



# TE REO O TE REPO

## THE VOICE OF THE WETLAND

---

CONNECTIONS, UNDERSTANDINGS AND LEARNINGS  
FOR THE RESTORATION  
OF OUR WETLANDS

EDITED BY YVONNE TAURA  
CHERI VAN SCHRAVENDIJK-GOODMAN  
AND BEVERLEY CLARKSON

Te reo o te repo = The voice of the wetland:  
connections, understandings and learnings for the  
restoration of our wetlands / edited by Yvonne Taura,  
Cheri van Schravendijk-Goodman, Beverley Clarkson. --  
Hamilton, N.Z. : Manaaki Whenua – Landcare Research  
and Waikato Raupatu River Trust, 2017.

1 online resource

ISBN 978-0-478-34799-9 (electronic)

ISBN 978-0-947525-03-3 (print)

I. Taura, Y., ed. II. Manaaki Whenua – Landcare Research  
New Zealand Ltd. III. Waikato Raupatu River Trust.

Published by

Manaaki Whenua – Landcare Research  
Private Bag 3127, Hamilton 3216, New Zealand

Waikato Raupatu River Trust  
PO Box 481, Hamilton 3204, New Zealand

---

This handbook was funded mainly by the Ministry  
of Business, Innovation and Employment (contract  
C09X1002). The handbook is a collaborative project  
between the Waikato Raupatu River Trust and Manaaki  
Whenua – Landcare Research.

**Editors:**

Yvonne Taura (Ngāti Hauā, Ngāti Tūwharetoa,  
Ngai Te Rangi, Ngāti Rangi, Ngāti Uenuku/Waikato  
Raupatu River Trust and Manaaki Whenua),  
Cheri van Schravendijk-Goodman (Te Atihaunui  
a Papārangī, Ngāti Apa, Ngāti Rangi), and  
Beverley Clarkson (Manaaki Whenua).

**Peer reviewers:**

Anne Austin (Manaaki Whenua), Kiriwai Mangan  
(Waikato Raupatu Lands Trust), and Monica Peters  
(people+science).

**Design and layout:**

Abby Davidson (NZ Landcare Trust)

This work is copyright. The copying, adaptation, or  
issuing of this work to the public on a non-profit basis  
is welcomed. No other use of this work is permitted  
without the prior consent of the copyright holder(s).

© 2017



# **Te Reo o Te Repo**

**The Voice of the Wetland.** Connections, understandings  
and learnings for the restoration of our wetlands

2017

*Edited by*

**Yvonne Taura**

Ngāti Hauā, Ngāti Tūwharetoa, Ngai-Te-Rangi,  
Ngāti Ranginui, Ngāti Uenuku

Waikato Raupatu River Trust  
Manaaki Whenua

**Cheri Van Schravendijk-Goodman**

Te Atihaunui A Papārangī, Ngāti Apa, Ngāti Rangī

**Beverley Clarkson**

Manaaki Whenua



# CONTENTS

page

## Acknowledgements

Foreword. Rahui Papa

Introduction. Yvonne Taura, Cheri van Schravendijk-Goodman, Beverley Clarkson, and Haimona Waititi

## PROCESS OF ENGAGEMENT 'KAPU TĪ'

1.	Kapu tī 101 – cuppa teas and cross-cultural conversations Cheri van Schravendijk-Goodman	13
2.	The Ake Ake Model – forever and ever Yvonne Taura, Lorraine Dixon, and Miriama Turner	23
3.	Toreparu Wetland – a research partnership journey Mahuru Robb and Taruke Thomson	41

## CULTURAL RESOURCES

Indicators for cultural resources Garth Harmsworth	51
Flora	
4.1 Wātakirihi – te huakita o te wātakirihi – bacterial quality of watercress Lorraine Dixon	57
4.2 Kuta – the giant of freshwater habitats Mieke Kapa	65
4.3 Harakeke – weaving people together Sue Scheele	71
Fauna	
5.1 Noke – engineering our soils Scott Bartlam	81
5.2 Kōura – the ancient survivor Ian Kusabs	89
5.3 Ruru – he tangi na te ruru – conversations in the night Rangi Mahuta, Cheri van Schravendijk-Goodman, and Huriwai Paki	95
5.4 Kawau – te mokopuna a Terepunga – the offspring of Terepunga Tekiteora Rolleston-Gabel and John Innes	101
5.5 Matamata – eating with our tūpuna Rangi Mahuta, Cheri van Schravendijk-Goodman, and Cindy Baker	107

## TOOLS AND APPROACHES

Tools – herbicide use – finding the balance Cheri van Schravendijk-Goodman	121
6.1 Impacts of willow control on terrestrial invertebrates Corrine Watts	123
6.2 Impacts of willow and willow control on zooplankton Yvonne Taura	129
6.3 Maurea Islands – a restoration journey Cheri van Schravendijk-Goodman, Jaedyn Falwasser, and John Brown	135
Mātauranga Māori – Māori Knowledge Shaun Awatere, Garth Harmsworth, and Mahuru Robb	151
7.1 Rākau preservation technique – unlocking dormant knowledge Yvonne Taura	155
7.2 Waitaki restoration Gail Tipa, Kyle Nelson, Mandy Home, and Myra Tipa	165
7.3 Hei whenua ora – Te Hākari Dune Wetland Huhana Smith	179
<b>Glossaries of terms</b>	
Ngā Whakamārama/glossary of Māori terms	193
List of flora and fauna species	198

# ACKNOWLEDGEMENTS

The editors would like to thank the following people for their valuable contributions to the handbook:

## **Contributors:**

Andrew Styche (Te Papa Atawhai)  
Cindy Baker (Taihoro Nukurangi)  
Corinne Watts (Manaaki Whenua)  
Emma Williams (Te Papa Atawhai)  
Gail Tipa and Kyle Nelson (Tipa & Associates Ltd)  
Garth Harmsworth (Ngāti Tūwharetoa, Te Arawa, Ngāti Raukawa/Manaaki Whenua)  
Haimona Waititi (Te Whānau-a-Apanui, Ngāti Porou, Ngāi Tahu)  
Huhana Smith (Ngāti Tūkorehe, Ngāti Raukawa ki te Tonga/Manaaki Taha Moana)  
Huriwai Paki (Ngāi Tuhoe/Waikato Raupatu River Trust)  
Ian Duggan (Te Whare Wānanga o Waikato)  
Ian Kusabs (Te Arawa, Ngāti Tūwharetoa/Ian Kusabs & Associates Ltd)  
Jaedyn Falwasser (Ngāti Mahuta/Waikato Raupatu River Trust)  
John Brown (Ngāti Te Ata, Ngāti Mahuta)  
John Innes (Manaaki Whenua)  
John Te Maru (Ngāti Hauā/Waikato-Tainui College for Research and Development)  
Lorraine Dixon (Ngāti Whaawhaakia)  
Mahuru Robb (Ngāti Ranginui, Ngāti Awa/Manaaki Whenua)  
Mandy Home (Taihoro Nukurangi)  
Mieke Kapa (MSc Research, Te Whare Wānanga o Waikato)  
Miriam and Hone Turner, and the Turner whānau (Ngāti Amaru)  
Myra Tipa (Waikouaiti)  
Rahui Papa (Ngāti Koroki-Kahukura/Chairman of Te Arataura o Waikato-Tainui)  
Rangi Mahuta (Waikato)  
Rangi Matamua (Ngāi Tuhoe/Te Whare Wānanga o Waikato)  
Scott Bartlam (Manaaki Whenua)  
Shaun Awatere (Ngāti Porou/Manaaki Whenua)  
Sue Scheele (Manaaki Whenua)  
Taruke Thomson (Ngāti Whakamarurangi)  
Tekiteora Rolleston-Gabel (Ngāi Tuhoe, Ngāti Kahu, Ngāi Te Rangi)  
Tom Roa (Ngāti Maniapoto/Te Whare Wānanga o Waikato)

## **Graphics and images:**

Amiria McGarvey (Iti ora flax)  
Barry O'Brien (Te Whare Wānanga o Waikato)  
Chris Tanner (Taihoro Nukurangi)  
Colin O'Donnell (Te Papa Atawhai)  
Craig Bullock, Janice McKenna, Jonathan Astin (Images supplied by Andrew Styche (Te Papa Atawhai))  
Danny Thornburrow (Manaaki Whenua)  
Gonzalo Giribet (Harvard University)  
Jeremy Rolfe (Te Papa Atawhai)  
Joanna Katipa (Te Awamarahi Marae)  
Jon Sullivan (NatureWatch NZ)  
Kerry Bodmin (Taihoro Nukurangi)  
Monica Peters (people+science)  
Nardene Berry (NZ Landcare Trust)  
Paul Champion (Taihoro Nukurangi)  
Peter Hamill (Marlborough District Council)  
Philippe Gerbeaux (Te Papa Atawhai)  
Ross Gray (Āta mātai, mātai whetū)  
Shonagh Lindsay (National Wetland Trust of NZ)  
Stephen Moore (Manaaki Whenua)  
Tamoko Ormsby (Tūrangaewae Marae)  
Te Maari Gardiner (NZ Artist)  
Trevor James (Āta mātai, mātai whetū)  
Tūrangaewae Trust Board (Tūrangaewae Marae)



Iti ora flax.  
Made by Amiria McGarvey

# FOREWORD

*Noo taatou te awa, noo te awa taatou*

**We belong to the river, the river belongs to us**

Sir Robert Te Kotahi Mahuta

---

*Te Reo o Te Repo: The Voice of the Wetland*, is the first handbook to focus on the importance of repo (wetland) values in Aotearoa New Zealand from a cultural perspective. This handbook is the culmination of several years of research partnership between the Waikato Raupatu River Trust (entity of Waikato-Tainui tribal organisation) and Manaaki Whenua – Landcare Research. The editors of the handbook have successfully interwoven diverse knowledge, values, and perspectives (including maatauranga iwi (Maaori knowledge)) from kaitiaki (guardians) and kairangahau (researchers) to provide unique insights into the cultural significance of repo, that help define the priorities for repo restoration throughout both distinct tribal rohe (region) and the entire motu (Aotearoa New Zealand).

Repo have cultural, spiritual, historic, and economic value to tangata whenua (indigenous people). Despite this, more than 90% of repo throughout Aotearoa have been destroyed. For Waikato-Tainui (tribal people of the Waikato Region), repo are the kidneys for the Waikato River – they cleanse and filter out the toxins from the surrounding land catchment before entering into our tupuna awa (ancestral river). The Waikato River is more than a river: she is our tupuna (ancestor), giving sustenance to the whenua (land) that then feeds our people. Repo are also the food basket for the Waikato people – the resources on which Waikato-Tainui rely for hauanga kai (food gathering sites).

Repo are a major component within the whakapapa (connection) of our rivers and lakes, reflecting our values and providing significant spawning grounds and habitat for diverse, culturally important taonga, including plants, animals, fish, birds, and insects. The mauri (life force) of repo for Waikato-Tainui is linked to the overall ecological health and wellbeing of our whakapapa. Adverse impacts on the whakapapa of our repo will therefore have corresponding undesirable effects on mauri and the ability of the tribe to utilise hauanga kai. Our aspiration is for our tupuna awa to return to its pristine state. The awa and repo are the beneficiaries of our efforts to restore these important natural resources.

*Te Reo o Te Repo* reveals the rich connection that whaanau, marae, hapuu, and iwi have with their repo. It also highlights the collaborative efforts between tangata whenua and research providers to restore these unique ecosystems and increase the health and wellbeing of our repo for future generations.



Rahui Papa (Ngaati Koroki-Kahukura)  
Chairman of Te Arataura o Waikato-Tainui

*Ko te mātauranga he wai nō ruawhetū*

*Kia mahara koe i te puna inā inu koe i te wai*

*Ko wai koe?*

*Ko wai ahau?*

*Ko wai ahau*

**Māori knowledge flows from the cosmos**

**When you drink the water, remember the spring**

**Who are you?**

**Who am I?**

**I am water**

Rangi Matamua

