

I TE HIKUWAI KI TE WAHAPŪ

# Kaingākau āna ki te ika taketake

FROM HEADWATERS TO HARBOUR

# Hooked on native fish



**NZ LANDCARE TRUST**  
NGĀ MATAPOPORE WHENUA

# Kaingākau #1 āna ki te ika taketake

# Ngā ika wai māori

ĀKONA NGĀ ĀHUATANGA E PĀ ANA KI NGĀ IKA TAKETAKE, KA NOHO KI HEA, HE AHA HOKI TĀU HEI WHAKAORA I A RĀTOU, Ō RĀTOU TOI WHENUA ME Ō RĀTOU TERENGA WAI.

Te kōkopu. Photo: Stephen Moore, Landcare Research.

## He mea kei te wai...

Whakaarohia he ika wai māori – ko te mea tuatahi ka puta ki a koe ko te tuna rānei, ko te taraute rānei? Neke atu i te 50 ngā momo ika taketake kei ngā roma, kei ngā roto, kei ngā awa, kei ngā repo hoki o Aotearoa – he ika ririki, he kōpūtea, he tuna, he piharau, he mohoa, he papangoko, he paraki me te kanae ētahi o ēnei ika. Arā anō tōna 22 nei ngā momo ika tauhou. Me e pēnei ana te nui o ngā momo, ko te tikanga e muia ana ngā wāhi wai māori e ngā momo ika manomano rerekē, nē? Pānuitia ngā kōrero e whai ake nei kia mōhio ai koe he aha te aha.

## Tūtaki mai ki ngā ika taketake

He nui ngā ika taketake me uuaa kē ka kitea, i te mea he noho huna; he ririki; he kirihuna; he noho tuawhenua, ka puta noa iho rānei i te pō, ā, i te awatea ka huna ki raro kōhatu, ki raro rānei i ngā rākau taumarumarū kei ngā tahataha o te wai. He onge hoki ngā ika taketake – he haurua kua tata korehāhā, kotahi te momo - ko te kiwikiwi, kua korehāhā kē, nō ngā tau 1920 te kitenga whakamutunga.

Matamata: He nui ake i te 100 kiromita te roa o te hekenga whakarungatanga o ētahi o ēnei ika moroiiti i te moana ki te wai māori. Photo: Peter Hamill, Marlborough District Council.

## Ngā Ika Ririki: He Ika Rangatira

Ko ngā ika ririki te ranga ika wai māori nunui o Aotearoa, e 29 ngā momo rerekē pērā i te īnanga, te kōkopu, te kōaro me te waikaka. Ko te ingoa 'galaxiid' i ahu mai i te tauria kāhui whetū koura me te hiriwā e kitea ana i te kiri unahikore o ngā ika nei – koinā hei huna i a rātou i roto i ngā kōawa ngahere e tere ai rātou. Kitea ai hoki ki ngā repo, ki ngā manga me ngā awa nui. I te mea he hātaretare ngā ika nei, he pai ki a rātou te kai nahonaho, ngārara orapoto me te hua o te waeroa. Ka taka ana ērā ngārara ki te wai, koinā hei kai matua mā te ika ririki.

## Te Waikaka: He Moe Raumati

He āheinga rerekē tō te waikaka. Ka taea e tēnei ika te noho mō tētahi wā āhua roa nei i waho i te wai, i roto i te puare rākau me te otaota mākū i ngā wā maroke. Nā te āhei o te tinana roa ki te kōwiri ki roto ki ngā puare moroiiti i taea ai te pēnā, kātahi ka moe mō te Raumati ka whai hā ai te tinana mā te kiri mākū. Nā tēnei ka ora ai i te maroketanga o te manga, o te kōawa, o te hōpua, o te repo. E mōrearea ana te noho a tēnei momo ika i te mea e ngaro haere ana ō rātou toi whenua me ō rātou terenga wai.

Ahakoā te ingoa ki te reo Pākehā, arā te 'mudfish', me noho te ika nei ki rō wai mā. Ko rātou hei tahu i te ora o te taiao.  
Photo: Stephen Moore, Landcare Research.

## I tua atu i te rengarenga matamata, he kōrero kē!

E rima ngā momo ika ririki kei roto i te whānau matamata. He ika wai tai, wai māori hoki. Ka hui ngā kātua mai i te Ngahuru ki te Takurua kia puta ai he hua. Ko ngā momo pēnei i te kōkopu ka hua i ngā otaota o ngā manga ngahere i te wā e pupuke ana. Ko ētahi atu momo ka heke whakararo i te awa ki te whakaputa hua, ā, ko tētahi o tēnei momo, ko te īnanga, ka hui ki ngā wahapū moana kia hua i te tai nui. Ka piri ngā hua ki ngā otaota mākū, ki ngā toitoi, ki ngā tipu kāpuia me te harakeke i te taha o te awa, ā, ka rua wiki, ka puta ngā hua i te pupuke o te tai nui. Ka kawea e te waipuke me te tai timu ngā hua iti ki waho, ki te moana ki reira tere ai mō te 4 – 6 marama e kai ana i ngā kaiāo moroiiti e pōteretere ana i te moana. Ka hoki mai ki te wai māori i waenga i te fimatanga o te Kōanga me te fimatanga o te Raumati, ka kaukau whakarunga tahi i te awa hei matamata.

**Ka ngaro pea te mahi hī matamata ki Aotearoa!** E kore pea e roa te oranga o te ika taketake i te kaha o te takakinotanga o ō rātou terenga wai me ō rātou toi whenua. E raru ana i te tangohanga o te wai i ngā repo, i te parapara, i te hutinga o ngā otaota me te tūkinotanga a ngā kau. Ka haukotia te heke a ngā ika nei e ngā ārai kei raro i te wai, ka whāia hoki e ngā ika nō whenua kē, pēnei i te taraute.



## He Tuna: He Pāhekeheke

E toru ngā momo tuna kei Aotearoa; ko te tuna heke, ko te ōrea me te tuna kōtingotingo o Ahitereiria i ū noa mai ki Aotearoa e 25 tau ki muri.

Noho ai te ōrea ki ngā momo wai katoa, kōawa mai, awa nui mai, roto tuawhenua mai, roto tahamoana mai, wahapū mātaitai mai, hāpua mai. Engari anō te tuna heke, tere ai ēnā i ngā wai mātaitai mahana o te roto tahamoana, o te roto tuawhenua hoki.

I te mea he mōrearea te noho a tēnei momo, kua heke te nui o ngā ika e taea ana e te tangata te hī, ā, kua tohua te rahinga o te ika ka taea te hī. Koinei ngā huarahi hei tiaki i ngā kōkopu tuna.

Ka tohe ngā tuna nei ki te heke whakararo atu anō i te awa, tae atu ki te moana, kia tutuki rawa ai te mataora o te momo tuna nei.

## NGĀ TONGAREWA O TE MOTU

INĀ TE WHAKAARO NUI O TE MĀORI KI TE TUNA, KA PAKANGA I MUA MŌ TE TUNA TE TAKE. KA MAU TE TUNA I TE HĪNAKI, I TE PĀ TUNA, I TE MATARAU, I TE KŌRAPA, I TE TOI, I TE KŌUMU, I TE RINGA KAU NOA IHO RĀNEI.

KI TĀ TE MĀORI TITIRO HE NUI NOA ATU NGĀ MOMO TUNA I ĒRĀ E TORU KUA TOHUA E NGĀ KAIPŪTAIAO, KA MUTU NEKE ATU I TE 100 NGĀ INGOA A TE MĀORI MŌ NGĀ MOMO TUNA REREKĒ.

Tae atu ki te rua mita te tāroa o te ōrea, ā, neke atu i te 100 tau te roa o tana ora. He 24 kiro te taumaha o te ōrea nui rawa i mau ai i te roto o Waihola e pātata ana ki Ōtepoti. Photo: Stephen Moore, Landcare Research.



Mā te Reo. Me te Reo. Mō te Reo.



## Ngā Kōpūtea: Ka mau te wehi!

E whitu ngā momo kōpūtea taketake. Ko te rerekē o tēnei momo i te ika ririki, kāore anō kia raru i te tangata, nā konei e kitea whānuitia ana, e mātotoru ana hoki. Kotahi noa iho kei te kīia kua tata te korehāhā. E kīia nei he ika 'whānui' i te mea ka tere ki roto i ngā momo wai katoa, ka kai hoki i ngā momo kai rerekē.

Te kōpūtea. Photo: Peter Hamill, Marlborough District Council.

## Māu ngā ika taketake e koiora ai, e toiora ai!

- Whakatōkia ngā otaota taketake ki ngā tahatika awa
- Whakaurua ngā ārai rōwai tuku i te ika, kua ko te ārai aukati ika
- Whakatūria he taiapa hei parepare i ngā kau i ngā arawai
- Kua e riringi para ki roto ki ngā putanga wai
- Waiho ngā rākau putu ki ngā manga wai hei whakaruruhau mō ngā ika
- Kua e kaha rawa te hī tuna, te hī matamata hoki
- Kua rawa e tuku ika tauhou ki ngā terenga wai o ngā ika taketake



## Ka uru mai he ika tauhou

I te pito o te rau tau tekau mā iwa ka haria mai e ngā tauwi tuatahi he ika tauhou, ko te taraute me te hāmāna hei hī mā te tangata, hei kai hoki māna. Inā te tongarewa o ēnei ika kua whakatapua ō rātou terenga wai i raro i te Ture Tiaki Taiao. Ka hīa hoki te fā (char), te tēnehe (tench) me te oia (perch). Hīa ai te rati (rudd) ki Tāmaki me Waikato hei mahi ngahau mā te tangata, engari ki ētahi atu wāhi he ika pōrearea noa iho. Me whai raihana te tangata i mua i te hīnga i ēnei momo ika.

## He mōkai, he ika pōrearea rānei?

He nui ngā ika mōkai, ika hōpuapua hoki kua tukuna ki ngā arawai, ā, kua noho ēnā hei ika pōrearea. Kua tere muia e rātou ētahi wāhi, kua pēhi hoki i te rangā ika taketake. E whakararu nei ngā ika tauhou i te ora o ngā ika taketake:

- ka hūtia e te morihana koi ngā otaota taketake, ka whakatutū i te parataiao
- ka tutū i te ika poti te parataiao, ka horomi i te otaota taketake tae atu ki ngā ngata me ngā ika
- ka kai te ika kitakita ("mosquitofish"), te tēnehe, te rati, te oia me te ika koura i ngā ngārara, ngā otaota me ngā ika taketake, ka kore ai he kai mā ngā ika taketake

## Haukotia te urutā

- Kua rawa e tuku i ngā otaota me ngā ika mōkai ki ngā arawai, e riringi rānei ki roto ki ngā putanga wai
- Āta horoia tō poti, te tōanga waka, me ngā utauta hī i muri mai i ia haerenga kia kore ai e kawea te otaota, te ika, te hua ika rānei mai i tētahi wāhi ki tētahi
- He mea takahi ture te tuku ika ki ngā kōawa ki te kore he puka whakaae. He mea takahi ture hoki te whakatupu, te hoko rānei i te ika pōrearea

Mehemea ka inea te taumaha o ngā ika kei roto i te riu o Waikato, ko tōna 80 ōrau he morihana koi. Photo: Nelson Mail.



## Kei te hiahia pārongo atu anō?

[www.TeAra.govt.nz/en/life-in-fresh-water/4](http://www.TeAra.govt.nz/en/life-in-fresh-water/4)

[www.nzfreshwater.org/](http://www.nzfreshwater.org/)

[www.mudfish.org.nz/](http://www.mudfish.org.nz/)

[www.niwa.co.nz/our-science/freshwater/tools-old/fishatlas/fishfinder](http://www.niwa.co.nz/our-science/freshwater/tools-old/fishatlas/fishfinder)

[www.doc.govt.nz/conservation/native-animals/fish/facts/](http://www.doc.govt.nz/conservation/native-animals/fish/facts/)

Te Reo translation: Pānia Papa, Takatū Associates Ltd.

Ētahi atu pukameka mō te ika i tēnei huinga:

### #1 Ngā ika wai māori

#2 Ngā mahinga kōawa hei painga mō te ika

#3 Te whakatika i ngā tapa kōawa

#4 Te ika taketake i te tāone

#5 Te ika taketake i te pāmu

#6 Te tiaki i ngā hōpuapua

Tikina ngā pukameka katoa i: [www.landcare.org.nz](http://www.landcare.org.nz)

He mea whakaputa e NZ Landcare Trust 2015.





ōrea



moroiti tirakē



kōkopu

# NGĀ IKA TAKETAKE ME Ō RĀTOU TAIAO

I te taiao ora ka kitea ngā ika taketake  
noho wai māori i ngā momo wāhi rerekē...

ōrea

moroiti tirakē

He roma kupere kei ngā pukepuke

Hydro lake

tīpokopoko

Ngā repo kua ngaheretia,  
ngā ngahere māori me  
ngā puna riki

kōkopu / toitoi

kōkopu / kōpakopako

papamoko

He roma wai āhua karekare  
– he tere te rere engari kei  
raro i te hīrere / pāpuni

Ngā roto ka rere  
whakaroto mai te  
wai i te awa, ka puta  
whakawaho te wai i  
te kōtore manga

hauhau / waikaka

tikiheimi / paraki

He manga

tuna heke / tuna

tīpokopoko

kōkopu / kōpakopako

kōkopu taiwhara

tīpokopoko

He roma wai kei ngā mānia  
– he whānui, he pūroto

toitoi

kōkopu taiwhara



hauhau / waikaka



tuna heke / tuna



kanae





kōaro



tīpokopoko



kopu / toitoi



kōkopu / kōpakopako



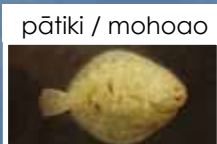
papamoko



tikihehi / paraki



tīnanga



pātiki / mohoao



piharau



toitoi

# Ngā mahinga kōawa hei painga mō te ika

NĀ NGĀ KŌAWA E PAI ANA MŌ TE IKA, E WHAI WHAITUA ORANGA REREKĒ AI NGĀ IKA TAKETAKE, E WHAI NGĀRARA AI HEI KAI, E WHAI OTAOTA AI HOKI HEI MARU. PĀNUITIA NGĀ MEKA KĀTAHI KA RUKU KI ROTO, KI TE ĀWHINA I NGĀ IKA TAKETAKE!

Te kōawa o Mangakōtukutuku, i Kirikiriroa. Nā Monica Peters, nō NZ Landcare Trust te whakaahua.

## Me arotahi ki te wai...

He maha ngā mahi tiaki kōawa e arotahi ana ki te whenua, pērā i te whakatō rākau ki ngā pīnaki me ngā tahatika hei whakaiti i te horonga o te whenua; i te whakarite rārangi mauti tātari hei puru i te kenepuru; i te whakatū taiapa hoki hei aukati i ngā kararehe. Heoi anō, he wero nui ki ngā ika taketake te whai oranga i roto i ngā kōawa. Mā te whakatōtika, mā te whakakotiti, mā te mārau rānei i ngā kōawa, mā te whakatū pā hoki, ka tino rerekē pea te rere o te wai, ā, mā reira pea e kino ai ngā whaitua oranga ika.

## Ngā kōawa e pai ana mō te ika

Arā noa atu ngā wāhanga o te kōawa i tua atu i te wai o roto – he wai oruru, he puna, he kahuwai rerenoa, he tāheke, he hīrere, he wai rōnaki, he ripo, he wai horomi whenua, he rākau wharewhare, he horonga i raro wai anō hoki. E ora ai ngā ika taketake, e tutuki ai hoki te hurihanga ora, me tika ēnei tūhauatanga mō te ika taketake:

- te momo whaitua oranga me rerekē hoki ngā whaitua oranga
- te kounga o te wai (te mahana, te nui o te hau i roto, te purata, te hīmoemoe, ngā whakamōmona)
- te rere o te wai (te nui me te tere)
- te nui o te kai (ngā otaota me ngā ngārara kei roto i te kōawa, kei ngā tapa hoki)
- me ārai atu i ngā kaipatu
- ngā ara heke ki te moana mō ētehi momo ika

## Āwhinatia ngā ika!

### Whakawāteahia te wai

Ka uaua ake tā ngā ika rapu kai, i te kūkātanga o ngā piha i te waipara o ngā kōawa, ā, mā reira hoki pea e raru ai te hekenga o ngā ika. Ka kati pea ngā otaota apiapi kei ngā tahatika i te kenepuru, engari hei rongoā i te mate i te wā poto, whakatūria he pēra hei ki ngā manga pōharuharu e rere ana ki roto i tō kōawa. Ka kino te wai i te kararehe – aukatihia ngā kararehe, whakaritea hoki he waka whāinu, he papu-mā-ihu rānei hei whāinu i ngā kararehe.

### Aukatihia atu ngā kīrearea kaipatu!

Ka whāia ngā ika taketake me ngā ngārara e ngā ika kīrearea pērā i te ika morihana me te kamupūhia. Ko te painga atu mena ka riro mā ngā mātanga tonu e hoepapa ngā ika kīrearea, engari māu tonu e āwhina kia kore ai e hōrapa, mā te āta horoi i ngā poti me ngā taputapu hī ika i mua i te taunga ki wai kē atu, hei hoepapa i ngā toene. Kua rawa e tuku i ngā ika kīrearea ki ngā wai o te taiao – he takahi ture tēnā.

### Whakaitihia te mahi whakatika manga

He wā ka purua ngā manga ki te waipara nui rawa, ki te taru, ki te pūkohu wai hoki. Whakaitihia te raweke i ngā manga, mā te whakamahi i ngā rehu kua rēhitatia, i ngā hirou taru rānei, tē whakamahi ai i ngā koko o ngā mīhini kerī hei tango i ngā taru nui. Waiho ētehi manga kia takoto noa ana i ia tau, e ora ai ngā ika. Waiho ngā mahi mō te pito o te Raumatī, mō te fīmatanga rānei o te Ngahuru, hei karo i ngā wā e hua ai ngā ika me ngā wā e heke ai ngā ika.



Ka noho te tāiha uka hei whaitua oranga matua mō ngā ika pērā i te kōkopu. Nā Brenda Aldridge nō NIWA te whakaahua. He hawai. Nā Stephen Moore nō Landcare Research te whakaahua.

Ka whakamahi te ringa kerepeti nō Coromandel, a Barry Brickell i te pereti me te oko hei hanga i ngā arawhata auaha mā ngā ika. Nā Monica Peters, nō NZ Landcare Trust te whakaahua.

## Ngā tāiha tātai

Ka whakararu pea ngā tāiha kei roto i ngā arawai, pērā i ngā poro rākau me ngā toka, i te kaiwhakahaere waipuke, ā, he pūmate ki te hunga kauhoe me te hunga whakatere poti, engari me whai tāiha rawa ngā ika kei roto i ngā kōawa:

- hei taumarumarū i ngā au kaha
- hei huna i ngā kaipatu
- hei whakamarumarū i te awatea
- hei taunga, hei maru rānei mō ngā toene
- hei kati, hei taunaki rānei i te kai, pērā i te rau, i te para me ngā ngārara
- hei whakawhānui i ngā momo whaitua oranga rerekē

Waiho ngā tāiha uka ki rō wai, āta whakaarohia i mua i te tangohanga o ngā rākau nui ka taka ki roto ki ngā arawai mehemea kōore he mate ka pā i ērā tāiha.

## Whāia te ia

Ka heke te tini ika taketake i waenga i te moana me ngā whaitua oranga ki te taha whakarunga o te awa, i te wā e moroiti noa iho ana ngā ika, engari ka aukatihia te ara e ngā matatara, e ngā pā, e ngā kēti tuku tai, e ngā kōre wai kua hē te waihangatia, ka noho rānei ki runga ake o te kārewa o te wai (ka mutu, koinēi te ārai e kitea whānuitia ana).

Kua whakaritea ngā tauira kōre wai i Aotearoa i runga i te kaha o ngā tuna riki, o ngā kōkopu, o ngā kōaro me ngā toitoi ki te koiri i waenga kōhatu, ki te noho ora ki waho i te wai mō te wā poto, ki te pikī i ngā wāhi mākū o ngā hīrere me ngā taha kōre wai. Me mōhio koutou, kāore ngā tauira kōre wai mō te taraute e pai mō ngā ika taketake moroiti ake.

I ētehi wāhi, kāore he take o te whakatū kōre wai e pai ana mō te ika, hei tauira, mehemea he ārai māori kei reira, pērā i te hīrere nui kei te taha whakararo o te awa, kāore rānei he terenga pai i te taha whakarunga o te awa. Ka whaihua hoki pea ngā ārai hei aukati i te hōrapa o ngā ika kīrearea, hei tiaki rānei i ngā ika taketake ka noho wehe noa, pērā i te kōwaro, i ngā ika ka whai hoki i aua wāhi, pērā i te taraute.

Tonoa he kupu āwhina i te kaunihera ā-rohe, i a Te Papa Atawhai hoki, e mōhio ai koe mehemea e tika ana ngā kōre wai e pai ana mō ngā ika, mō roto i tō kōawa.

### Mā te kōre wai e pai ana mō te ika e whakaū:

- te āta rere o te wai (me iti iho i te 30 henemita i te hēkona)
- te wātea mai o ētehi wāhi whakatā mō ngā ika (pērā i ngā toka, i ngā pātū hauwai rānei)
- te rerenga o te wai, kia kore ai e heke iho i te 10 henemita te nui o te wai i ngā wā katoa
- kāore ngā ika e mate ki te peke

### Ka noho tau ngā kōre wai i te taiao:

- ka whai i te papawai māori mā te whai i te rōnaki noa me te rere tuatahi o te papawai
- mehemea he whānui ake i te kōawa i te wā e rere noa ana te wai
- mehemea he nui, ā, e kore e hipa i te haurua te nui o te wai i te Kōanga
- mehemea kua whakatūria i te pito o te Raumati, i te fimatanga rānei o te Ngahuru, ā muri i te wā e hua ai ngā ika, e heke ai hoki ngā ika

### Tukuna ngā ika kia tere noa mā te:

- whakarite papawai pōhatuhatu e āta rere ai te wai
- whakarite paenga māeneene, kua te paenga kōwakawaka, ki runga ake i te wai hei pikinga mō ngā ika
- whakarite wāhi whakatā, mehemea he roa ake i te toru mita te ara

### Whakapaitia te kounga o te wai mā te:

- whakakotiti i te wai ka puta i te roma wai horihori, i te rori rānei
- whakataiapa i te kōawa
- whakarite ara mō te wai ngawhā ka rere i te waipuke

### Tiakina ngā whaitua oranga ika mā te:

- whakatū ārai kōhatu i te kōre wai hei aukati i te pakarutanga mai o te wai
- whakatū pā kōhatu pākanikani, papa rōnaki kōhatu rānei ki te taha whakararo o te awa hei puna whakatā mō ngā ika
- whakatupu rākau ki ngā tahatika hei taumarumarū i ngā puna whakatā, hei tiaki hoki i ngā tapa o te kōawa

### Tonoa te whakaaetanga

He wāhi mō te katoa ngā arawai, ā, ka pā pea ō mahi i roto i aua arawai ki ētehi atu tāngata, ki ētehi atu pūnaha rauropi i te taha whakararo, i te taha whakarunga hoki o te kōawa.

I mua i tō mahi i roto i ngā kōawa, me whakapā atu ki te kaunihera ā-rohe, ā-taone hoki e kitea ai mehemea me whai whakaaetanga rawa taiao, mehemea rānei he āhuatanga e tika ana hei whai māu.

*Katau: Ka aukati ngā kōre wai kua whakarewahia, i te tere whakarungatanga o ngā ika. Heoi, e faea ana te whakahou, pēnei i tēnei (kei raro iho nei), kua whakapitihia atu he taura piringa kuku kitakita, e pikī ai ngā tuna ki Roto Harihari.*

*He whakaahua whakamarutata i tētehi taura hei pikinga mō te matamata. Nā Bruno David, nō Environment Waikato ngā whakaahua.*



Mā te Reo, Me te Reo, Mō te Reo



Waikato Raupatu River Trust



Ministry for the Environment  
Manatū Ahu Matua



NZ LANDCARE TRUST  
NGĀ MATAPOPORE WHENUA

### Kei te hiahia pārongo anō?

Whakamahia te ipurangi hei rangahau i ngā kīanga matua i ēnei whārangi ipurangi.

#### 'In-stream restoration'

National Institute of Water and Atmospheric Research [www.niwa.co.nz](http://www.niwa.co.nz)

Te Whare Wānanga o Tāmaki makaurau [www.cebl.auckland.ac.nz](http://www.cebl.auckland.ac.nz)

Te Whare Wānanga o Waitaha [www.sustain.canterbury.ac.nz](http://www.sustain.canterbury.ac.nz)

Te Kaunihera o Tāmaki makaurau [www.aucklandcouncil.govt.nz](http://www.aucklandcouncil.govt.nz)

#### 'Fish-friendly culverts' me 'fish access'

Waikato Regional Council [www.waikatoregion.govt.nz](http://www.waikatoregion.govt.nz)

Greater Wellington [www.gw.govt.nz](http://www.gw.govt.nz)

Te Kaunihera o Tāmaki makaurau [www.aucklandcouncil.govt.nz](http://www.aucklandcouncil.govt.nz)

Te Papa Atawhai [www.doc.govt.nz](http://www.doc.govt.nz)

Ētehi atu pukameka mō te ika i tēnei huinga:

#1 Ngā ika wai māori

#2 Ngā mahinga kōawa hei painga mō te ika

#3 Te whakatika i ngā tapa kōawa

#4 Te ika taketake i te tāone

#5 Te ika taketake i te pāmu

#6 Te tiaki i ngā hōpuapua

Tikina ngā pukameka katoa i: [www.landcare.org.nz](http://www.landcare.org.nz)

He mea whakaputa e NZ Landcare Trust 2015.

Te Reo translation: Pānia Papa, Takatū Associates Ltd.

## Te whakatika i ngā tapu kōawa

E PAI ANA TE MĀTAO KI NGĀ IKA TAKETAKE. E WAIA ANA RĀTOU KI NGĀ ARAWAI MARUMARU KUA TUPURIA E TE OTAOTA URURUA, I TE MEA NEKE ATU I TE 80 ŌRAU O AOTEAROA, HE NGAHERE I ŌNA WĀ. ME PĀNUI TONU E KITEA AI NGĀ MAHI E TORU HEI WHAKAORA I NGĀ KŌAWA ME NGĀ WHAITUA ORANGA IKA.

e kōawa o Waitete.  
Nā Rob Davies-  
Colley, nō NIWA  
te whakaahua.

### Te mōhio ki te kōawa

Ka ora katoa ngā ika taketake i roto i ngā kōawa me ngā awa kua tupuria ngā tahataha e ngā mauti, e ngā rākau me ngā otaota māori. Me whai rākau wharewhare aua kōawa hei whakamarumarū i ngā ika, hei whakauka i ngā tahatika, e makere ai hoki ngā rau me ngā ngārara ki roto i te wai hei kai mā ngā ika. I mōhio rānei koe...

- mā te whakatū taiapa aukati kararehe i ngā kōawa ki tuwhenua, ka tino piki te kounga o te wai, ā, ka whakakore pea i te matenga o ngā kararehe i ngā whenua pōharuharu
- mā te whakatō otaota ki ngā tahatika, ka tino piki te kounga o te whaitua oranga ika taketake me te kounga o te wai
- ka tukuna e ngā matamata ō rātou hua ki runga i ngā mauti roa, i ngā toetoe me ngā wīwī i te taha o ngā kōawa ki te taha moana me ngā wahapū
- mā te whakatō i te tini toetoe tae atu ki ngā mea taketake me te harakeke anō hoki e āwhina ki te aukati i ngā waipara, i ngā whakamōmona, i ngā huakita me ētehi atu para, i mua i te rerenga ki roto i ngā kōawa me ngā arawai
- mehemea kei te pāmu koe, mā te whakatō otaota me te whakatū taiapa i ō manga, ka iti iho te tupu o te taru, ka iti iho hoki ngā utu whakapaipai manga haere ake, ā, mā reira hoki e tupu ai ētehi whaitua oranga mō ētehi atu momo koiora, pērā i te ngārara me te manu.

Ngā wāhi me mātua whakaora hei whaitua oranga ika:

- ngā kōawa tuwhera pērā i ngā whenua pāmu kāore anō kia tupuria ngā tahatika e te otaota
- ngā kōawa paku kei ngā hikuwai o ngā roto
- ngā taha o ngā kōawa ka whitikina e te rā (e anga ana ki te raki, ki te uru hoki)
- ngā whenua, e 200 mita, neke atu rānei te roa kua tupuria e te otaota, hei whakamātao i te wai
- ngā wahapū e whakatōkia ai ngā toetoe me ngā mauti hei whaitua whakaputa hua matamata

Pātaitia tō kaunihera ā-rohe i mua i te whakatō otaota ki rō manga - tērā pea he herenga e pā ana ki te haeretanga atu ki te whakapaipai i aua wāhi.

He hua inanga kei waenga i ngā toetoe. Nā Sjaan Charteris, nō Te Papa Atawhai te whakaahua. Kei te Karauna te mana tārua.



### Ngā mahi e toru hei whakaora i ngā kōawa

#### 1. Me whakarite

Mā te whakarite pai i te wāhi e pai ake ai te rarau o ngā otaota ki te whenua. Me fīmata ngā mahi whakarite i te Raumati, kia rite ai ki te whakatō i te Ngahuru me te Hōtoke.

Mehemea kei waenga mauti matomato tō wāhi, e pai ana kia tapahia, kia tukuna kia paku kainga e te kararehe, kia rehua rānei ētehi wāhi ki te rehu patu taru e tika ana, e pai ana rānei kia whakatōkia rawatia ki te otaota, kei te āhua o te momo. E taea ana te whakatō otaota ki roto tonu i ngā wāhi kei reira te mauti poto, i te nuinga o te wā, engari me tūpatu mehemea he kikuyu, he taru mauti rānei e tata ana, kei tupuria ō otaota e aua taru.

Ki ana ētehi wāhi i te taru tauhou, ka mutu he tino pērā ngā wāhi e tata ana ki ngā taone. Ka tupuria ngā otaota māori e ētehi momo taru ki te kore e āta arowhaitia. Me āta huhuti i ngā taru i mua i te whakatō otaota māori. I ngā wāhi e kaha tupuria ana e te tarutaru, me whakarite i ngā wā patu taru me ngā wā whakatō mō ētehi tau torotoru nei. Mā konei e whāiti ai tō whakarite i tētehi wāhi iti, ā, ka pai ake te whitinga, i te wāhi e pokea ana e te taru ki tētehi wāhi e tupuria ana e te otaota māori. Ki te kore he rākau māori, he otaota māori hoki, ka noho ko aua taru tauhou hei nōhanga, hei whaitua oranga rānei mō te manu, mō te moko me te ika.

Tirohia te whārangi ipurangi Weedbusters e kitea ai ngā rongoā mō ngā taru whakapōrearea, me tono pārongo anō rānei i tō kaunihera ā-taone.





Te Kōawa o Waitete, ki Waihi. Nā Rob Davies-Colley, nō NIWA te whakaahua.

Ka tere tupu te fī kōuka, ā, he rākau pai hei whakauka i ngā tahatika.

Mā te whakatō kōwhai, karamu me te harakeke, ka whai kai ngā manu māori pērā i te tūi. Nā Dianne John te whakaahua.

## 2. Me whakatō

Ko te Ngahuru te wā pai ki te whakatō. Inā rā, ka whai wā ngā otaota ki te rarau ki te whenua, i ngā marama makariri ake, mākū ake hoki, kia rite ai mō te Raumatī. I ngā wāhi e kaha tauria ai e te hauhunga, he pai ake te tatari ki te whiore o te kaupeka kia kore ai ngā pihinga e mate.

I waenga i te Kōanga me te fīmatanga o te Raumatī te wā pai ki te whakatō otaota ki ngā wāhi tino mākū, kia heke rā anō te wai. Mā konei e kore ai ngā otaota e pukewaitia, e kawea atu rānei e ngā wai marangai o te Hōtoke.

**He kupu āwhina:** Poua ia tupu ki tētehi tūtoko. Mā konei e kitea ai e koe ā te wā e huti taru ana, ā, ka kitea hoki mehemea kua mate ētehi tupu kia pai ai tō whakatō tupu anō. Inā kē te uaua o te kite ake i te wāhi i whakatōkia ai ngā tupu ka tupuria ana e te tarutaru i te Kōanga me te Raumatī.

### Me whakatō i ēhea otaota?

Ko te huarahi pai katoa, ko te rapu i tētehi kōawa māori, i tētehi whenua pukewai rānei e tata ana ki tō wāhi. Mātakhia ngā mea e tupu māori ana i reira, ā, me whai koe i tērā tauria. I ētehi wā, ko te painga atu mehemea ka fīmata tō whakatō i ētehi otaota pakari te tupu me te waiho kia tupuria māoritia te wāhi e ētehi anō otaota i roto i te wā. Manohi anō, e pai

ana te whakatō i ētehi momo otaota 'rerekē' hei muri ake, kia rarau rā anō ngā 'otaota māori' pakari.

Ko te momo otaota pai katoa hei whakatō māu kei te āhua tonu o tō wāhi, nō reira me mātua whai i ngā pārongo o te takiwā. He kōrero ārahi e pā ana ki te momo otaota hei whakatō māu me te wā tika hei whakatō, kei tō kaunihera ā-rohe, kei te NZ Landcare Trust, kei a Te Papa Atawhai rānei.

Anei ētehi whakaaro:

**Ngā rākau me ngā otaota ka tere tupu:** te mānuka, te kāmuka, te karamu me te fī kōuka.

**Ngā otaota whakauka tahatika:** Ngā mauti, te fī kōuka, te mānatu i te whenua tāpotupotu, te karamu, te tutu\*, te tarata me te kōhūhū. (\*he rākau rore ki te kararehe me te tangata te tutu.)

**Ngā whaitua oranga mō te ika:** Ngā mauti nō te whānau kāreka, te mauti puketangata me te toetoe māori e pātata ana ki te tapa o te kōawa.

**Ngā tapa o ngā whenua pukewai:** Ngā mauti, te harakeke, te fī kōuka me te toetoe māori.

**Ngā whenua ka rite tonu te waipuketia:** Ngā mauti me te toetoe māori.

**Te poapoa manu:** te kōwhai, te karamu me te harakeke.

Hei tikanga whānui, whakatōkia ngā mauti kia 1 mita te tawhiti o tētehi i tētehi, whakatōkia ngā otaota kia 1.5 mita te tawhiti o tētehi i tētehi, ā, whakatōkia ngā rākau kia 2-5 mita te tawhiti o tētehi i tētehi. Mehemea e whakapōrearea ana ngā taru, me tata ake te whakatōkanga o ngā otaota, e raru ai ngā taru i te maru.

## 3. Me tiaki

Mā te tiaki otaota e whaihua ai te mahi whakatō. Kāore e aukatia ana te tupu o te taru i ētehi wāhi kua whakatōkia, ā, mā reira e mate ai ngā otaota maha, ka tupuria ana aua otaota e te taru matomato.

Mā te ū ki te hokihoki ki te tiaki otaota e kore ai e moumou ngā mahi whakarite, whakatō hoki ki tētehi wāhi. Me rite tonu te aukati i te tupu o te taru ki ngā whakatōkanga i ngā tahatika, i ia 3 ki te 4 tau, kia teitei, kia mātotoru rā anō hoki te tupu, e kore ai e raru i te taru. Me hoki ki te tiroiro i ngā otaota hou kua whakatōkia i ia marama i te Kōanga me te Raumatī. Mā te ringa noa iho e huhuti ngā taru i te pūtaka o ia tupu. Me āta tiaki i ngā otaota kei ngā wāhi i kaha tupuria ai e te taru i mua, kei ngā wāhi rānei e pātata ana ngā taru ka kōwaowao i ngā otaota.

Me kōkuhu tupu anō ki ngā āputa, ka mate ana ētehi tupu, kei tupuria taua wāhi e te tarutaru. Kei whaware hoki te patu kīrearea – ka pai ngā rāpeti, ngā hea me ngā pāihamu ki te fitongi i ngā tupu hou. Mā te whakarite tāwhiti, poa rānei e patua ai ngā kīrearea, ā, kei tō kaunihera ā-rohe ētehi pārongo taipitopito.

Ka tere tupu te parakipere, ā, tērā tonu pea me rite tonu te tapatapahi ā haere ake.



### Kei te hiahia pārongo anō?

He maha ngā whare whakatupu otaota māori e mōhio pū ana ki ngā momo otaota pai mō ngā whenua pukewai me ngā tahatika, māu rānei āu ake tupu e whakamakuru, e whakatō (tirohia ngā aratohu a Environment Waikato, *Planting Natives in the Waikato Region* e kitea ai he kōrero āwhina). E ako ai koe i ngā āhuatanga o ngā otaota māori, tirohia te *New Zealand Plant Conservation Network* i [www.nzpcn.org.nz](http://www.nzpcn.org.nz)

Ka kitea hoki ētehi hononga ina rapua e

koe ngā whārangi ipurangi mō te 'riparian management' me te 'riparian planting guidelines' i Aotearoa i te pae tukutuku. Tirohia ēnei: 'A Guide to Managing Waterways on Canterbury Farms' Environment Canterbury [www.ecan.govt.nz](http://www.ecan.govt.nz) 'Clean Streams' Environment Waikato's [www.ew.govt.nz](http://www.ew.govt.nz) 'Riparian Planting and Management Guidelines for Tangata Whenua' Ngāi Tahu [www.ngaitahu.iwi.nz](http://www.ngaitahu.iwi.nz) me Landcare Research riparian planting studies in the Sherry River Catchment (Tasman) [www.icm.landcareresearch.co.nz](http://www.icm.landcareresearch.co.nz)

Ētehi atu pukameka mō te ika i tēnei huinga:  
#1 Ngā ika wai māori  
#2 Ngā mahinga kōawa hei painga mō te ika  
#3 **Te whakatika i ngā tapa kōawa**  
#4 Te ika taketake i te tāone  
#5 Te ika taketake i te pāmu  
#6 Te tiaki i ngā hōpuapua  
Tikina ngā pukameka katoa i: [www.landcare.org.nz](http://www.landcare.org.nz)  
He mea whakaputa e NZ Landcare Trust 2015.  
Te Reo translation: Pānia Papa, Takatū Associates Ltd.



# Te ika taketake i te tāone

HE MAHA NGĀ ARAWAI KEI Ō TĀTOU TĀONE, KA RITE TONU TE WAREWARE I A TĀTOU, E HUNA ANA I RARO I NGĀ TAHATIKA TARUTARU, E TĀPUKEHIA ANA RĀNEI I ROTO I NGĀ KŌRERE WAI RAIMA KEI RARO I NGĀ ARA HAEREERE. E ORA TONU ANA NGĀ IKA TAKETAKE, NGĀ KURA HUNA - HEOI, E MŌREAREA ANA TAUA ORANGA. ME PĀNUI TONU E KITEA AI NGĀ MAHI HEI PĪKAU MĀU.

Te araturuki i te kōunga o te wai i tētehi kōawa i Tāmaki makaurau. Nā Janet McDonald, nō Atlas Communications & Media Ltd te whakaahua mō te Project Twin Streams.



## Ngā kōawa i te tāone kua pōkaikaha

He kino ake te āhua o ngā kōawa i te tāone i ngā kōawa ki tuawhenua mō te taha ki ngā inenga i te kōunga o te wai: te purata, ngā whakamōmona, te mahana, ngā huakita me ngā konganuku taumaha. Mā konei e iti ai te nui me te rerekē o ngā momo koiiora rōwai.

I ngā tāone, ka tūpono ngā ika ki ngā rīrapa paipa, ngā kōrere wai, ngā maero me ngā manga me ōna wai mahana rawa, kōparu, kī ana i te parakino. I ia rā ka ngaro atu ētehi kōawa i ngā mahi whakawhanake i te tāone, otirā e tino pērā ana ngā kōawa pakupaku kei te ika whenua i roto i te rohe hōpuapua. 11 kiromita te roa o ngā kōawa e paipahia ana i Tāmaki makaurau i ia tau.

- Ka rumakina ngā ika e tere ana i ngā kōawa i te tāone ki ngā matū takakino ka rere i ō tātou tuanui, i ngā tiriti me ngā wāhi hangahanga, i te hekenga mai o te ua.
- Ka paitinihia, ka kainga, ka kāpō, ka tāmia rānei ngā ika e te ranu raima, e te peita, e ngā toenga kai, e te hinu, e te penehīni, e te patu pūhekaheka, e te konganuku taumaha, e te hopi horoi waka, e te rehu patu taru, e te one hoki e kawea ana e te wai marangai.
- Ka nui te rere o te wai ki roto i ngā kōawa, ki te kaha te heke o te marangai ki runga i ngā papa mārō, pērā i te rori, i te tuanui, i te ara uru o ngā waka me ngā wāhi whakatū waka, ā, mā reira e horo ai ngā tahatika, e kawea ai te paru me te para, ka mutu, i ētehi wā ka ngawhā ngā pininga parakaingaki.

He toitoti. Nā Stephen Moore, nō Landcare Research te whakaahua.

## He kōawa tonu - ehara i te wāhi tuku para!

I mua, kua whakamahia ngā kōawa i te tāone anō he wāhi tuku para. Kua whakatōtikahia, kua keria, kua paipahia hoki e tere ai te rere o te wai marangai me te wai parapara.

Heoi anō, i ngā arawai ā-tāone:

- he nui ngā wāhi kua tupuria e te otaota māori, e te otaota rānei ka tupu i te whenua pukewai
- ka whai whaitua oranga ngā otaota māori me ngā kararehe
- ka whai ara ngā manu me ngā ngārara
- he wāhi e pārekareka ai te tangata
- ka māori ake te takoto o te whenua ā-tāone
- ka kitea ngā wāhi tapu whakahirahira ā-hītori, ā-ahurea hoki

He whakaahua ika e tata ana ki ngā manga i Kirikiriroa hei whakamahara ake i te hunga e noho ana ki reira i te hononga i waenga i ngā manga wai marangai me ngā kōawa o te tāone - me ngā whaitua oranga ika e rere ai aua wai ki roto. Nā Monica Peters, nō NZ Landcare Trust te whakaahua.



## Te whakaoranga o Okeover

Kua whakaorangia te āhua o te kōawa o Okeover, e rere ana mā Te Whare Wānanga o Waitaha. I whakatōkia anō tētehi wāhanga o ōna tahatika, e 60 mita nei te roa, ki ngā otaota māori o taua rohe tonu. I āta kōuruā ētehi toka me ētehi poro rākau i fikina ai i wāhi kē, ki roto i te kōawa e nui ake ai ngā whaitua oranga rerekē, hei whakapōturi anō hoki i te rere o te wai.

Nā Duncan Shaw-Brown, nō Te Whare Wānanga o Waitaha te whakaahua (2004).



# Te whakahoki i te ora ki ngā kōawa ā-tāone

E piki haere ana te hiahia o ētehi ki te whakaora i ngā kōawa ā-tāone. Ahakoa kāore koe e noho pātata ana ki tētehi kōawa, he rauwiringa pai kei raro i te whenua e hono ana i tō kāinga ki te kōawa e pātata ana. Kua waimarie pea ētehi o koutou i te noho pātata ki tētehi kōawa, ki tētehi awa rānei. Ahakoa tawhiti, dhakoa pātata, he maha ngā mahi hei pīkau māu, e ora tonu ai ngā kōawa.

## 1. Ko te ua anahe e rere ki te wai

- Kia tūpato te raweke i ngā matū, tae atu ki ngā peita, he wai te pūtake, me ngā hopi teretere, ā, kua rawa e tuku para whakakino ki rō kōre, ki te taha rānei o ngā kōawa.
- Wetekina te kōre i te tuanui i a koe ka horoi i tō tuanui, kia kore ai ngā matū e tomo ki ngā kōre wai marangai.
- Kua rawa e tukuna ngā otaota, ngā ika rānei nō ngā kauranga ika, ki te kōre, ki te taha rānei o tētehi kōawa - ka taupatupatu ēnei ki ngā ika taketake me ngā rērēwai.
- Kua e tuku para ki te taha o te ara - tahia ngā para mauti, kohia ngā rāpihi.

Aukatihia te rere o ēnei matū o te kāinga ki roto i ngā kōawa. Nā Monica Peters, nō NZ Landcare Trust te whakaahua.



Nā ngā kaupapa whiwhita i kōkiriha ai e te kaunihera i huri ai ngā manga wai marangai more...



...hei whaitua oranga mō ngā ika taketake (hei wāhi whaitake hoki ki te hunga noho pātata!) Nā Boffa Miskell ngā whakaahua.

## 2. E kuhu, e kuhu!

- Whakatōkia ngā mauti me ngā otaota māori ki ngā tahatika, ki ngā whenua hoki e papī ai te wai, hei maru mō ngā ika, kia whai kai hoki ai ngā ika i ngā rau me ngā ngārara ka takataka iho.
- Tukuna kia teitei te tupu o te mauti kei ngā tahatika, kia rarau rā anō ngā otaota ki reira.
- Hūtia ngā taru whakapōrearea e tupu ana i te taha o te kōawa kia kore ai e popoki.
- Tangohia ngā rāpihi i te kōawa e taea ana e tō ringa te toro, engari waiho atu ngā poro rākau me ngā toka kua ū ki reira, hei whaitua oranga mō ngā ika.
- Piri atu ki tētehi rōpū manaaki kōawa i tō rohe hei tiaki i ngā arawai kei tō rohe.

## 3. Me whai whakaaro ki ngā ika i a koe ka hoahoa

- Whakamahia ngā ara mauti, ngā pūnotinoti rānei, kua te raima, mō ngā ara-uru waka, e heke noa ai te ua ki roto ki te whenua.
- Whakatūria he kōpapa wai hei hopu i ngā wai ka rere i te tuanui, kia iti iho ai ngā wai e totō ana ki roto i ngā kōawa. Mā tēnei wai e whāngai te māra.

- Me māori te rere o ngā kōawa. Ka raru ngā ika i ngā matatara, i ngā pā, i ngā manga me ngā pekanga, waiho ki te tikanga, me whai whakaaetanga i te kaunihera mō ērā mea.

## Ētehi atu mahi hei pīkau māu:

- Me tere tonu te whakamōhio atu i tō kaunihera ā-rohe ki te kitea e koe he ika mate, he wai haunga, kōparuru rānei.
- Kua e tukuna te rāpihi ki tō kōawa, ka kino tonu te wai i ngā hikareti me ngā tūtāe kuī.

Ko Pat Williams nō te Waterways Ecology Team. Nā Abby Davidson, nō NZ Landcare Trust te whakaahua.



Mā te Reo. Me te Reo. Mō te Reo.



### Kei te hiahia pārongo anō?

Me whakapā atu ki tō kaunihera ā-tāone e mōhio ai koe me pēhea te whakapiki i te kōanga o te wai me te whakaora i ngā kōawa. Me rapu rānei i ngā kupu matua i runga i ēnei whārangī ipurangi:

**Urban stream pollutants**  
[www.northshorecity.govt.nz](http://www.northshorecity.govt.nz)  
[www.waternz.org.nz](http://www.waternz.org.nz)  
[www.bethedifference.gw.govt.nz/story2383.cfm](http://www.bethedifference.gw.govt.nz/story2383.cfm)

**Urban stream restoration**  
[www.niwa.co.nz/](http://www.niwa.co.nz/) me [www.wrc.govt.nz/](http://www.wrc.govt.nz/)

### Urban stream restoration groups:

Oakley Creek, Auckland  
[www.oakleycreek.org.nz/](http://www.oakleycreek.org.nz/)

Meola Creek, Auckland  
[www.meolacreek.org.nz/](http://www.meolacreek.org.nz/)

Waitakere Streams, Auckland  
[www.waitakere.govt.nz/Abtcit/ne/twinstreams.asp](http://www.waitakere.govt.nz/Abtcit/ne/twinstreams.asp)

WaiCare, Auckland  
[www.waicare.org.nz](http://www.waicare.org.nz)

Mangakotukutuku Stream, Hamilton  
[www.streamcare.org.nz/](http://www.streamcare.org.nz/)

Okeover Stream, Christchurch  
<http://nwp.rsnz.org/content/cant.htm>

### Ētehi atu pukameka mō te ika i tēnei huinga:

- #1 Ngā ika wai māori
- #2 Ngā mahinga kōawa hei painga mō te ika
- #3 Te whakatika i ngā tapa kōawa
- #4 Te ika taketake i te tāone**
- #5 Te ika taketake i te pāmu
- #6 Te tiaki i ngā hōpuapua

Tikina ngā pukameka katoa i:  
[www.landcare.org.nz](http://www.landcare.org.nz)

He mea whakaputa e NZ Landcare Trust 2015.

Te Reo translation: Pānia Papa, Takatū Associates Ltd.

## Te ika taketake i te pāmu

KO TĀ TE KAITIAKI PĀMU PAI, HE WHAI KIA RITE TE PAI, KIA PAI AKE RĀNEI TE PĀMU KA TUKUNA IHO E KOE KI Ō URI I TŌNA ĀHUA I TE WĀ I RIRO AI I A KOE. HE PĒRĀ ANŌ TE ĀHUA KI TE WAI E RERE ANA I TŌ PĀMU. ĀKONA ME PĒHEA E WHAI ORA AI NGĀ ARAWAI MŌ TE HUNGA KEI TE TAHA WHAKARARO O TE WAI, E WHAI HUA AI ANŌ HOKI TŌ PĀMU.

*Tētehi kōawa pāmu  
kua tika te whakatōkia.  
Nā Monica Peters, nō  
NZ Landcare Trust te  
whakaahua.*

*He kōkopu. Nā Stephen  
Moore, nō Landcare  
Research te whakaahua.*



### He painga mō te pāmu, he painga mō te ika

He rite te pāmu kāore ōna kōawa ki te ika whai paihikara – me uaua ka kitea! Ahakoa kāore pea e pērā rawa te purata o te rauwiringa kōawa, manga hoki e rere ana i ngā pāmu, kāore e kore he ika taketake, he hātaretare, he rērēwai anō hoki kei roto i aua wai. Tērā pea he whaitua whakaputa hua ngā kōawa kei ngā pāmu kei te taha moana mō te ranga matamata o reira, tērā pea he kōwaro onge kei ngā pāmu hipi kei ngā ika whenua.

Mā te whakarite kia marumaru ō kōawa, kia kaua ai e takahia e te kararehe, e tauria e te parapara me te kenepuru, me te whakarite kia tere pai ngā ika i ngā kōre, e ora pai ai ngā ika taketake i tō pāmu. Pērā i te pōpokotea a te kaikeri, he tohu pai ngā momo ika me ngā hātaretare kei tō pāmu i te ora o te wai me te pai o ngā mahi tiaki i te pāmu.

- Kaua e tukuna kia horo tō pāmu. Mā te whakatō otaota i ngā paritū, i ngā pakohu me ngā tahatika kōawa e iti iho ai te horo whenua i te pāmu, kia kore ai te kenepuru e tau ki roto i te wai.
- Wai ora, kararehe ora. Ka hora ngā pōkuhu ngaruru patu i te tangata, i te kurī me te kararehe, i te nui rawa o ngā whakamōmona i te wairākau me te parapara; i te wera o te rangi me ngā kōawa kāore e whai marumaru. Aukatihia te pōkuhu ngaruru mā te whakatū taiapa, mā te whakatō otaota hoki ki ngā arawai hei whakamātao i te wai. Ki te kore e taea te whakatū taiapa, whakatūria he waka whāinu kararehe, whakatōkia hoki he rākau whakamarumaru ki te wāhanga o runga o te pātiki, kia kore ai ngā kararehe e whakatata atu ki ngā repo me ngā kōawa.
- Tiakina te puna. He hikuwai whakahirahira ngā whenua pōharuharu e papī ai te wai me ngā puna i te pāmu mō ngā kōawa, ka mutu ka tino whaihua i ngā marama maroke o te Raumatī. Kaua e tangohia te wai o reira, whakatūria kētia he taiapa, whakatōkia hoki ki ngā maui māori me ngā harakeke, hei whaitua kaupare hei ngongo, hei whakapōturi hoki i te rere o te wai pātāua i muri i te patapataiāwhā.
- Kaua ō huamoni e riro i te kerī manga. He nui te utu o ngā mīhini kerī. Mā te whakatū taiapa me te whakatō otaota ki rō manga e raru ai ngā taru i te maru, e aukati ai hoki i te kenepuru, kia iti iho ai ō keringa i aua manga.
- Kia māmā te tuku i te hauota. Mā te waiho i ngā pīnaki e horo haere ana me ngā whenua pōharuharu e wātea ai koe ki te aro ki ngā hua e puta ai i ō whenua papai katoa. Ka heke iho te utu o te wairākau, ka penapena i te wā, i te moni me te ora o te kōawa.

*I MUA: I uru noa atu ngā kau ki te  
kōawa, ā, ka tūkinohia ngā tahatika, i  
kino hoki te wai i te para.*

*I MURI: Ka whakatūria he taiapa, ka whakatōkia  
hoki he otaota ki te kōawa, ka whakatūria he  
waka whāinu kararehe. Nā Fred Lichtwark, nō  
Whāingaroa Harbour Care ngā whakaahua.*

*He kau waiū me te hipi. Nā  
Abby Davidson, nō NZ Landcare  
Trust te whakaahua.*





## Aukatihia mā te taiapa!

Ehara te kukume kau i ngā repo me ngā arawai i ngā pō marangai o te Hōtoke i te mahi ngahau, ā, kāore hoki e whaihua ā-moni nei ina mate ngā kau, inā hoki ka ngaro tōna \$1500 i ia kau tuku waiū pai ka mate. Huri noa i te motu, e kitea ana e ngā kaipāmu, mā ngā tikanga manaaki taiapa whaihua, pērā i te whakatū taiapa i ngā arawai, ka angitu ā rātou pakihī.

Mā ngā kaunihera ā-rohe, mā NZ Landcare Trust, mā ngā kaimahi o Te Papa Atawhai rānei koe e āwhina ki te whakarite i tētehi mahere whakatō otaota.

*Ka whaihua ā-pakihī nei te whakatū taiapa. Nā Monica Peters, nō NZ Landcare Trust te whakaahua.*



*Mehemea kua kore he otaota māori i ngā tahatika, ki te āta tangohia ngā koiira o reira, ka tere tupu mai anō ngā otaota ki te tapa o te kōawa. Nā Robin Black, nō Hancock Natural Resource Group te whakaahua.*

## Te ika me te mahinga ngahere

- Kitea ai ngā ika taketake i ngā ngahere paina nā te roa o ngā wā e uka ai aua wāhi me te nui o ngā ngārara hei kai.
- Me mātua whai tāiha rākau uka, me whai maru hoki kia kore ai e mahana rawa, hei whakaruruhau hoki ā muri i te topenga o ngā rākau.
- Me mātua wātea ngā arawai hei terenga mō ngā ika - tohua ngā whakawhitinga kōre e whaihua ana, whakatikaina ērā kāore e whaihua ana.
- Me rere noa ngā mahi whakatika, whakapai hoki i ngā hanganga whakahaere waipara e kouna tonu ai te wai.

Ngā momo arawai	Te tawhiti i waenga i te taiapa me te maero
He kōre pāmu paku < e 2 mita te whānui	Whakatōkia ngā tapa o te rāwhiti me te tonga ki ngā mauti poto, waiho rānei hei mauti matomato e wātea ai ngā torohanga o te mīhini kerī, o te mīhini rehu rānei ki te toro ki te maero
Ngā whenua ka rite tonu te waipukehia, ngā whenua papahoro rānei	Whakatūria he taiapa hiko wāpoto ki tua tata atu o te wāhi ka waipuketia, kia āhua 'tawhiti' tonu i te tapa o waho o ngā piko o ngā awa
Ngā kōawa iti (e 4 ki te 5 mita te whānui) - ngā whenua rōnaki	Kia 2 ki te 3 mita ki ia 100 mita o ngā mauti pīnaki, tae atu ki te kahiwi
Ngā kōawa iti (e 4 ki te 5 mita te whānui) - ngā whenua poupu ake	10 ki te 15 mita i ia 100 mita o te pīnakitanga
Ngā kōawa nui ake / ngā awa > e 5 mita te whānui	> 5 mita, 10 ki te 20 mita mō ngā otaota kei ngā tahatika e tupu noa ana

### He pāmu hei tauira

Ka whakaatuhia e te pāmu Scott, i waho atu o Kirikiriroa, ētehi kōwhiringa hei whakahaere i ngā arawai me ētehi rongoā hei akoranga mā ngā kaipāmu, ka mutu, hei mahi mā rātou i runga i ā rātou ake pāmu.

He mea tautoko ā-pūtea te wāhi whakaatu i ngā whakatōkanga tahatika i te pāmu Scott, e DairyNZ me the MAF Sustainable Farming Fund me Waikato Regional Council. [www.dairynz.co.nz](http://www.dairynz.co.nz)

*He pakoḥu kua kore i whakamahia, kua taiapatia, kua whakatōkia hoki ki te rākau māori. Nā Monica Peters, nō Landcare Trust te whakaahua.*



*Mā te Reo. Me te Reo. Mō te Reo.*



Waikato Raupatu River Trust



Ministry for the Environment  
Kaitiaki Take Kōwhiri



NZ LANDCARE TRUST  
NGĀ MATAPOPORE WHENUA

### Kei te hiahia pārongo anō?

Tirohia "A Guide to Managing Waterways on Canterbury Farms" Environment Canterbury [www.ecan.govt.nz](http://www.ecan.govt.nz) me "Clean Streams" Environment Waikato [www.ew.govt.nz](http://www.ew.govt.nz)

He tauira rawe kei te Farm Environment Award Trust e kitea ai ngā kaipāmu me ō rātou "Winning Waterways" i [www.nzfeatrust.org.nz](http://www.nzfeatrust.org.nz)

Ki te hiahia koe ki te mōhio ki tō kaha ki te whakahaere arawai, tirohia tā Dairy NZ whārangi, "Farm for Tomorrow: How Do I Rate?" [www.dairynz.co.nz](http://www.dairynz.co.nz)

Kei te NZ Water and Waste Association ētehi kōrero mō te "Sustainable Drainage Management" i [www.waternz.org.nz](http://www.waternz.org.nz)

Te Reo translation: Pānia Papa, Takatū Associates Ltd.

Ētehi atu pukameka mō te ika i tēnei huinga:

- #1 Ngā ika wai māori
- #2 Ngā mahinga kōawa hei painga mō te ika
- #3 Te whakatika i ngā tapa kōawa
- #4 Te ika taketake i te tāone
- #5 Te ika taketake i te pāmu
- #6 Te tiaki i ngā hōpuapua

Tikina ngā pukameka katoa i: [www.landcare.org.nz](http://www.landcare.org.nz)

He mea whakaputa e NZ Landcare Trust 2015.

## Te tiaki i ngā hōpuapua

E 425,000 KIROMITA TE ROA O NGĀ AWA ME NGĀ KŌAWA I AOTEAROA HEI TIAKI MĀ TĀTOU. ME MĀTUA MAHI TAHI TĀTOU HEI HAPORI E TUTUKI AI TĒNEI MAHI. E WHAKATŪRIA ANA NGĀ RŌPŪ HŌPUAPUA, HURI I TE MOTU, HEI TIAKI I NGĀ ARAWAI, I NGĀ MAUNGA TAE ATU KI TE MOANA. ME PĀNUI TONU E KITEA AI Ā RATOU MAHI.

Whāingaroa - me whai tangata e whānui ana te titiro, me whai pūtea tika, me whai tangata kaha anō hoki hei whakaora i ngā arawai i roto i te rohe hōpuapua pēnei te whānui.

### Te whakamāherehere i ngā panonitanga

Ki te hiahia koe ki te āwhina ki te tiaki, ki te whakapai rānei i te ora o ngā kōawa i roto i tō rohe hōpuapua, anei ētehi mahi hei āwhina.

#### 1. Rangahaua te horopaki

Kōrero ki te hunga kei a rātou ngā kōrero āwhina (e rārangi ana ki te whārangi o muri) e pā ana ki:

- ngā momo ika me ētehi atu koiora (taketake, tauhou hoki) kei roto, i roto rānei i ngā kōawa
- ngā oneone o te rohe hōpuapua, te pānga mai o te waipuke, ngā otaota kua whakatōkia
- ngā whakaahua, ngā pūrongo me ngā mahere o ngā kōawa me ngā hōpuapua o nāiane, o mua hoki
- ngā hōtaka o te wā nei e whakaora ana, e tiaki ana hoki i ngā kōawa
- ngā mahi kua whakaritea mō te hōpuapua
- ngā wāhi kua tāhawahawatia, pērā i ngā maina tawhito, i ngā wāhi whakamaroke kirī kararehe, i ngā rua para, i ngā wāhi toutou hipi rānei
- ngā pūtake e tāhawahawa ai pea ētehi wāhi (ngā wāhi tango para i te wai, ngā ahumahi)
- ngā ture, ngā here rānei e hāngai ana ki ngā mahi i ngā kōawa, pērā i te whakatō otaota ki ngā tahatika me te whakahou kōrere

Te mohoao tere i te wai māori. Nā Peter Hamill, nō te Kaunihera ā-Rohe o Marlborough te whakaahua.

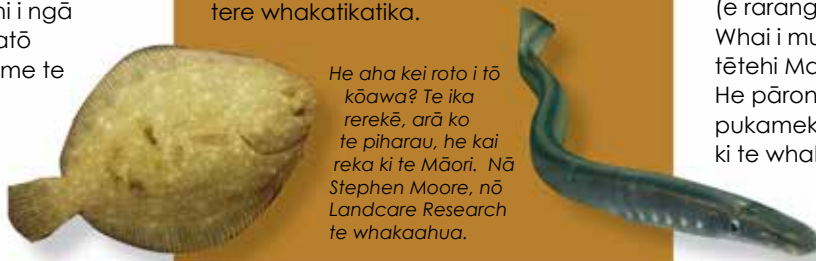
#### 2. Hīkoitia te whenua

Harā he mahere pai, he whakaahua arorangi rānei, ā, hīkoitia te roanga o tō kōawa, haere rānei mā runga waka. Tirohia, whakaahuangia, tohua hoki ngā wāhi me te āhua o ngā:

- puna, o ngā whenua e papī ai te wai me ngā whenua pukewai
- ngā kōrere, ngā matatara, ngā pā (e pai ana aua wāhi hei terenga mō ngā ika?)
- ngā hīrere, ngā tāheke, ngā ārai māori rānei e aukati ana i te terenga o ngā ika
- te horonga o ngā tahatika, te urunga o ngā kararehe, ngā wāhi kāore he marumaru kei ngā tahatika
- ngā kōawa ā-kaupeka
- ngā wāhi e whakaputaina ai pea ngā hua ika
- ngā paiapa me ngā wāhi pea e rukea ai ngā para, pērā i ngā wāhi tango para i te wai, i ngā wāhi ahumahi, i ngā rua para rānei
- ngā wāhi kua kino i te para kei reira te wai kōparu, haunga rānei, te rāpihi, ngā ika mate rānei
- ngā taru whakapōrearea

Kōrerotia ō kitenga ki te Kaunihera ā-Rohe, ā, me wawe tonu te whāki atu i ngā tohu parakino, ngā pūmate, ngā momo koiora whakapōrearea rānei me tere whakatikatika.

He aha kei roto i tō kōawa? Te ika rerekē, arā ko te piharau, he kai reka ki te Māori. Nā Stephen Moore, nō Landcare Research te whakaahua.



#### 3. Me piri tahi

Whakatūria he rōpū manaaki hōpuapua me ō kiritata me ētehi atu tāngata e hiahia ana ki te piri mai, ki te whakatakoto whāinga mō te hōpuapua. Anei pea ētehi whāinga:

- te whakapai ake i te kounga o te wai, e haumarua ake ai ngā mahi pārekareka
- te whakarite whaitua oranga mō ngā koiora rōwai me ngā manu māori
- te whakarākei i te hōpuapua ki ngā otaota māori
- te whakaora i ngā wāhi e whakaputa hua ai te matamata
- te turaki i ngā ārai e aukati ana i te terenga o ngā ika
- te whakaiti i te pānga mai o te waipuke, te ārai, te whakaiti rānei i te horo whenua
- kia auau te aro turuki i te ora o te kōawa
- te whakatū taiapa, te whakaora hoki i ngā whenua pukewai hei tātari i te kenepuru

Whakarārangihia ngā ārai e kore ai e tutuki ō whāinga, ā, kōrero ki ngā tāngata e wātea ana ki te āwhina i a koe kia tutuki ai.

#### 4. Whakaritea he Mahere Mahi

Arā noa atu ngā tāngata i te hapori hei āwhina i a koe ki te rapu rongoā whaihua (e rārangi ana ki te whārangi o muri). Whai i muri ake i tēnā, me whakarite i tētehi Mahere Mahi e tutuki ai ō whāinga. He pārongo matua kei roto i ērā atu pukameka i tēnei huinga puka e pā ana ki te whakapai ake i ngā whaitua oranga mō te ika me te whakatō otaota ki ngā tahatika.



## Te horopaki whānui

I mua rā anō, he maha tonu ngā kōawa me ngā awa o Aotearoa i rere mā te ngahere ururua, ā, nā te ngahere i uka ai te one, i maru ai te wai, i taka ai ngā rau me ngā ngārara ki roto i te wai hei kai mā te ika taketake.

I tēnei wā, kua panonitia te takoto o te whenua, ā, e rere ana te nuinga o ngā arawai mā ngā tāone me ngā pāmu. Kua kī ngā kōawa maha i te kenepuru, kua kore i pērā rawa te nui o te maru, kua kī te wai i te whakamōmona, kua pokea hoki e ngā matū tāhawahawa.

*Kei roto i ngā rōpū hōpuapua ngā kaipupuri taitara whenua, ē rātou kaitautoko me ngā kaitohutohu, e mahi ana hei painga mō te 'hōpuapua whānui', e rite ai te kounga o te wai ka rere atu i ē rātou whenua ki tērā o te wā i tae mai ai te wai ki reira. Nā Abby Davidson, nō NZ Landcare Trust te whakaahua.*

## Me tika ngā tohutohu

Kāore e kore kei ngā hunga kei raro iho nei ngā pārongo mō tō hōpuapua, me pēhea hoki te whakaora ake, ka hiahia rānei rātou ki te āwhina i a koe.

- ngā kaipupuri taitara whenua o te rohe me ngā hunga e noho ana ki reira
- NZ Landcare Trust
- ngā kaunihera ā-rohe, ā-tāone hoki
- ngā mātanga pūtaiao nō NIWA, nō Landcare Research me ngā whare wānanga
- ngā mātanga tapuhi kaiao wai māori motuhake
- ngā kura o te rohe me ngā wāhi whakatupu otaota o te rohe



## Tuhia ngā mea e kitea ai

He mea nui te aro turuki! Ka warea noatia koe ki ngā mahi whakaora, ā, ka wareware ki te tū me te arotake i ngā mea kua tutuki, ki te mātaki haere rānei kei tūpono puta mai he raruraru hou.

*Tō runga: He tohu pai ngā ngārara rōwai i te kounga o te wai - he rauemi pai te WaiCare Invertebrate Field Guide e tohua ai ngā momo. Nā Janet McDonald, nō Atlas Communication & Media Ltd te whakaahua mō te Project Twin Streams.*

*Tō waenga: Me mahi tahi koutou ko ngā mātanga ki te hiahia koe ki te hī ika me te hiko, me hī ika rānei i te pō me te rama. Nā Robin Black, nō Hancock Natural Resource Group te whakaahua.*

*Tō raro: Me whai taputapu matua hei aro turuki i te purata o te wai, i te mahana, i te hīmoemoe me te kaha kawae iahiko. E wātea ana tētehi kete SHMAK (Stream Health Monitoring Assessment Kit) hei whakamahi māu i te tari o NZ Landcare Trust i Kirikiriroa. Nā Monica Peters, nō NZ Landcare Trust te whakaahua.*

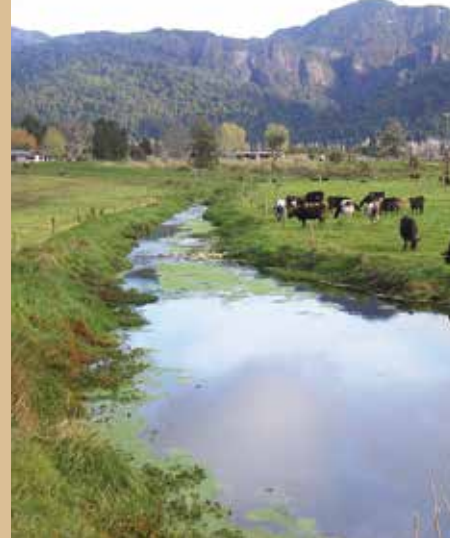
## Aorere: he hōpuapua whaiora

Ko tētehi whāinga matua o ngā kaipāmu miraka kau e 33 e noho ana i ngā tahatika o te awa o Aorere i Golden Bay, kia kawa ā rātou kararehe e whakakino i ngā mahi ahumoana i te taha whakararo o tō rātou hōpuapua.

Nā te kaha o ngā hononga o ngā whānau me tō rātou kaha ki te tiaki i te hōpuapua, tae atu ki tō rātou tōngakingaki ki te whai i ngā tikanga whakahaere whaihua katoa i runga i te pāmu, ngā take matua e angitu nei rātou. I te tau 2002, e 28 ōrau te rahi o ngā mātaitai i riro ai, ināianei, kua eke tērā ki te 79 ōrau.

Tirohia te kaupapa o te hōpuapua o Aorere ki: [www.landcare.org.nz/regional-focus/upper-south-island/aorere-catchment/](http://www.landcare.org.nz/regional-focus/upper-south-island/aorere-catchment/)

*He awa me ngā kau waiū kei te taha. Nā Gretchen Robertson, nō NZ Landcare Trust te whakaahua.*



Mā te Reo, Me te Reo, Mō te Reo



### Kei te hiahia pārongo anō?

Maori and Integrated Catchment Management  
[www.arc.govt.nz](http://www.arc.govt.nz)

### Anei ētehi taurira rawe o ētehi kaupapa o roto i te rohe hōpuapua whānui:

Motueka River Integrated Catchment Management Project  
[www.landcareresearch.co.nz](http://www.landcareresearch.co.nz)

Whaingaroa Harbourcare  
[www.harbourcare.co.nz](http://www.harbourcare.co.nz)

Lake Omapere Integrated Catchment Management  
[www.nrc.govt.nz](http://www.nrc.govt.nz)

Waihao River - Wainono Lagoon Management Strategy  
[www.ecan.govt.nz](http://www.ecan.govt.nz)

Te Reo translation: Pānia Papa, Takatū Associates Ltd.

Ētehi atu pukameka mō te ika i tēnei huinga:

- #1 Ngā ika wai māori
- #2 Ngā mahinga kōawa hei painga mō te ika
- #3 Te whakatika i ngā tapa kōawa
- #4 Te ika taketake i te tāone
- #5 Te ika taketake i te pāmu
- #6 Te tiaki i ngā hōpuapua**

Tikina ngā pukameka katoa i: [www.landcare.org.nz](http://www.landcare.org.nz)

He mea whakaputa e NZ Landcare Trust 2015.

# NGĀ ROHE HŌPUAPUA E PAI ANA MŌ TE IKA

Ngā tikanga whaihua katoa e ora rawa  
atu ai ngā ika taketake

Tiakina ngā hikuwai kua tupuria e te ngahere: whakatūria he taiapa, patua ngā kīrearea, whakaritea he kirimana mehemea kei runga whenua tūmataiti aua hikuwai.

Honoa ngā maunga ki te moana: whakaritea he ara e tere tonu ai ngā ika mā ngā ārai nā te tangata i hanga.

Whakaritea ngā whaitua oranga rerekē ki rō kōawa: he puna, he wai oruru, he wāhi terenga, he wai horomi whenua hoki.

Whakatōkia ngā tahatika ki te otaota: mā konei e tiakina ai ngā kōawa i ngā para kī ana i te whakamōmona me te kenepuru.

Whakatūria he taiapa i ngā arawai me ngā whenua pukewai: hei aukati i te urunga o ngā kararehe.

Whakaritea he kirimana e hāngai ana ki ngā whaitua oranga motuhake, e ukiuki ai te penapenatanga.

Me piri atu, me fimata rānei i tētehi rōpū tiaki kōawa ki te whakaora, ki te tiaki hoki i ngā kōawa.

Hangaiā, whakahoutia rānei ngā kōrere hei terenga mō ngā ika.

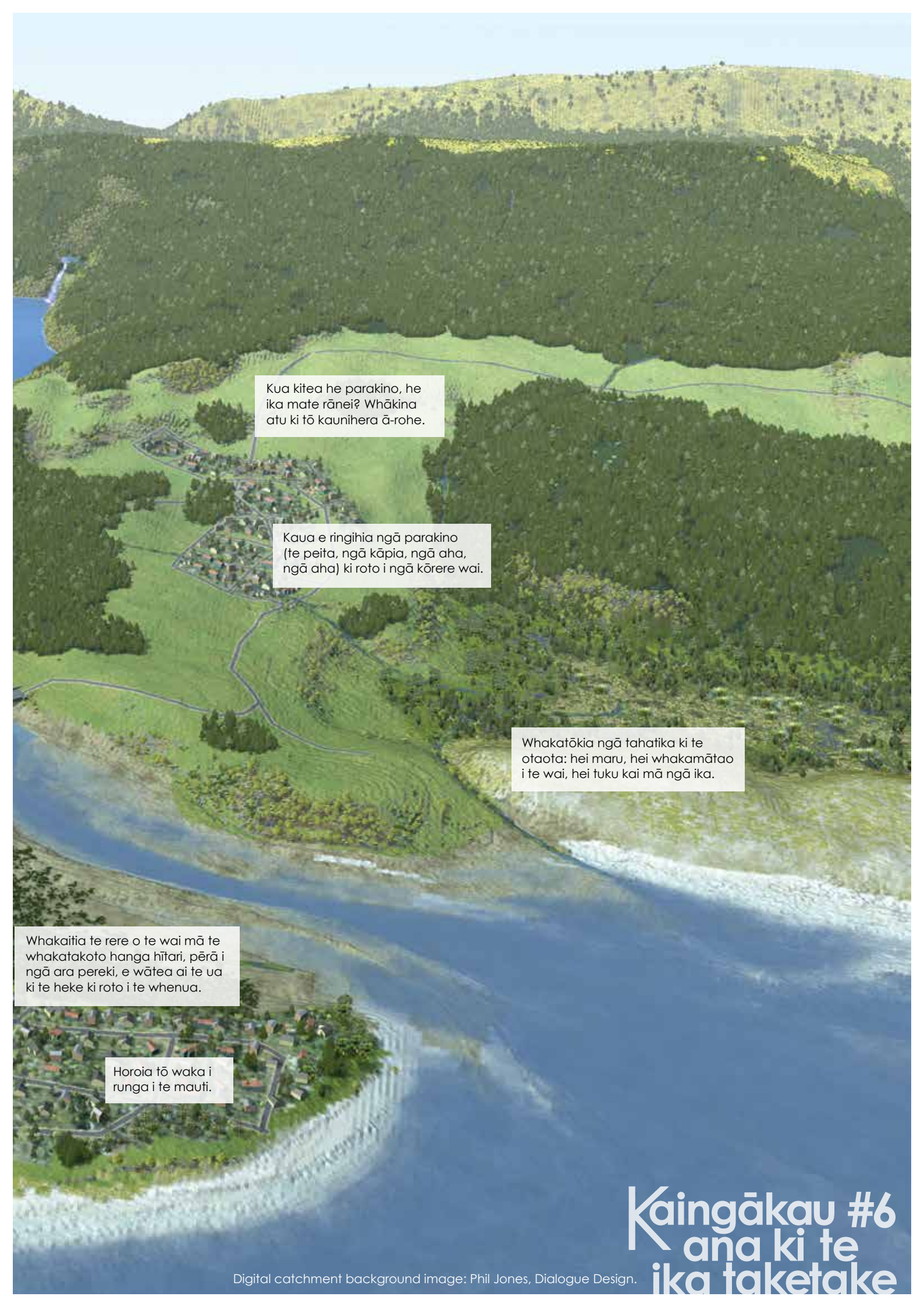
Whakatūria he pā mehemea ka raru te nui o te wai i ngā manga e pātata ana.

Whakaarohia he āhutatanga pūkaha "ngohengohe" pērā i ngā oru, i ngā māra ua, i ngā whenua pukewai i hangā e te tangata.

Whakatōkia he otaota ki ngā tahatika o ngā kōawa ki te taha moana hei whaitua oranga mō te matamata.

Kaua e tukuna ngā ika me ngā otaota nō ngā kauranga ika, ki roto i ngā kōrere wai.





Kua kitea he parakino, he ika mate rānei? Whākina atu ki tō kaunihera ā-rohe.

Kaua e ringihia ngā parakino (te peita, ngā kāpia, ngā aha, ngā aha) ki roto i ngā kōre wai.

Whakatōkia ngā tahatika ki te otaota: hei maru, hei whakamātao i te wai, hei tuku kai mā ngā ika.

Whakaitia te rere o te wai mā te whakatakoto hanga hītari, pērā i ngā ara pereki, e wātea ai te ua ki te heke ki roto i te whenua.

Horoia tō waka i runga i te mauī.

Kaingākau #6  
ana ki te  
ika taketake

## NGĀ PUKAMEKA

### MŌ TE IKA I TĒNEI HUINGA:

- #1 Ngā ika wai māori
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He mea whakaputa e NZ Landcare Trust 2010. I tāngia anō i te tau 2011. Ngā whakamāoritanga 2015.

## FISH FACT SHEETS

### IN THIS SERIES:

- #1 Our freshwater fish
- #2 Stream works for fish
- #3 Fixing your stream edges
- #4 Native fish in the city
- #5 Native fish on the farm
- #6 Caring for our catchments

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