

Whakarunga o te Awa

He mea whanake a Haerenga mā runga Awa nā Te Papa Atawhai i raro i te [New Zealand Biodiversity Strategy](#).

Te Aratohu Pouako

Mā te āta titiro ki te mataora o te ĭnanga, ka whakatakina e tēnei paetukutuku he ariā mō te koiara kanorau i ngā arawai i roto anō hoki i tētahi horopaki e hāngai ana ki te hunga tamariki.

Anei e whai ake nei, he whakaaro hei kōrerorero i rō akomanga me ētahi ngohe hei whakamahi i muri i te haerenga mā runga awa, ā, ka whakawhānui hoki i te māramatanga e pā ana ki te koiara kanorau. Kua whanaketia ēnei ngohe mō ngā ākongā e mahi ana i te kōeke 3 me te kōeke 4. Me titiro anō hoki ki te wāhanga kura i www.doc.govt.nz mō ētahi atu rauemi, ngohe hoki.

HONONGA MARAUTANGA

Ko ngā tino ariā e whā e pā ana ki te mātauranga taiao:

- › te taupuhipuhi
- › te mau tonutanga
- › te koiara kanorau
- › te noho haepapa ā-tangata, ā-pāpori

He nui hoki ngā hononga o tēnei paetukutuku ki ngā tauākī marautanga tikanga ā-iwi, hangarau, pūtaiao, Ingarihi me te pāngarau i ngā kōeke 3 me te 4.

HE RAUEMI ANŌ

Paetukutuku

<http://nwp.rsnz.org>

Ko te paetukutuku tēnei o te pūtere Arawai ā-Motu (National Waterways Project). I whakatūria tēnei kaupapa hei tuku i ngā ngohe tiroiro wai kounga rawa mā ngā kura i ngā awa, i ngā pūkaki me ngā roto o ō rātau rohe. Kei te paetukutuku he kōrero mō ngā pūtere kura, he rauemi mā ngā ākongā me ngā pouako, he pānui mō te pūtere arawai, me ngā kōrero marautanga mā ngā pouako. Kei reira hoki he hononga ki ngā rauemi mō te tiroiro i te ora o te pūkaki, ā, he pātengi raraunga anō hoki hei whakauru kōrero mā ngā kura.

www.whitebaitconnection.co.nz

Ko te Hononga Īnanga (Whitebait Connection) he hōtaka e āwhina ana i te iwi kia mārama ai, kia hou atu ai hoki ki roto i ngā mahi tiroiro i te ora o ō rātau pūkaki me ō rātau awa i ngā rā e haere ake nei. Kei te paetukutuku he puka āwhina hei kōnae PDF me ngā ngohe mē ngā tamariki.

Paetukutuku – Kawea anō

www.nzfreshwater.org/index_wildlife.html

(Kai hinengaro kararehe.)

www.nzfreshwater.org/index_main.html

(Tirohia “Threats”, ā, heke whakararo ki te kai hinengaro Clean and Green.)

Mō ngā ākongā e hiahia ana ki te whakamātau i tō rātau mōhio ki ngā ika waimāori tūturu, e rua ngā kai hinengaro i runga i te ipurangi i.

www.niwa.co.nz/edu/resources

Kei tēnei paetukutuku he hononga ki ngā kōrero me ngā rauemi e pā ana ki ngā wahapū me te wai māori, tae atu ki ngā kōpae rorohiko Tiroiro Taiao (Environment Watch), he wāhanga haere tonu o ngā rauemi mātauranga taiao hei whakamahi mā ngā rōpū hapori, mā ngā kaituku akoranga mātauranga taiao, me ngā kura tuarua. He mea whakaputa ēnei e NIWA, ā, i taketake mai i ngā hōtaka poto Tiroiro Taiao mai i te hōtaka TV3, *No. 8 Wired*.

Ngā Pukapuka me ngā tuhinga

Mō ngā ākongā e noho tawhiti ana i ngā awa hao inanga, ka whai wāhi pea ētahi wāhanga mai i ēnei pukapuka, moheni rānei hei kōrero whakataki.

Hulme, Keri (1984). “The Bone People”. Auckland: Spiral/Hodder and Stoughton.

Hulme, Keri (1993). “Bait”. *“New Zealand Geographic”*, no. 17, pp. 50–68.

Marshall, Owen, ed. (2001). “Spinning a Line”. Auckland: Random House. He kohikohinga o ngā pūrākau poto me ngā mōt-eatea mō te hī ika nā ngā kaituhi tae atu ki a Keri Hulme, Brian Turner, Patricia Grace, Kevin Ireland, me James K. Baxter.

Ko ēnei pukapuka e whai ake nei hei tohutoro mō ngā ika waimāori:

McDowall, R. M. (1990). *New Zealand Freshwater Fishes: A Natural History and Guide*. Auckland: Heinemann Reed/MAF Publishing Group.

McDowall, R. M. (2000). *The Reed Guide to New Zealand Freshwater Fishes*. Auckland: Reed Publishing.

Rīpene ataata

Underwater under Threat: New Zealand’s Freshwater Native Fish he rīpene ataata e 20 mēneti te roa e whakataki ana i ngā ika tūturu, ko ngā whakamōrea ki te ora o ērā ika, me ngā mahi ka taea e tātau hei whakamarumarū i aua ika. Whakapā atu ki tō tari ā-rohe o te Papa Atawhai ki te tono i tētahi kape.

Ngā Ngutuawa me Ngā Wahapū

MATAPAKINGA AKOMANGA

Me tīmata i tētahi matapakinga akomanga mā te tuku i ēnei pātai e whai ake nei ki ō ākongā:

- › Ki te whai i te rōpū i ngā tohutohu a Dion, arā kia haere rātau mā runga motopaika haere whenua (trailbike), ki ō whakaaro, ka pā kino tēnei mahi ki ngā kararehe me ngā tipu i runga i te oneone?
- › Ka mate ngā ika?
- › Pēhea kē te haere mā runga pahikara piki maunga?
- › Pēhea kē te haere mā raro?

Te takenga mai

Mā ngā waka whā wīra, ngā motopaika haere whenua, me ērā atu waka whenua e mōrea ai te ora o ngā kaimoana me ērā atu mea ora i te taha moana, ā, ka tuku hoki i te paru ki te moana me te pana i te parataiao ki ngā aka. Mā te kōrerorero i tēnei take e tae ai ngā ākongā ki te rangahau i te heke haere o te maha o ngā kaimoana pērā i te tuatua me te toheroa.

Ko te whakaeke pahikara piki maunga, ahakoa he āhua pai mō te taiao, ka takahia ngā tipu me ngā kararehe kōauau. Mā tēnei kaupapa e tae ai ki te matapakinga akomanga me te aromātaītanga o te wāteatanga o te taiao ki te tangata, ā, i a tātau tonu e whakamarumarua ana i te taiao.

Ngā taiao waimāori

Kōrerotia ngā āhua kē atu o ngā taiao waimāori kē atu – te wahapū, te taiwhenua, te taone, pūkaki maunga. Ka tae atu pea ngā pātai ki:

- › He aha ngā āhua kē atu o te wahapū me te awa?
- › He waitai, he waimāori rānei?
- › He aha te hiranga o te waimāori ki ō tātau wahapū?

Mō tētahi whakaaturanga o te wahapū me tētahi whakamātau ngāwari e whakaatu ana i ngā āhuatanga kikokiko o te tūtakitanga o te waimāori me te waitai, titiro ki www.niwa.co.nz/edu/resources/estuaries

Te mataora

Mā te kōrerorero i te mataora o te inanga e āhei ai ngā ākonga te kimi i tēhea wāhanga o te mataora o te inanga, ka haoa ngā inanga hei kai. He nui ngā whakaaturanga pai rawa o te mataora o te inanga, me tētahi mai i te New Zealand Native Freshwater Fish Society i www.nzfreshwater.org

Tirohia www.niwa.co.nz/rc/prog/whitebait mō ngā rongo kōrero e pā ana ki te rangahau a NIWA mō te mau tonutanga me te whakareinga o ngā tauranga hao inanga, me ngā kōrero mō te whakaora i te nohonga o te inanga, tae atu ki ngā kōrero mō te whakaora i te nohonga o te inanga, te rangahau i te nui o ngā inanga e hopukina ana, me ngā āhuatanga e tō ana i ngā ika heke ki ētahi pūkaki pū.

He Rangahau Inanga

Ka āhei pea ngā ākonga e noho pātata ana ki ngā arawai inanga te whakahaere rangahau anō mō te wā hao inanga me ngā waeture e pā ana ki tō rātau rohe. Ka kōrerorero rātau i ngā take i whakatūria ai he wā hao inanga, ā, he aha hoki ngā mahi e noho mōrea ai te inanga (te nui rawa o te hao, te tuku paru, te takahi nohonga). Ka whakaaro hoki he aha i herea ai te rahi o ngā kūpunga (kāore e whakamatea ngā inanga paku rawa, te whakatau i te rahinga o ngā inanga ka hopukia, te tuku i ētahi kia haere).

Ka kitea ētahi kōrero mō ngā waeture hao inanga i www.doc.govt.nz/Explore/Hunting-and-Fishing/index.asp

Ngā Arawai Taone

HE MATAPAKINGA AKOMANGA

Āta whakaaturia ngā āhuatanga e whai ake nei ki ō ākonga, ā, whakamahia ngā pātai kia puta ai tētahi matapakinga.

I a koe he whenua paku me tētahi pūkaki e rere ana i runga i taua whenua. I muri i tētahi ngahoro whenua, ka kite koe i tētahi paipa manga e iri ana i runga ake i te pūkaki. Ka pēhea koe?

- › Waea ki te kaunihera kia haere mai ki te whakatikatika?
- › Ka taea e te paipa manga kotahi tētahi nohonga ika te takahi?
- › He aha ngā mahi ka taea e koe?

Te takenga mai

Me āta whakaputa i te āraitanga o ngā ara heke ika e ngā hanganga paku pērā i te manga paipa, tae atu ki ngā hanganga nui ake, pērā i te matatara, nā reira e āhei ai te tangata te whakahoki tika atu. Ko te pukapuka “Fish Passage in New Zealand Rivers” he tānga pai rawa nā te Pūtahi Cawthron e wātea ana i www.cawthron.org.nz/Assets/fish_passage.pdf.

Mā te pukapuka nei ngā take ara heke ika e whakamārama me ngā mahi ka taea e tātau hei āwhina i ngā ika waimāori ki te mau tonu i ō rātau ara heke. Kua whakaputa hoki te Papa Atawhai i tētahi aratohu mō ngā kaupupuri whenua e karangatia ana “Protecting Fish Passage in Our Waterways” (Nelson/Marlborough Conservancy, Whārangī Tika No. 68, Here-turi-kōka 1998).

Te kounga o te wai me ngā hātaretare

Ki te kitea te hātaretare e hiahia ana ki te wai me te nohonga mā i roto i tētahi arawai, he tohu tērā o te arawai hauora. Ki te kitea te hātaretare e ngāwari ana ki te arawai kua whakakinotia, he tohu tērā o te arawai āhua mate. Mā te whakamātau ngāngara (te tatau hātaretare) i te pūkaki o tō takiwā e whai tikanga whakangahau ai kia aro mai ngā ākongā ki te kounga o te wai. Whāia tēnei hononga kia kitea me pēhea te whakamātau ngāngara: www.thoroughbrednet.co.nz/whitebaitconnection/Manual.asp, kātahi tāia ngā whārangī 36–40 o te kōnae. He paetukutuku pai rawa atu tēnei me tētahi pukapuka āwhina (PDF) me ētahi kōrero mō te inanga.

Whakahaeretia te whakamātau ngāngara i runga i ngā tikanga ōrite ka āhei hoki te tukuruā kia ū ai ngā hua ki ngā taumata pūtaiao. Ka āhei hoki ō ākongā te titiro ki ngā ia i te terenga o te tau, te whakatairite rānei i ngā hua ki ētahi atu akomanga, ki ētahi atu tau rānei.

Titiro hoki ki te paetukutuku o te Pūtere Arawai ā-Motu mō ētahi atu pukapuka āwhina, he whārangī ngohe, he pātengi raraunga hei whakauru kōrero mā ō ākongā, he pānui mō ngā mahi a ētahi atu kura, me ngā kōrero mō te tangata hei whakapā atu i tō kaunihera ā-rohe.

Te wai-puke manga

Ki te tokomaha o ngā ākongā “ki te kore e kitea, e kore e whakaarohia”. Pērā tonu tō rātau mārama ki te whiu i te para. Ko tētahi ngohe/haerenga mā te akomanga, he whai i te para atu i te pūtaka ki te moana. Ka taea tēnei mahi mā te whai i te hopihopi mai te horoi motokā, i ētahi atu momo para rawa, pērā i te hari i te pouaka whakamakariri ki te ruapara, i te para mai i te whare paku. Tonoa rātau kia rangahau i ētahi huarahi kē atu (te hangarua, te horoi, aha atu, aha atu) i te ringi para ki ngā manga.

Me whai whakaaro hoki ki te mea, he pūkaki noa iho te maha o ngā manga i hurihia ki raro whenua. Ko te nuinga o ēnei “manga” e rere ana i ō tātau tapa taone: arā tētahi e tata ana ki tō kura. Ka whai te akomanga i te rerenga o ngā manga me ngā awakari e tata ana ki te kura – ka puta hei pūkaki ki kō? Ka huri ngā whakaaro o te akomanga mō te manga ina kite ana rātau he pūkaki tōna āhua tūturu?

I ētahi wāhi, ko ngā manga ka rere ki tētahi pūkaki, ki te moana rānei, ka tohua ki te ika i te ara. Ki te kore e kitea tēnei āhua i tō rohe, ka tīmatahia e tō akomanga tētahi kaupapa hei tautuhi hei tohu hoki (i muri i te whakaaetanga e hāngai mai ana) i ngā manga ki te whakaputa i te rerenga o te wai.

Mai i te paru ki te mā

Pai ake te tuku i te wai hopihopi mai i te horoi waka ki te pātiti i te ringi ki tētahi manga. E rite ana tēnei tikanga ki tērā o te whenua māku. Ka mā haere te wai ina heke haere ana i ngā tipu me te oneone. He pērā anō te mātāpono o te mahi i te parakaingaki.

Ka āta mahia te wai para o te horoi waka i te pāhinu. Ko te huarahi pai rawa tēnei mō te taiao.

Mō ētahi ngohe anō me ngā whakamātau mō muri i tēnei matapakīngā, tirohia www.ew.govt.nz/forschools/teachers/classroomunits/documents/Rivers_ImpactWaterUseQual.pdf

MATAPAKINGA AKOMANGA

Āta whakaaturia ngā āhuatanga e whai ake ki ō ākonga, ā, whakamahia ngā pātai kia puta ai tētahi matapakinga.

Kei te pīrangī haere a Dion ki te whare paku. I a Rick he pepa whare paku, engari 100 mita te tawhiti o te heketua.

- › Me haere ia ki whea?
- › Ki te whakakino te hamuti kararehe i te awa, pēhea kē te hamuti tangata?
- › Tērā te pepa whare paku a te waoko – arā te rangiora ki tā Dion. Engari me pēhea, mēnā kua pūāwai? Ka whakamahia he tipu kē atu?

Mā ēnei kōrero e tae ai ki te matapakinga whānui ake mō te whakahaere i te tuku para.

Te Takenga mai

Ko te rangiora (te pepa whare paku ngahere) e karangatia ana ko te hoa “o te kaihōpara”, ā, he paku noa iho te pānga ki te taiao i te pepa whare paku. Ki te kore e wātea tētahi heketua, he pai ake te whakamahi i te rangiora i te tanu pepa whare paku. Ko te tikanga, kua e whakamahi i te rangiora mēnā kua pūāwai, nā te mea kiki ana te tipu nei i te nanamu ki te tangata i tēnei wā.

Ahako he pōpopo te para tangata, ko ngā māuiui pērā i te giardia me ētahi atu kitakita e kawea ana i te para tangata, kua nui ake te raruraru i ēnei tau tata kua hipa. Nā te tata rawa o te tiko o te tangata ki ngā wairere i uru ai ēnei māuiui ki ā tātau arawai. Me āta whakaputa i te mea, kia tawhiti rawa te tanumanga o te para i ngā arawai (e 50 mita) hei ārai atu i te kaiao pērā i te giardia.

Mō ētahi kōrero anō, tirohia te Tohu Tiaki Taiao o Aotearoa (New Zealand Environmental Care Code) i www.doc.govt.nz/Explore/NZ-Environmental-Care-Code.asp

Ngā repo me ngā whenua māku

Ko ngā repo me ngā whenua māku ētahi o ngā taiao waimāori mōrearea rawa atu i Aotearoa. Āhua 90 ōrau o ngā whenua māku taketake kua ngaro. Mā tēnei tika e tae ai ki te matapakinga me te aromātaītanga o te painga o ngā whenua māku. Ehara i te mea, nā te mea he iti noa iho te wāriu o ngā whenua māku ki te kaipāmu, ki te kaiwhakaahu rānei, kāore kē he painga ki te taiao. Ko tētahi pukapuka pai rawa e pā ana ki ngā whenua māku, e tāia ana e te Kaunihera ā-rohe o Paerangi (Horizons Regional Council). Ko tāna he whakahaere i ngā rawa taiao me ngā rawa tangata o te rohe o Manawatu-Wanganui. Ka taea te tango ā-rohohiko hei kōnae PDF mai i www.horizons.govt.nz/images/Wetlands.pdf Kei te nuinga o ērā atu kaunihera ā-rohe he rauemi e pā ana ki ngā whenua māku.

Te whakahaere i te taha awa

Ka toro ngā ākonga (tango whakaahu rānei) i ētahi arawai, ā, ka kōrerorero i te whakahaerenga o aua arawai. Ka toro hoki i te pāmu, iti noa iho te ngahere me te marumaru, ki reira inea ai i te nui o te ora o te hātaretare me ngā ika waimāori taketake, ā, ka whakatairitea ngā tukunga iho me ērā o te whenua pāmu, nui te ngahere me ngā taiapa. He nui ngā kaunihera ā-rohe e whakaputa pukapuka ana mō te whakahaere i te taha o te awa, i ō rātau paetukutuku rānei he kōrero. Nā reira e pai ana te kōrero ki tō kaunihera ā-rohe i te tuatahi nā te mea, ka hāngai pū ngā kōrero ki tō rohe. Anei he tauira e rua:

- › www.horizons.govt.nz/images/Wetlands.pdf (te rohe o Manawatu-Wanganui)
- › www.trc.govt.nz/HTMLDOCS/Infoland/21_Stmbank_man-importance/21%20Why%20manage%20streambanks.html (Te Kaunihera ā-rohe o Taranaki)

Ka whakaaro pea te akomanga mō te whakahaere pūtere whakaora taha awa ki tētahi pūkaki e pātata ana. Ko ngā kaunihera ā-rohe me te Papa Atawhai ka āhei te āwhina ki te tautuhi i ngā pūkaki i tē rohe, ā, he tautoko anō ā-pūtea, ā tangata tohunga rānei e wātea ana mō ngā pūtere whakaora a te hapori.

MATAPAKINGA AKOMANGA

Āta whakaaturia ngā āhuatanga e whai ake ki ō ākongā, ā, whakamahia ngā pātai kia puta ai tētahi matapakinga.

E hiahia ana koe ki te hī ika mai i te awa, engari kua rāhuitia te awa e te tangata whenua.

- › Ka haere tonu koe, ka whai rānei ki ngā tikanga o te tangata whenua?
- › Me aha koe, mēnā nā te toromitanga o tētahi tangata inanahi nei i rāhuitia ai te awa?
- › Me aha mēnā i rāhuitia te awa i te korekore o ngā ika e hiahia ana koe?

Te takenga mai

He nui ngā tikanga Māori e pā ana ki te hī ika. He nui hoki ngā aratohu mō ngā tikanga e wātea ana. Ki te wātea he kaumatua, tērā pea ka pōhiritia ki te kura ki te kōrerorero i ngā tikanga ki ngā ākongā. He nui ngā tikanga e ōrite ana ki ngā mātāpono tiaki taiao. Ka hiahia ētahi ākongā ki te whakatairite i ngā tikanga me ngā mātāpono tiaki taiao me te kōrerorero i te kunenga mai o aua tikanga. Ka hiahia hoki ngā ākongā ki te whakatairite i te ture e pā ana ki te rahi o ngā ika ka hopukia me ngā tikanga. Mā te toronga o tētahi māngai o te Papa Atawhai, te rōpū Fish and Game rānei hei āwhina.

Te tiwhiri

Nā te mea he huna ngā ika taketake, arā ka oho i te pō, mā te whakamahi tiwhiri e māmā ai te mātakitaki aua ika i tō rātau ake ao. Mō ētahi kōrero e pā ana ki te whakamahi tiwhiri, tirohia te pukapuka āwhina i Hononga Īnanga i www.thoroughbrednet.co.nz/whitebaitconnection/Manual.asp

Kaua e waiho mā ngā whakaritenga hauora, haumanu hoki e pā ana ki te hari haere i ngā ākongā i te pō, hei aukati i te haerenga, engari me āta whakatakoto mahere.

Kei te paetukutuku EcoWater o te Kaunihera o Waitakere he whakaahua, he rīpene ataata hoki o ngā ika waimāori taketake me ngā hātaretare. Ka āhei koe te titiro ki aua whakaahua me aua rīpene atata i www.ecowater.co.nz/11_videopics/fset_01.htm

Ngā ika rāwaho

Tonoa ō ākongā kia kohi kōrero (he whakaahua, he whakaaturanga hoki) mō ngā ika waimāori, ā, whakarōpūtia hei ika taketake, hei ika rāwaho rānei. Kōrerorerotia mēnā he painga, kāore rānei he painga o te hopu ika rāwaho ki te ngā ika waimāori taketake. Tonoa ngā ākongā kia rapu i ngā here e pā ana ki te hī taraute me ētahi atu ika rāwaho. He aha i pā ai ēnei raihana me ēnei here? (Mā te māngai o te Papa Atawhai, o Fish and Game e āwhina.) Ka rangahau rātau i te pānga o ngā ika pōrearea pērā i te gambusia me te koi carp, ki ngā ika waimāori taketake. Arā hoki ētahi tipu rāwaho e pā kino ana ki ngā ika waimāori taketake. Ka tonu pea koe i ō ākongā ki te rapu kōrero mō ēnei.

Mō ngā kōrero e pā ana ki te takenga mai o ngā ika pōrearea, arā ngā pānui whakaahua e rua e wātea ana i te Papa Atawhai: “New Zealand’s Most Unwanted Freshwater Fish” me “Ornamental Pets Can Become Monumental Pests”. Ka whakamārama te mea tuarua i ngā whakamōrea o te tuku i ngā ika rata ki te taiao. Mō ētahi kōrero anō, tirohia [www.doc.govt.nz/Conservation/002~Animal-Pests/Pest-Fish-\(Freshwater\)/index.asp](http://www.doc.govt.nz/Conservation/002~Animal-Pests/Pest-Fish-(Freshwater)/index.asp)