Council staff it was decided to seek participation and involvement from the wider community and statutory agencies like Department of Conservation, Fish and Game. From these preliminary hui a project work group was established to discuss and develop a plan for the restoration of the lagoon.

The work group chose Saturday 2nd February 2002 to acknowledge World Wetland Day and to officially launch the project with a dawn tree planting ceremony, which was attended by Rangitane, Ngati Rarua, Ngati Toa iwi members, residents of Rarangi, Spring Creek, Grovetown and Blenheim, Grovetown Rowing Club, Marlborough District Council Councillors and staff, the local member of Parliament Dr Lynda Scott, Ian Ewan Street, Forest and Bird Society, and the Department of Conservation. It is intended to measure the progress of the project on World Wetland Day 2003.

Following the World Wetland Day ceremony, and receipt of expressions of interest and support from various groups and individuals, the next stage was to develop this community management plan, and then to implement the recommendations of the plan for achieving the project vision. The project seeks to improve the water quality and ecological values of the lagoon in an effort to contribute toward improved habitat for fish and birds that the entire community can enjoy.

4. Physical Description

The Grovetown Lagoon and catchment area as we know it today have been formed by a mixture of natural and man made effects over the last 150 years. This history of their physical formation is detailed in the **Appendix 1**.

The maps that follow illustrate the major changes from the time of European settlement until today. Map 4.3 is an aerial photograph of the lagoon catchment as it is today.

In 1850 the lagoon was part of the Wairau River. Floods cut through the neck of this severe meander channel in the 1860s to leave this ox bow (now known as Grovetown Lagoon). In the 1900s stopbanks were built that completely cut off the lagoon from the new river channel, and so reduced the previous very regular flooding and sedimentation from the Wairau River. It was not till the 1990s that the stopbanking work was improved to virtually eliminate flooding from the area

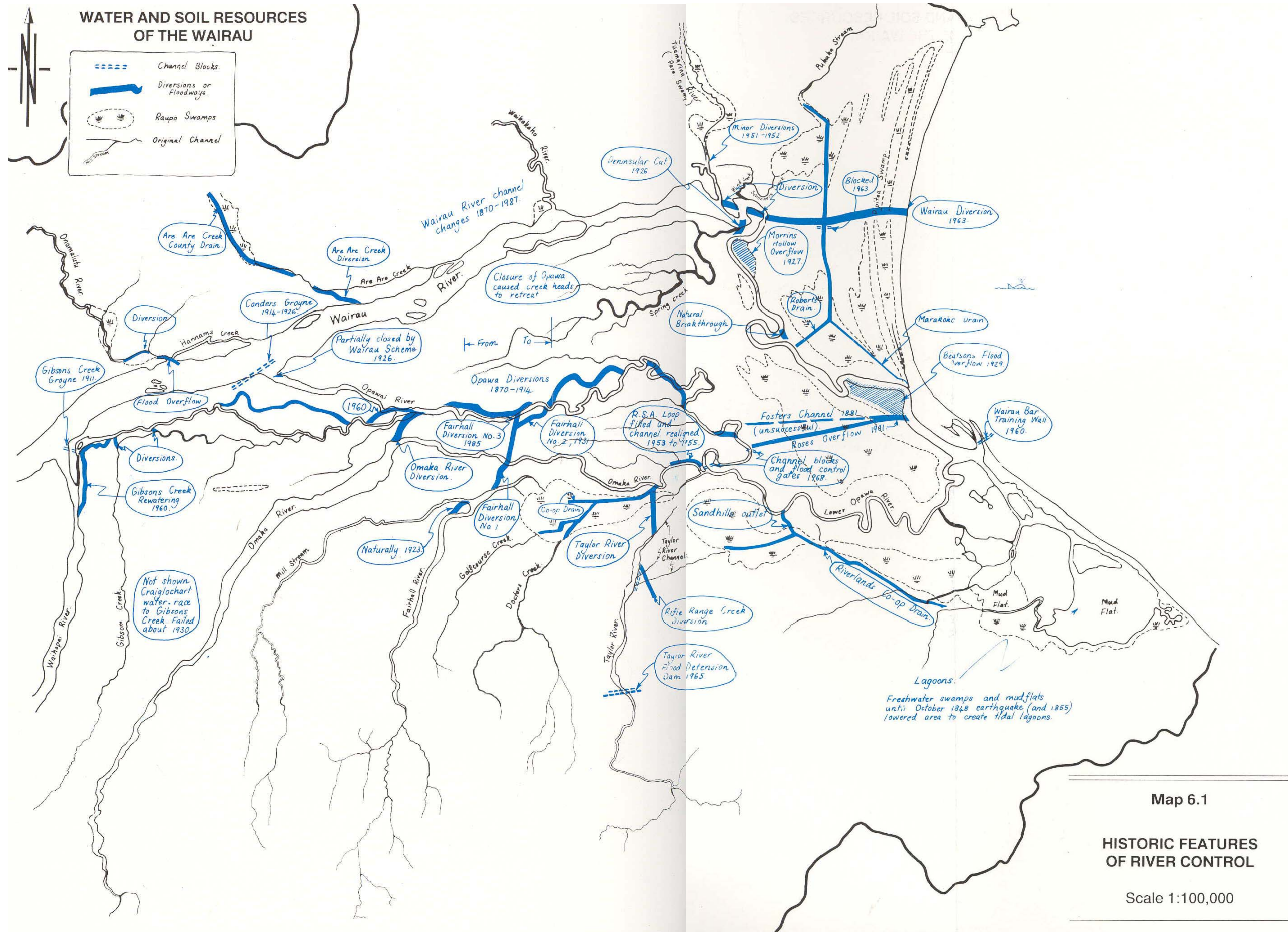
The 1850 map (map 4.1 taken from Budge's proposed settlement survey) shows that a lot of the area was once raupo and flax swamp. Over the period from 1850 to 1975 many watercourses were cut to drain the swamps and surrounding land. These man made watercourses are now referred to as Drain A, Drain N etc, and make up the present network of 34 kilometres of channels feeding into the lagoon. This system of drainage channels carries water to the sea via the Grovetown Lagoon and the Wairau River, whereas in 1850 there was only one small creek feeding into Grovetown Lagoon.

Over the last 100 years the lagoon and the watercourses draining the 1200 hectares to the west have been managed to enable the land to be productive farmland. Previously much of this area was wetland that provided habitat for fish and birds.

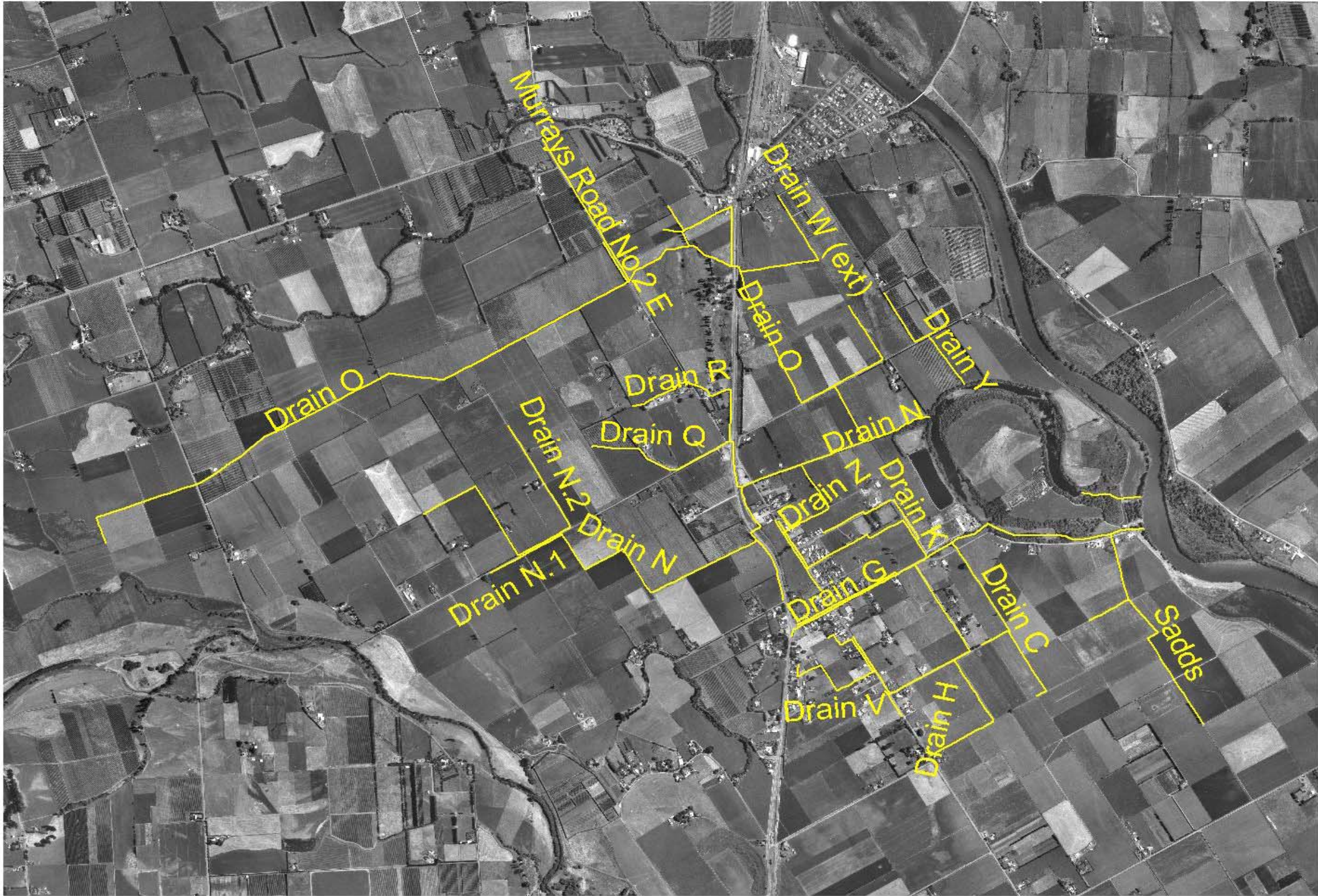
4.1 Map of Wairau Plain Showing the Extent of Swamp Vegetation Pre 1850 (From Budge, Proposed Settlement Survey)



4.2 Historic Features of River Control



4.3 Grovetown Lagoon and Catchment Map - The Extent of the Project Area



5. Vision Statement

The restoration of the Grovetown Lagoon to enhance the habitat for fish and bird life, and to enable gathering of food and encourage recreational uses.

Rangitane and Ngati Rarua have formed a co-operative partnership with the Grovetown community and other interested people and groups to work together to achieve an eventual outcome that will:

- make the lagoon safe, clean and friendly;
- improve the water quality;
- be visually pleasant;
- provide habitat and enhance biodiversity:
- provide a source of food;
- be a place for family recreation;
- celebrate bicultural cooperation

This project proposes to reverse the degradation processes that have occurred, by working to improve the natural environment, with an emphasis on water quality, pest control and landscape management.

Restoration of the lagoon will mean a significant contribution to natural habitat in the Grovetown area, and will be an asset to Marlborough in general, and an addition to dwindling New Zealand wetlands.



6. The Management Plan

Issues, Objectives, Recommendations and Methods

Issues

The Marlborough Regional Policy Statement defines issue as: "A regionally significant issue is a matter of interest or concern to the community that affects some aspect of the natural and physical resources of Marlborough. The extent to which an issue is significant depends on the values held by the community in relation to resources, activities, and the environment."

For the purpose of this project, the following issues have been defined by the community, and the Grovetown Lagoon working group as being significant:

1. Community ownership and participation
2. Water quality
3. Water flow and water levels
4. Air Quality
5. Weed and pest management
6. Ecology
7. Wetlands
8. Landscape management
9. Users - traditional and cultural purposes, access and recreation

These issues are addressed in the following sections. Objectives are defined and recommendations and methods for achieving the objectives are set out.

6.1 Issue 1 Community Ownership and Participation

The project has been set up in response to concerns expressed by some of the local iwi, individual people and various groups and organisations. Some of the iwi have initiated a co-operative partnership with the Grovetown community along with other interested parties and groups. The long-term project aims at restoring the lagoon to a state where the lagoon is safe and clean, the water quality is greatly improved, it is visually pleasant and it provides a source of food and a place for family recreation. To achieve this goal, it is important for the Grovetown community to undertake ownership of the project and to participate fully in the on-going development of the project.

6.1.1 Objective:

To maintain open discussion and keep everyone in the Working Group and the community, informed of progress and achievements.

6.1.2 Recommendations:

- (a) Demonstrate tangible progress to the public.
- (b) Celebrate achievements.
- (c) Recognise community efforts.
- (d) Progressively evaluate and define the form of the Working Group.

- (e) Remove existing rubbish dumped in the area surrounding the lagoon.
- (f) Put up onsite information panels outlining the project, with a map of the area.

6.1.3 Methods:

- (a) Set up a community newsletter and a project website.
- (b) Establish a protocol to recognise community effort and input to the project.
- (c) Erect a pouwhenua when there has been some significant work achieved, and invite the community to share in celebrations to unveil and dedicate the pouwhenua.
- (d) Maintain ongoing contact between the Working Group and the larger group of interested people and other organisations. (Refer to the **Appendix 6** for list).
- (e) Rename ditches and drains with the original name for the waterway, or other appropriate names, and recognise iwi and pioneer settlers with some of these names.
- (f) Put up signs warning that dumping of rubbish is prohibited.
- (g) Seek sponsorship for provision of labour to assist with working bees, provision of machinery and rubbish skips, or funds to assist with hire of gear.
- (h) Involve schools and other educational organisations.

6.2 Issue 2 Water Quality



The quality of fresh water must be safeguarded for its life supporting capacity. Water quality is of prime importance to Maori, to the sustainable management of the natural environment and to the values of the community. The water quality of the Grovetown Lagoon has been degraded to a level that no longer sustains the former natural ecology of the lagoon. It is desirable to ensure that the mauri of the lagoon is restored, and that it is enhanced and managed to meet the expectations of all members of the community.

6.2.1 Objective:

To enhance and maintain the water quality of the lagoon and contributing waterways to enable:

- Restoration of the mauri of the lagoon

- Cultural integrity
- Contact water recreation
- Enhanced biodiversity
- Food gathering

6.2.2 Recommendations:

- (a) Investigate improvements to the performance of domestic wastewater disposal systems in Grovetown and alternative methods of sewage treatment and disposal.
- (b) Establish a water quality benchmark.
- (c) Reduce the input of faecal matter from stock and farmland.
- (d) Reduce the input of sediment from adjacent land.
- (e) Reduce the input of nutrients to the lagoon.
- (f) Monitor the water quality of waterways to the lagoon.
- (g) Monitor habitat indicators of water quality.
- (h) Monitor the Maori indicators of water quality (as defined by the manawhenua iwi).
- (i) Manage the streams according to environmental, cultural, amenity or drainage values.

6.2.3 Methods:

- (a) Investigate the present efficiency of sewage disposal trenches or systems in Grovetown.
- (b) Investigate costs for sewage reticulation and treatment for Grovetown.
- (c) Work with the rural community to establish riparian management of the waterways in the lagoon catchment.
- (d) Encourage and assist with fencing and riparian planting of the waterways in the lagoon catchment.
- (e) Establish a water quality and macro-invertebrate site network for monitoring purposes.
- (f) Carry out baseline monitoring at an early stage to establish current water quality values.
- (g) Continue to monitor water quality as the restoration project proceeds.

6.3 Issue 3 Water Flow and Water Levels



The ecology of a flowing waterway is basically dependent upon the water flows and the form of the channel and banks.

6.3.1 Objectives:

To ensure that the objectives of the plan are supported by the management of water flows and water levels in the lagoon.

To try and restore a tidal influence that is natural to the lagoon, but not an extreme influence.

6.3.2 Recommendations:

- (a) Undertake an assessment of the present method for floodgate operations (opening and closing).
- (b) Maintain and manage water levels in the lagoon for the support of the aquatic ecosystem, while ensuring that adjacent farmland is adequately drained and dwelling sites are not inundated.
- (c) The Grovetown Lagoon Working Group will give a strong signal that water flow into the lagoon is an issue of concern, and will address minimum flow requirements.
- (d) Where land is being modified for cultivation, cropping, grape growing etc, landowners should be encouraged to plant stream margins.

6.3.3 Methods:

- (a) Investigations about the use of floodgates of a type (or modification of the existing gates) that will enable a natural flow regime in tune with the Wairau River flow and tidal movements, and result in natural flow of water through the lagoon (controllable floodgates).
- (b) Investigate the possibility of larger, or an increased number of culverts from the lagoon to the Wairau River.
- (c) Establish minimum flows for waterways to the lagoon.
- (d) Establish trigger levels for opening and closing culvert floodgates.
- (e) Investigate further the management of water levels.
- (f) Investigate the effects of water takes from the lagoon, springs and drains in the catchment area.

- (g) Satisfy landowners that land will continue to be adequately drained.
- (h) Work with the Marlborough District Council to prepare ditch, stream and drain management programmes.
- (i) Encourage the set up of Landcare Groups with farmers and land users.
- (j) Encourage shade planting and minimise drain and ditch diggings to remove plants and sediment.
- (k) Instigate a riparian management strategy for the lagoon and the catchment waterways.
- (l) Initiate discussions with land users and organisations including farmers, Montana, and the Grape Growers Association, relating to riparian management.

6.4 Issue 4 Air Quality



Clean air is a resource to be managed in terms of health, aesthetics and amenity. Degraded air affects human health, the amenity value of a place and the functioning of ecosystems. Air quality is important to the sustainable management of the lagoon in the context of aesthetics and amenity.

Odour, possibly more than any other air contaminant, directly affects the amenity values of an area - the qualities and characteristics that contribute to people's appreciation of the area. Adverse effects occur when odours are perceived to be of such character, intensity, frequency or duration that cause annoyance, offence or ill health.

6.4.1 Objectives:

To maintain and enhance the quality of the air resource in the vicinity of the lagoon.

To enhance the amenity values of the Grovetown Lagoon area.

6.4.2 Recommendation:

Identify sources of odour.

6.4.3 Methods:

- (a) Work with the Marlborough District Council, other agencies and affected parties to achieve an acceptable outcome for air quality and odour effects.

- (b) Establish an effective odour monitoring programme with appropriate follow up procedures.

6.5 Issue 5 Pest Management



Animal and plant pests can damage the integrity of the indigenous ecosystem by destroying and competing with resident species. Plant pests such as oxygen weed, Old Man's Beard and crack willow, smother and invade the space of preferred plants in the water and on land. Animal pests including possums, wasps and rats destroy the habitat and food supply of native birds.

6.5.1 Objectives:

- (a) To identify key plant and animal pests affecting the ecological values of the lagoon and adjoining wetlands.
- (b) To control or eradicate plant pests, and replace with appropriate species, that will provide habitat and food for birds, shading of the lagoon, and will increase the natural biodiversity of the area.
- (c) To control or eradicate, by appropriate means, the prolific growth of oxygen weeds in the lagoon and waterways to the lagoon.

6.5.2 Recommendations:

- (a) Establish a pest management strategy and identify and target plant and animal pests for eradication or management.
- (b) Prepare maps identifying streams and the existing distribution of plants.
- (c) Undertake selective tree removal of species such as crack willow.
- (d) Undertake weed removal, to enable access to the lagoon for recreational purposes.
- (e) Seek the best professional advice for appropriate weed management, and continue to explore methods of control.
- (f) Carry out an animal pest control strategy for ferrets, rats and cats etc.

6.5.3 Methods:

- (a) Carry out a survey of existing animal and plant pests.
- (b) Instigate a programme of weed and pest plant removal, with emphasis on old man's beard, crack willow and the dominant lagoon oxygen weed species (Lagarosiphon and Egeria).

- (c) Work with the Marlborough District Council to implement the pest management strategy, and establish a pest management programme.
- (d) Fence or use other means to protect trees as they are planted.
- (e) Continue to maintain areas of new planting and keep up with the weed control.

6.6 Issue 6 Ecology



Rivers, streams, waterbodies, wetlands and their margins have many ecological values such as habitats, physical systems, recreational resources and amenity values. Use of water resources may affect these values.

The Grovetown Lagoon is classified in the Wairau Awatere Resource Management Plan Volume Two (Appendix A) as having a high value within the Marlborough District. Important values include the presence of native bird and fish species.

6.6.1 Objectives:

- (a) To manage the lagoon to progressively enhance its natural values.
- (b) To enable the passage of fish and other species through all tidal cycles.
- (c) To provide habitat in associated streams for native fish species, and provide for spawning and migration.
- (d) To provide waterfowl habitat.
- (e) To bring back the “dawn chorus” to the Grovetown Lagoon area.
- (f) To restore the natural habitat of the lagoon with the emphasis on endemic flora.

6.6.2 Recommendations:

- (a) Encourage the return of native birds to the lagoon area.
- (b) Supplement the food supply of other birds (seed and nectar feeding etc).
- (c) Endeavour to maintain streams, ditches and drains to the lagoon so that habitat is suitable for native fish to mature.
- (d) Achieve recognition of the Grovetown Lagoon as an area of ecological significance.

- (e) Create a native habitat by planting appropriate native trees and shrubs, and developing the area in keeping with a natural outlook.

6.6.3 Methods:

- (a) Selectively remove undesirable trees and plants that have taken over and now dominate the landscape
- (b) Plant and maintain native tree species suitable to the area. Some tree species other than natives will provide for nectar feeding birds.
- (c) Prepare maps from data collected by ecological surveys, and from existing information such as the Department of Conservation PNA survey reports.
- (d) Refer to the ecological information provided in the Department of Conservation PNA report.
- (e) Establish larger plantings on the northern banks of waterways, and plantings of flaxes, grasses and reeds etc along both banks where suitable, to overhang and provide for up to full stream coverage.

6.7 Issue 7 Wetlands



In a national context the Marlborough District is better known for its dry sunny climate than as a centre of wetlands. Very large wetlands were once found in the lowland areas, particularly around Blenheim, but they have now been almost all eliminated by drainage (Map 4.2).

Today less than 10% of New Zealand's original wetlands remain, yet they are home for 22% of our bird species and 30% of our native fish species.

Currently the Grovetown Lagoon does not support a diverse fish community. A survey carried out in 1999 recorded only 7 species of fish, with the common bully, shortfinned eel and inanga being the most common species.

The Grovetown Lagoon is classed as a wetland (an old oxbow loop of the Wairau River) and is fed by streams, creeks and ditches that were once part of the extensive wetland of the Wairau Plain. Some remnant of a spring fed swamp lies to the north of the lagoon, and drains to the lagoon.

6.7.1 Objectives:

- (a) To identify, enhance and protect wetlands wherever they may occur in the Grovetown Lagoon catchment area.

- (b) To encourage the long-term ownership and protection of the wetland area to the northeast and adjoining the Grovetown Lagoon.
- (c) To encourage the establishment and protection of private wetland on farmland.

6.7.2 Recommendations:

- (a) Restore the wetland areas identified by the Department of Conservation as inanga habitat.
- (b) Exclude cattle from wetland areas to reduce pugging.
- (c) Fence where feasible, to provide protection of wetland margins.

6.7.3 Methods:

- (a) Instigate negotiations for purchase of areas of adjacent wetland.
- (b) Identify road reserves, riparian reserves and the Queens Chain and undertake fencing.
- (c) Meet with landowners and other groups such as Federated Farmers and the Grape Growers Association, to discuss and raise awareness of the importance of wetlands and encourage development and protection of wetlands.

6.8 Issue 8 Landscape Management



The wellbeing of the community is linked to the quality of the landscape. Outstanding landscape features need to be retained without degradation from the effects of land and water based activities, for the enjoyment of the community and visitors.

The natural landscape values of the Grovetown Lagoon need to be recognised, protected, developed and enhanced in keeping with the former natural environment.

6.8.1 Objectives:

- (a) To develop a landscape management plan for the Grovetown Lagoon.
- (b) To integrate the Grovetown Lagoon landscape management into the overall landscape management plan for the Wairau Plain.

6.8.2 Recommendations:

Develop good working relationships with local landowners, including owners of small sections, farmers, grape growers and commercial sites.

6.8.3 Methods:

- (a) Encourage land users to look at riparian planting as a part of the property/operations development.
- (b) Identify waterways and suggest typical plants that are suitable for planting alongside these.
- (c) Provide a list of plants suitable for streamside planting.
- (d) Make Department of Conservation publications available to landowners and users.
- (e) Draw up a concept landscape plan for the lagoon and surrounding wetland area.

6.9 Issue 9 Users - (Traditional and Cultural Purposes, Access and Recreation)



Tangata whenua are kaitiaki of their natural resources. As such they have responsibility to ensure that the mauri of these resources is protected.

The Resource Management Act 1991 requires as a “Matter of National Importance” that access to and along the coast, lakes, rivers be maintained and enhanced.

6.9.1 Objectives:

- (a) To provide for traditional food gathering.
- (b) To recognise the spiritual values of the area - to recognise the urupa.
- (c) To provide access to the lagoon to encourage recreational use.
- (d) To develop a walkway around the lagoon perimeter.
- (e) To develop appropriate legal tools (e.g. setting up a Trust) to assist in achieving the objectives for the Grovetown Lagoon project.

6.9.2 Recommendations:

- (a) Investigate what road improvements around the lagoon may be planned and carried out.
- (b) Investigate the status of road reserve land.

- (c) Provide access for canoeing and fishing.
- (d) Provide for foot access and, where appropriate, disabled access around the lagoon.
- (e) Provide for carparking.

6.9.3 Methods:

- (a) Erect access signs showing entry to the lagoon and proposed walkway at appropriate sites.
- (b) Landscape the area and include paths and boat ramps suitable for un-powered small craft (such as canoes).
- (c) Discuss with the Marlborough District Council about formulating bylaws, or other means, to provide for car parking, traffic management, roading issues etc.

7. Monitoring, Reporting and Review of Management Plan

The management plan will set out the requirements to manage the lagoon and catchment area to achieve the long-term project vision.

Monitoring will be required to ensure that the plan's objectives are met, or that there is satisfactory progress towards achieving these.

Recommendations:

- (a) That a programme of regular water quality monitoring is set up and carried out for the lagoon and associated waterways.
- (b) That records of water flows into and out of the lagoon are kept and the information used to establish a suitable water flow and level regime to assist in maintaining the lagoon in its desired state.
- (c) That surveys to assess the pattern of plant growth in the lagoon and associated waterways, and of macroinvertebrates and fish are carried out.
- (d) That the riparian vegetation is mapped and checked at regular intervals.
- (e) That land use and changes to this in the catchment area are surveyed and recorded.
- (f) That the management plan is reviewed annually and progress recorded, and, the information is used to update the project timeline.

8. Resources

The Grovetown Lagoon Project is inevitably based upon goodwill. It is entirely dependent upon the combined contribution of a wide range of resources, both humans and financial. As any community project, much will be achieved by voluntary contribution.

What follows is a general summary of Project resources, which includes, but is not limited to:

A Project Leadership

Tanga whenua iwi

B Affiliated Agencies and Organisations

Department of Conservation

New Zealand Landcare Trust

Nelson/Marlborough Fish & Game Council

Marlborough District Council

C Human Resources (Refer also to Appendix 6)

The Grovetown community

The local rural community

The wider Marlborough community

D Other Organisations

Wairau Rowing club

Grovetown School

A. E. Sadd Limited

E Science and Information

Consultant services, e.g. NIWA and the Cawthron Institute

F Financial

Fundraising opportunities

In-kind input from affiliated agencies and other organizations

Voluntary labour from the tangata whena and the community

9. Other Users and Interested Groups

9.1 Nelson Marlborough Fish and Game Council

9.1.1 Fish and Game Interests in the Grovetown Lagoon

The Nelson Marlborough Fish and Game Council is the Statutory Manager of freshwater sports fish and game birds as defined under the Conservation Act 1987.

9.1.2 The Sports Fish Resource

Brown trout occur in the lagoon but current water quality, aquatic weeds, willow cover and general lagoon health restrict both the abundance and angling opportunities. The lagoon is currently regarded as a minor trout fishery.

9.1.3 The Game Bird Resource

The Grovetown Lagoon is known to be frequented by the following game birds; Mallard duck, Grey duck, Paradise Shelduck, Shoveler duck, Pukeko, Black swan and Canada goose. Californian quail and pheasant occur in low numbers around the margins. The lagoon is a regionally important habitat for waterfowl that use the area for breeding, feeding and roosting. The area is probably the most popular and intensively shot for duck in the Nelson Marlborough region over

the Opening Weekend. Duck hunting maimais occur at 90 metre intervals virtually all the way around the waterway.

9.1.4 Waterfowl Hunting History

Waterfowl hunting has occurred in the Grovetown area since early European colonisation of the Marlborough region. The predominate duck hunted back then was the Grey and it was highly valued as a food resource in a land largely devoid of mammals. Marlborough Acclimatisation Society records show the lagoon area as being a popular hunting area and ongoing involvement of both the Society and Fish and Game in habitat enhancement work. Many of the existing plantings, both exotic and native, are recorded as having been planted by staff or hunters. The Marlborough Acclimatisation Society was first formed in 1873 and the first chairman was his Honour Mr A.P. Seymour.

9.1.5 The Waterfowl Season

The Waterfowl Season starts on the first weekend in May and currently runs through to the end of July. As a general rule opening weekend is the busiest with approximately 80% of hunters shooting only that weekend. Other hunters shoot right through the season as weather and bird numbers dictate. Winter is a time of low public use of the lagoon and the predominant user is the waterfowl hunter. Few conflicts of interest have been recorded in past years.

9.1.6 Waterfowl Hunting and Maimais

Waterfowl hunting is a legal activity which is controlled and permitted under a number of acts and regulations, including the Arms, Conservation, Wildlife, and Reserves Acts as well as the Fish and Game annual Game Regulations. In the first instance enquiries should be directed to the local office of Nelson Marlborough Fish and Game. Maimais are a permitted structure and allowed for in a general rule in the Proposed Wairau/Awatere Resource Management Plan. Fish and Game Regulations govern the claiming and location of maimais and a code of practice is promoted for maimais and hunting.

9.1.7 Issues

- Some of the maimais do not comply with the code of practice (**Appendix 2**). This is largely an historical thing and hunter education will be undertaken to improve this situation.
- Information signs at the lagoon for the public and waterfowl hunters need to be upgraded.
- A number of hunters have expressed interest in assisting with the Grovetown project.
- Care needs to be taken to ensure that increased public usage of the Grovetown Lagoon does not adversely affect the waterfowl values of this area.
- Fish and Game require to be consulted prior to the removal of any willows or maimais that are often associated with these.

9.2 Wairau Rowing Club

The Wairau Rowing Club was established on the banks of the Wairau River in 1910. The Grovetown Lagoon bounds the clubhouse to the west and in the early 1900s this stretch of water was regularly used for rowing.

The club has been an integral part of Marlborough generally, and more particularly the Grovetown community, for many years, with its new membership base coming primarily from the Marlborough Girls' and Boys' Colleges. Encouraging and supporting young people to be involved is one of the prime objectives of the club.

The Wairau Rowing Club has enjoyed a sound administration for many years, which has ably supported development of the membership and the procurement of rowing boats and equipment.

The club has enjoyed outstanding success over many years, at regional and national rowing regattas, and is regularly ranked among the top six rowing clubs in the country. Generations of rowers have performed at the highest levels, and some have progressed to international competition and performed magnificently at World Rowing Championships and the Olympic Games.

The clubhouse location is long regarded as the most attractive position on the lower reaches of the Wairau. The main reasons are easy access to the river, protection from flooding, which is important because of the expensive equipment housed in the clubhouse, and most importantly the sheltered water factor, allowing all weather access for training.

It is the intention of the club to rebuild on the existing site, and to landscape the surrounds, particularly the river frontage for the benefit of club members and the general public. Landscaping will be done as set out in the Grovetown Lagoon project landscape development plan. Car parking is an issue that has been discussed with the Marlborough District Council, and hopefully provisions will be made for improved parking nearby.

Enhancement of the aesthetic appeal and natural beauty of the lagoon, along with improved water quality, is strongly supported by members, and indeed the club sees it as synchronous to improving the overall environment of the area.

10. Flora and Fauna of the Lagoon

See **Appendix 3** for a list of plant and fish species, and some of the bird species associated with the lagoon area. More information is available in the publications listed as references in **Appendix 4**.

10.1 Aquatic and Riparian Vegetation

Riparian vegetation is diverse and extensive, with the main components being crack willow, weeping willow and raupo. Important lower-growing riparian species include tussock sedge, monkey musk rushes and watercress.

Aquatic plants include low numbers of phytoplankton and blue-green algae, egeria, lagarosiphon, pondweeds and starwort. The native pondweed currently exists only in small remnant patches and is seen to be under threat from the presence of egeria. Egeria now forms the dominant submerged aquatic species covering most of the lagoon surface.

The rare swamp nettle (*Urtica linearifolia*) is a threatened species existing in a small area at the lagoon. Also rare is the swamp buttercup.

Care needs to be taken to ensure that these plants are not damaged or destroyed during willow removal or other work and development at the lagoon.

10.2 Fish Populations

Fish populations were sampled by the Department of Conservation on 21/22 August 1997 and more recently on 20 January 1999 by NIWA. (**Appendix 3**)

The NIWA report describes the northern part of the lagoon as having the higher quality fish habitat. The poorer habitat in the southern portion is attributed to the nutrient rich water inflows from the waterways and excessive egeria growth.

10.3 Bird Species

The only record of birds found in the lagoon and surrounding riparian area is from observations made by the Department of Conservation during the fish survey in August 1997. (**Appendix 3**)

Appendix 1

(Provided by Peter A Thomson)

Origin of the Grovetown Lagoon as Part of the Wairau River Channel

- 1843 Initial (European) surveys by J Barnicoat and T Thompson showed the now Grovetown Lagoon was a large loop of the Wairau River channel. "Maori Island" was joined to Wairau Pa by a narrow neck of land.
- 1847 W Budge carried out a survey of the river, setting out a road reserve along its western bank.
- 1857 A wharf was established at the eastern end of Fell Street for a paddle steamer that regularly plied to and from Nelson, via Picton.
- 1861 A flood cut through the neck of the river loop, thus creating two channels and an island.
- 1868 A large flood established this cut as the new main Wairau River channel, and the old loop became a secondary channel.
- 1868-1905 The "old river" channel still carried occasional flows, but progressively less as its inlet and the outlet silted up from sediment-laden Wairau floodwaters and it became an *oxbow lake*.
- 1900 Survey plans show that the southern channel had probably completely silted up, but a small northern channel still existed.
- 1910 The Wairau Rowing Club boatshed was constructed.

Stopbanking of Grovetown Lagoon from the Wairau River and Flow from the Lagoon to the River

- 1895-1907 The stopbanking of the Lower Wairau River in the Spring Creek/Grovetown area by the Spring Creek River Board, which was upgraded following the 1904 flood. The first use was made of the name "Grovetown Lagoon" in 1903, but it was also known as the "old river".
- 1899 A stopbank was built across the outlets to Grovetown Lagoon and culverts were installed, probably with floodgates.
- 1905 A lower 2.4 metre wide culvert was built on the northern outlet, perhaps without a floodgate on it.
- 1907 The stopbanks were raised again.
- 1913 A stronger replacement floodgated culvert was built on the southern outlet, (still the present culvert) - size of culvert: 1.37 x 1.52 metre semi arch culvert with invert level 0.9 m below sea level.

- 1927 The stopbank between the Wairau River and Grovetown Lagoon was raised. The Wairau River Board was now responsible for this work.
- 1935-1940 The Wairau River attacked the true right bank about 1.2 kilometres immediately upstream of the northern outlet. The river eroded the bank and threatened to cut a new path into the Grovetown Lagoon. The existing stopbank was partially destroyed. A new setback stopbank was constructed and the riverbank edge was stabilised by heavy rockwork following the 1939 floods.
- 1944 The Marlborough County Council set up a Grovetown Drainage District, with the main intention of constructing a pumping station for floodwaters from the lagoon, however the station was not proceeded with.
- 1947 The northern culvert was replaced with a floodgated twin 1.22 x 1.52 metre box culvert, with invert level 0.9 metres below sea level (still the present culvert) and the stopbank was raised.
- 1947 The stopbank separating the lagoon from the Wairau River was raised again.
- 1950 A major excavation of both outlet channels occurred, from Grovetown Lagoon to culverts through the stopbank.
- 1952 Requests for improvements to the southern outlet culvert from the lagoon to the river did not proceed.
- 1960 The Wairau River Bar guide bank was built. It prevented the mouth from being partially blocked and ensured that daily low tide conditions occurred throughout the Lower Wairau River.
- 1956 The Marlborough Catchment and Regional Water Board took over responsibility for the maintenance of outlet channels and culverts from the Grovetown Lagoon to the Wairau River.
- 1961 A pumping station was constructed on the southern outlet of the lagoon with a maximum discharge of 2 m³/sec. The gravity culvert was lengthened with a 1.5 metre diameter pipe.
- 1964 The Wairau Diversion was constructed which reduced flood levels and flows in the Lower Wairau River channel.
- 1999 A second pumping station was built at the northern outlet of the lagoon, also with capacity of 2 m³/sec.
- 2000 Proposals were put forward for constructing controllable floodgates on the northern lagoon outlet, to let tidally driven Wairau River water into the lagoon, but to be shut in flood times. This was not proceeded with.

Flooding into the Grovetown Lagoon Catchment from Other Sources and Remedial Stopbanking to Prevent Flooding

- 1860-1880 Flooding occurred with erosion threats from the (upper) Opawa River into the Grovetown area. The Opawa River, in those days, carried substantial Wairau River floodwaters (until 1914 with its progressive blocking off through groyne work at Conders Bend). Stopbanking work was carried out over this period, firstly by the Marlborough Provincial Council, and then (after 1874) by the Spring Creek River Board, to control this flooding.
- 1880-1921 Flooding from upstream Wairau River break-outs (Railway Bridge to Boyces Roads) resulted in flooding into the Grovetown Lagoon area. Stopbanking was constructed by the Spring Creek River Board to control this flooding.
- 1921-2000 The related stopbanking was progressively upgraded by the Wairau River Board, the Marlborough Catchment and Regional Water Board, Nelson Marlborough Regional Council and the Marlborough District Council.
- 1933-1943 Return stopbanking of Spring Creek banks was constructed to counter flood overflows from the Wairau River backing up into Spring Creek and thence overflowing into the Grovetown Lagoon area.
- 1996 Floodgated culverts were constructed on the Spring Creek outlet to prevent the Wairau River flood back-flow.

Watercourses and Drainage Channels into the Grovetown Lagoon

- 1847 The survey by W Budge showed just a single large creek flowing into the Grovetown Lagoon in the vicinity of Fell street.
- 1845 Individual timber millers undertook the earliest drainage work.
- 1850-1874 Government ditches, now called Drain F and part of Drain N, were cut from the river to Vickerman Street, by the Provincial Council.
- 1875-1923 The Spring Creek Roads Board, together with individual settlers, constructed further drainage channels, generally between SH1 and Grovetown Lagoon, and maintained those drains, including Kellys and Kellips drains, with regular arguments regarding the need for larger/better culverts.
- 1880-1905 A Spring Creek Co-operative Drain Company was formed to construct (the now called) Drain O to join into and extend Kellys Drain to west of SH1.
- 1923-1943 The Marlborough County Council took over the statutory responsibility for land drainage, with an emphasis on roadside drainage channels, with maintenance by manual methods of weed cleaning.
- 1944 A specific Grovetown Drainage District was constituted under the Marlborough County Council, with a differential rating scheme, based on benefit, covering 1231 hectares. Some 18 kilometres of channel were maintained by the district, together with the Council's roadside maintained drains (and private drains) out-falling into this network.

- 1950-1959 Mechanised methods were introduced for weed and silt maintenance and removal from drainage channels.
- 1960 The Marlborough Catchment and Regional Water Board took over responsibility for the Grovetown Drainage Area, which today has an effective catchment area of 1327 hectares.
- 1960-1973 Reconstruction and upgrading of all public drainage channels was undertaken in the area, as part of the Wairau Valley Scheme. The drainage channels were given alphabetical names for the convenience of management. Additional roadside and private drains were improved, and by 1973, 26 kilometres of channels were being maintained.
- 1961 Agrichemical herbicide for weed control was introduced.
- 1992 The Marlborough District Council took over responsibility for the 34 kilometres of drainage channel network of public land drainage and roadside drains (and with further private drains leading into this network).

Weed Establishment in the Grovetown Lagoon

- 1971 Lagarosiphon was identified as scattered at various sites throughout Marlborough.
- 1981 Lagarosiphon was reported to be increasing at various sites throughout Marlborough including the Grovetown Lagoon.
- 1984 Egeria densa was noted to be in the Grovetown Lagoon.
- 1986-1990 The Ministry of Fisheries and the Marlborough Catchment Board carried out operations to try and eliminate egeria from the lagoon. Diquat was used for this work. The trials were not successful.

Appendix 2

Code of Practice for Hunting the Grovetown Lagoons, and for Maimai Standards

- Maimais are to be located on the bank margins.
- Maimais shall not exceed 2m x 3m.
- Maimais shall be made of good quality durable materials and be safely constructed.
- Maimais shall not be dressed with weed materials such as gorse and broom, kanuka / manuka is best.
- Maimai camouflage is not to be sourced on site.
- If crack willow is cut for visibility reasons it is not to be dropped in the water or left where it is likely to grow.
- Only trained dogs under strict supervision will be permitted to assist hunters in the lagoon area.
- A small boat or canoe may be necessary to assist in the hunting of waterfowl, these should be camouflaged and kept out of site when hunting.
- All rubbish is to be removed including spent shotgun cases.
- Decoys are not to be left set after the season.
- Maimais should be dressed and completed no later than two weeks prior to the season.
- Other hunters may be using this area, avoid disturbing their areas and ensure ducks are in range.
- No game birds are to plucked, gutted or otherwise processed within the bounds of the Grovetown Lagoon.
- Consideration must be given to other public users.
- Remember the basic firearm rules especially a safe firing zone if in proximity to buildings or houses.
- Please report any rubbish dumping or unacceptable behaviour A.S.A.P.
- Hunters may be asked to assist with working bees.

Appendix 3

Flora and Fauna List

(Department of Conservation 1997, NIWA 1999)

Crack willow	White Heron	Common Bully
Grey willow	Mallard Duck	Inanga
Weeping willow	Grey Duck	Koura
Cabbage tree	Swan	Black flounder
Flax	Pied Stilt	Shrimps
Carex secta	Welcome Swallow	Shortfinned Eel
Urtica linearifolia	Spotless Crake	Longfinned Eel
Azolla filiculoides	Fantail	Brown Trout
Duckweed	Grey Warbler	Smelt
Nitella sp	Chaffinch	
Raupo	Pied Shag	
Glyceria maxima	Harrier Hawke	
	Little Shag	
Cotula coronopifolia	Pukeko	
Egeria densa	Kingfisher	
Lagarosiphon major	Yellow Hammer	
Potomogen ochreatus	Turkey	
Rorippa sp	NZ Falcon	
Swamp Buttercup	Grey Teal	
	Paradise Duck	
	Australian Coot	
	Wee Spotted Crake	
	Black Teal Duck	

Appendix 4

References

- Impact of Piggery Effluent Discharge into the Grovetown Lagoon (1978)
Bargh, Brian (Marlborough Catchment and Regional Water Board)
L012532
- Waste Water and Sewage in the Lower Wairau Valley - Seminar held on 31/3/80
L012851
- Wairau Wastewater Study - Unsewered Townships Investigation (March 1996)
Report prepared for MDC
L000184
- Fish Survey: Grovetown Lagoon (1997) Jan Clayton-Greene. De[partment of
Conservation Report Document.
- A survey of water quality, macrophytes and fish in the Grovetown Lagoon,
Blenheim,
January - February 1999
Downes, Malcolm; Glova, Gordon; Sorrell, Brian. L011918
- Options for the enhancement of Grovetown Lagoon, NIWA Report, June 2001
- Grovetown Lagoon and Catchment. Surface water quality monitoring survey, June
2002, MDC Report
- Ecological Assessment of spring-fed streams on the Wairau Plain, Cawthron
Report for MDC, March 2002

Appendix 5

Links with Other Marlborough District Council Projects

- National Biodiversity Strategy
- Stream Maintenance
- Riparian Management Strategy
- SNA project
- Landscape Concept Plan for the Wairau Plain
- Grovetown Wastewater Treatment
- A.E.Sadd Resource Consent Application
- Department of Conservation PNA project
- Groundwater Extraction Project.

Appendix 6

Interested Parties

The Grovetown Lagoon project working group wishes to acknowledge the interest in, and contributions to, the project from people and organisations including the following:

Alf Norton	Doug Hislop	John Inder	Nicki MacDonald
Alistair Sowman	Doug Huria	Judith Manson	Peter Hamill
Andrew Wilkie	Francis Maher	Kelly Sunderland	Peter Thomson
Anna Crowe	Gabriel Kepes	Keren Mitchell	Reuben Kepes
Anthony Chaytor	Gabrielle Inder	Kevin Sadd	Richard Hunter
Betty Dodson	Gerald Hope	Kevin Thompson	Richard Keys
Bill Te Huia	Howard Sadd	Kylie Pinker	Roger Young
Bill Stafford	Ian Ewen-Street	Larry Pigou	Roseanne Marsden
Brian Sadd	Ian Mitchell	Leon Griebble	Rowan Strickland
Brin Williman	Ian Shapcott	Lindsay Baldick	Stan Watt
Bruce Sunderland	Ivan Neame	Lorraine Eade	Steve Bezar
Colin Timms	Ivan Sutherland	Lynda Neame	Tim Leyland
Carol Mills	Jan Hope	Lynda Scott	Tom Harrison
Cynthia Young	Jeffrey Hynes	Mark Wheeler	Vern Stafford
David Eade	Jim Barnett	Mervyn Wisheart	Wairau Rowing Club
David Kepes	Jo Stafford	Mike Harvey	Warren Sadd
Don Leslie	John Dodson	Montana Wines Ltd	Wareren Workman