

ClimateWise

Te whakamahere pakihi pakari ake mō tētahi āhuarangi e hurihuri nei.



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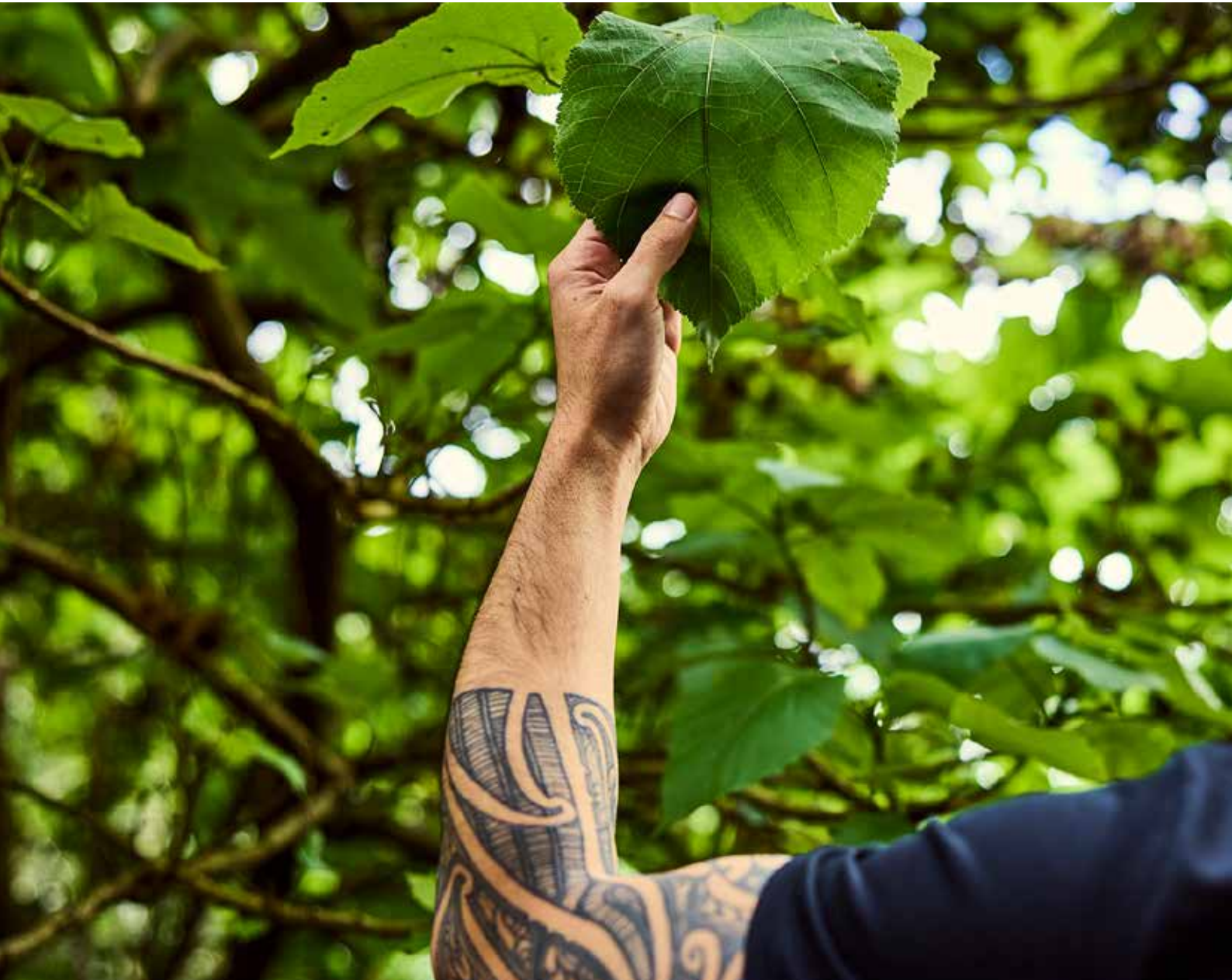


Ranginui – Papatūānuku

*Tāne Mahuta, Tangaroa, Hine Kirikiri, Ruaumoko,
Rongomatāne, Tūmatauenga.*

Te whai ao, te ao mārama

*Tuia ki te rangi, tuia ki te whenua, tuia ki te moana, tuia te
here tangata. E rongō te pō, e rongō te ao.*



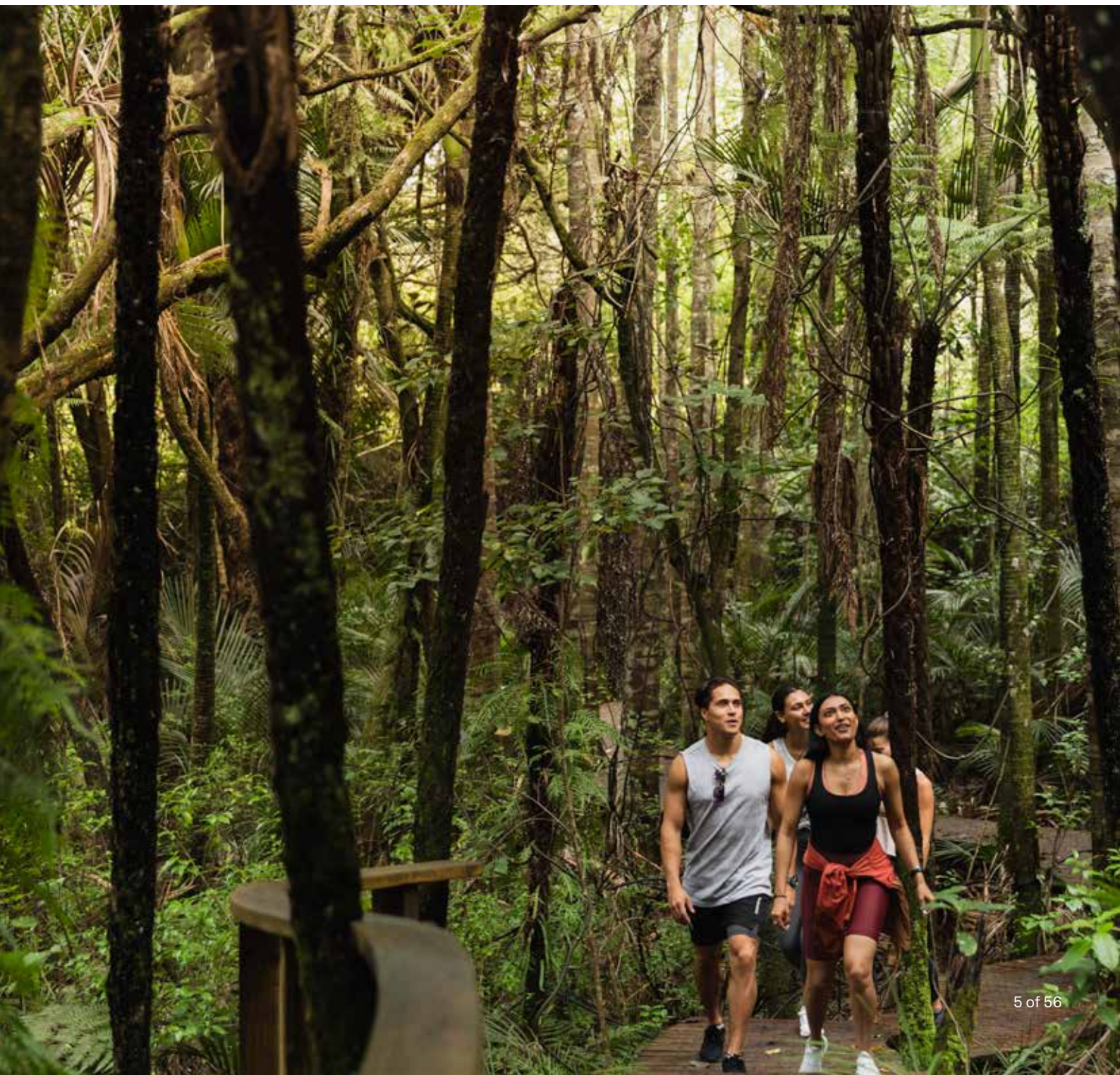
He aha kei roto

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Kupu Whakataki

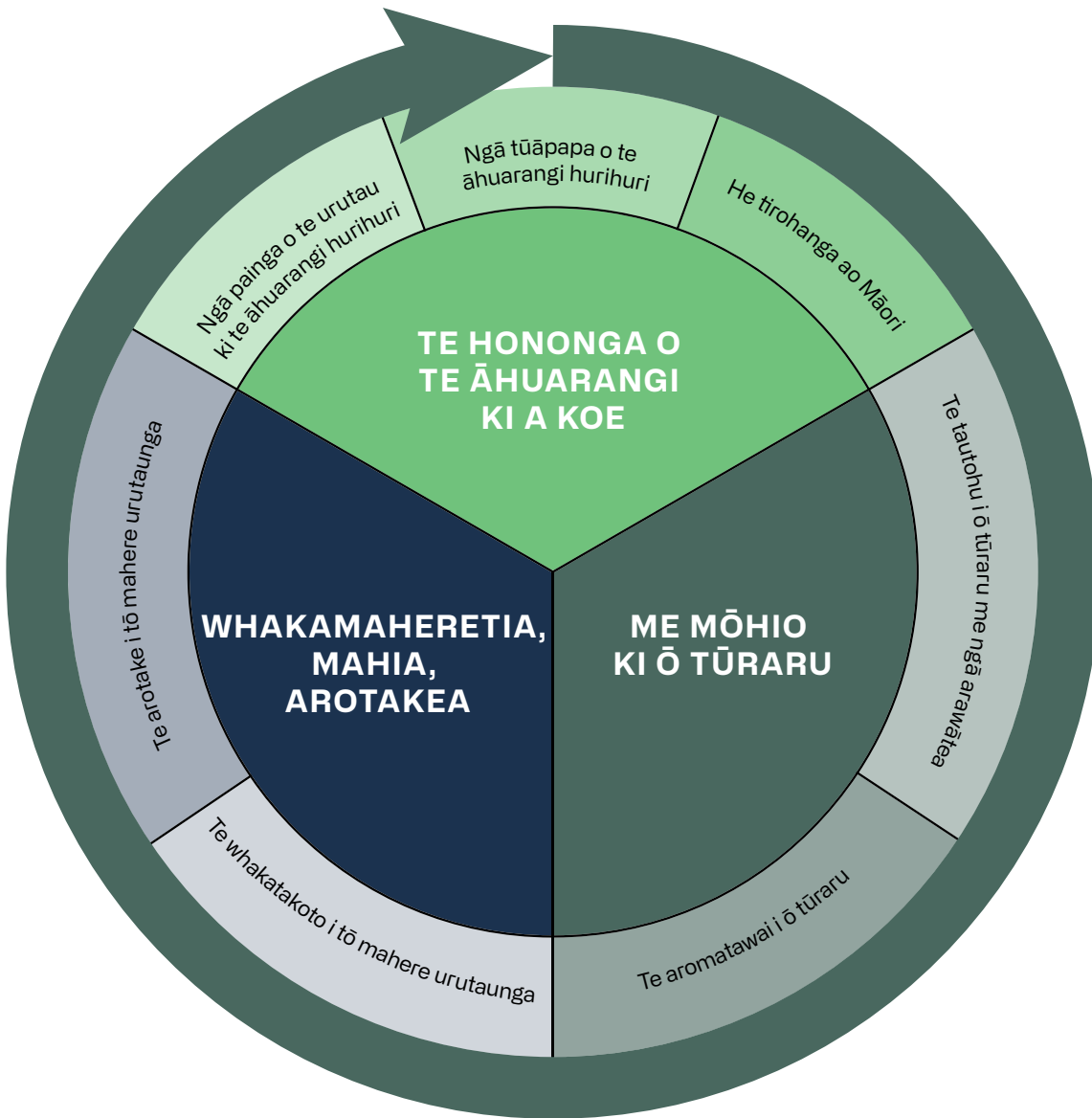
He pānga tūturu tō te āhuarangi hurihuri ki ngā pakihi me ngā hāpori huri noa i Aotearoa nei. I te mahana haere o te ao, kua auau ake, kua ngoto ake hoki te pā mai o ngā take huarere, pēnei i ngā āwhā, ngā waipuke, me ngā tauraki. Ina pāngia tō pakihi e ēnei panonitanga, ka pāngia anō hoki ō hāpori, whānau me ngā whatunga. Waihoki, ina pāngia ō hāpori, whānau me ngā whatunga, ka pāngia hoki tō pakihi. Nō reira, he waka eke noa tēnei kaupapa.

Ko te tikanga o te urutaunga āhuarangi ko te whakarite me te urupare ki ngā pānga ōkiko o te āhuarangi hurihuri o te wā nei, me ērā atu e matapaengia ana hoki. Ka āwhina te whakarite tōmua i tō pakihi kia taea ai te whakahaere ngā tūraru, te whakahaheke utu, te whakapoapoa kiritaki me ngā kaihaumi, me te whakarata i ō rātou matea. Waihoki, ka pakari ake tō ara tukutuku me tō ingoa pai hoki.



Ko te whakamahi whaihua noa i a ClimateWise

Ko te whai a ClimateWise he tuku kupu ārahi e whakahāngaitia ana ki te āwhina i a koe, hei hinonga āhua paku (SME), ki te urutau tōtika. Ka whakaurutia hoki te mātauranga Māori me ngā uara. Ka whakaratoa he māramatanga ritenga kore e tautoko ana i ngā huarahi aronga whānui.



I a koe e mahi ana mā roto i a ClimateWise, ko tāu he tautohu, he aromatawai anō hoki i ngā tūraru whai hāngai ki te āhuarangi me ngā arawātea e hāngai rawa ana ki tō pakihī me te whakatakoto i tētahi mahere haratau hei whakahaere i aua āhuatanga. I hoahoatia te tukanga kia rite ki te horopaki ahurei o tō pakihī - kāore tētahi atu e nui ake ana tōna mōhio ki tō pakihī i tōu ake mōhio!

He tukanga mau tonu te whakamahere urutaunga nō te mea ka whanake tahi tonu te āhuarangi me te pakihī. Ko tā ClimateWise he whakangāwari i tēnei hei raupapa hātepe. I a koe e mahi ana mā roto i te takanga, ko te whai a ia hātepe, a ia

hātepe, he whakapakari ake i te manawaroa o tō pakihī.

Ki te nuinga o ngā tāngata, ka iti iho i te rua haora ki te pānui i te katoa o tēnei aratohu. Engari e pai ana kia āta whakaoti mārie koe i ngā taputapu huhua i ngā kōwae ako e whai ake nei. Me tāpui wā koe mō te whakaaro rautaki.

Ka taea e koe te **tiki ake i ngā taputapu i ngā Kōwae Ako 4 - 6** hei konae e taea ana te whakarerekē

Te hononga o te āhuarangi hurihuri ki a koe





Te hononga o
te āhuarangi
hurihuri ki a koe

KŌWAE AKO 1 NGĀ PAINGA O TE URUTAU

Hei rangatira pukumahi o tētahi hinonga āhua paku (SME), ākuanei pea koe e pātai ana ki a koe anō, “he aha te painga mōku ake?” Ehara i te mea ko te whakamauru tūraru anake te painga o te urutau ki te āhuarangi hurihuri - ka pai anō hoki te pānga atu ki tō huamoni whakamutunga, tō whāomo ā-whakahaere, me tō ingoa pai. Kia hōpara tāua i te āhua o te āwhina a te urutaunga ki te āhuarangi hurihuri ki te tautoko i tō pakihī mā ngā huarahi huhua.

1. Te penapena pūtea me te whakataetae pakari ake

Mā te urutau ki te āhuarangi hurihuri ka puta pea he penapena pūtea nui mā roto i te whakaheke i ngā utu ā-whakahaere me te whakaheke hoki i ngā utuhoko inihua. Mā te whakahaere tōmua i ngā tūraru whai hāngai ki te āhuarangi, ka taea e koe te karo ngā ohore utu nui pēnei i ngā rawa i kino i te wai, i te whai rānei i te tukanga tino roa ki te tuku kokoraho inihua. He maha nga whare pūtea e tuku whakahekenga utu ana ki ngā umanga e whakahaere tōtika ana i ō rātou tūraru whai hāngai ki te āhuarangi. Ka riro hoki ēnei hei poapoa anō ki te urutau.

2 Auroatanga pakihī i whakareia

Mā te whakahaere i tō whakaraerae ki ngā tūraru whai hāngai ki te āhuarangi, me te whakatakoto i ngā mahere urutaunga pakari, ka taea e koe te whakapakari ake i te auroatanga me te manawaroa o tō pakihī. Nā reira, ka whai āheinga koe ki te whakahaere tonu, ki te whakarata tonu i ngā popono o ngā kiritaki ahakoa te pānga mai o ngā tūāhuatanga huarere taikaha me ētahi atu omo tauwhatinga whai hāngai ki te āhuarangi, me te wawao tonu i ō rere moniwhiwhi me te tiaki i te māha o ngā kiritaki.

3 Huanga pakihī

Ka taea e te urutaunga te whakawhiwhi i tētahi huanga pakihī mā te whakamanawaroa ake, me te whakakōkīki ake hoki i tō pakihī. Mā te pēnei e tauwehea ai tō pakihī i ngā pakihī o ō hoa whakataetae kāore e mārama, e whakatika rānei i ō rātou tūraru whai hāngai ki te āhuarangi. Mā te tautohu i ngā arawātea mō te auaha me te wehewehe i te māketē, pēnei i te waihangā i ngā hautaonga hōu, ngā ratonga rānei hei whakareia ake i te whāomo ā-wai i ngā tauraki, ka taea e koe te whiwhi i te ‘huanga neke tuatahi’ ki te hao i ngā tiringa māketē hōu.

4 Ngā painga mō te ingoa pai

Ka whakaatu te whakahaere tōmua i ngā tūraru whai hāngai ki te āhuarangi ki te hunga whaipānga (tae atu ki ngā kaupuri pānga, me ngā kiritaki, me ngā kaimahi ā-mua me ngā kaihaumi) kua whai whakaaro tō pakihī ki anamata, waihoki, he haepapa hoki tō pakihī. Mā te whai wāhi ki ngā kōrerorero āhuarangi me ngā koringa āhuarangi i tō hapori ā-rohe ka taea te ingoa pai o tō pakihī kia whakareia ake hei hinonga tūoho ā-taiao, takopori anō hoki. Mā konei e whakapakaritia ake ai te whakapono me te piripono o te hunga whaipānga ki tō pakihī.

5 Ka pakari ake te whakahaere i te kapewhiti

Ka taea ngā utu urutaunga āhuarangi te whakamahere i roto i te wā. I te nuinga o te wā ka āhei koe ki te āta whakapakari ake i te manawaroa o tō pakihī. Engaringari, ka nui, ka pā wawe tonu ngā utu e hono ana ki te pakaru waipuke, ki tētahi taiopenga i whakakorea rānei. Ka hua ake ngā raru kapewhiti me te aha ka uua ki te whakatutuki i ngā kurutete mātuatua pēnei i te utu i ngā kaimahi, i te hoko rānei i ngā rawa hōu.

6 Te ao Māori me te manawaroa pāpori

Mō ngā pakihī e puritia ana e ngāi Māori, ko te urutaunga e hāngai ana ki te tiakitanga ā-taiao whaihua ka tairite ki ngā uara o te ao Māori. Ka whaihua tō pakihī me tō hapori, taiao hoki i te whakamōruna ake i ngā uara ahurea e takea ana i te kōwhiri ā-tupuna me te tiaki i ngā painga mō ngā whakatupuranga ā muri ake.

7 Te urutaunga me te whakamaurutanga

Mā te urutau ki te āhuarangi hurihuri ka puta ake he arawātea ki te whakamauru i ngā pānga o tō pakihī ki te taiao (hei tauira, ko te whakaheke i te tukunga waro) Hei tauira, mā te whakatū i ngā papa hiko kōmaru e taea ai e tō pakihī te haere tonu ina tauwhatia ngā rawa pūngao, ka whakaiti hoki i te tapuwae waro whānui o tō pakihī me te whakaheke i ngā utu.



Te hononga o
te āhuarangi
hurihuri ki a koe

KŌWAE AKO 2 NGĀ TŪĀPAPA O TE ĀHUARANGI HURIHURI

E whaihua ai te whakarite mō anamata, he whaitake ki te mārama ki ngā āhuratanga o te āhuarangi hurihuri. I tēnei kōwae ako ka whakatakotoria he whakarāpopoto whānui mō te āhua o te panoni haere o te āhuarangi i Aotearoa. Ko ngā pānga ā-rohe te aronga, ā, ka riro ēnei hei āwhina i a koe ki te ako i te korahi me te hiranga o ēnei panonitanga.

He aha te āhuarangi hurihuri?

E hāngai ana te āhuarangi hurihuri ki ngā nekehanga wāroa o ngā pāmahana me ngā huringa huarere. Ko ngā ngohe tāngata, pēnei i te tahu koranehe (arā, te waro, te hinu, te haurehu) me te whakarake ngahere, ngā take mātuatua e kōkiri ana i ēnei panonitanga. Ko tā ēnei mahi he whakapiki ake i te nui o ngā haurehu kati mahana ki te kōhauhau, pēnei i te hauhā me te mewaro, ko tā ēnei he pupuri wera nō te rā. Ka waihanga tēnei i te 'kati mahana' e whakamahana ana i a Papatūānuku.

I te mahana haerenga o te ao, e titiro ana tātou te tangata ki ngā panoni tūāpapa ki ngā pūnaha a Papatūānuku. Ina koa, kua tere ake te pāpātanga o te rewa o ngā awa kōpaka me ngā toka papa. He wāhi tō aua āhuratanga i te pikinga ake o te pae moana. Ko te otinga ake o te mahana haere o te kōhauhau ko ngā tūāhuratanga auau ake, taikaha ake hoki, pēnei i ngā waipuke me ngā tauraki.

Ka pāngia anō hoki ngā huringa ā-kaupeka e ēnei panonitanga. Ka rerekē te wā mō ngā tūāhuratanga māori pēnei i te puāwaitanga me te heke. Mō te roanga atu o ngā pārongo mō te panoni haere o te āhuarangi, tirohia ngā raraunga mōrearea āhuarangi (kei raro nei).



Ngā tūāpapa o te āhuarangi hurihuri



Te hononga o
te āhuarangi
hurihuri ki a koe

Ngā mōrearea āhuarangi

He wāhanga kaikini o te whakamahere urutaunga te mārama ki te āhua o te panoni haere tonutanga o te āhuarangi tae noa mai ki tēnei wā, ā, haere ake nei. E kaha wātea ana ngā matapae ā-ao, ā-rohe hoki. Ka matapaengia ngā panonitanga i tō tātou āhuarangi.

Ko ngā mōrearea āhuarangi te ngako o ngā matapae, ā, ka whakaahuatia te panonitanga mā tōna rahi, tōna kaha, me tōna auau hoki o tētahi tūāhuratanga pā whakarere (pēnei i te āwhā, i te waipuke rānei), i tētahi tūāhuratanga pā pōturi (pēnei i te piki haere o te pae moana, o ngā pāmahana rānei).

I roto noa i te aromatawai i ngā tūraru whai hāngai ki te āhuarangi me ngā arawātea mō tō pakihī, me whakaaro koe ki ngā mōrearea āhuarangi pā whakarere, pā pōturi hoki tae atu ki ngā pakapaka, me ngā ahiniwha, me ngā waipuke, me ngā parawhenua ā-tai, me ngā āwhā, me ngā horowhenua (pā whakarere) me te piki (pā pōturi) o te pae moana.

Kua mahi tahi te Manatū Mō Te Taiao ki te taha o Taihoro Nukurangi (NIWA) hei whakarato i ngā matapae paetata huri noa i te motu. Mō ngā pārongo o te wā, me torotoro atu ki Te Manatū Mō Te Taiao.

Ko te āhuarangi hurihuri i Tāmaki Makaurau

I roto i te rautau i pahemo ake, he nui whakaharahara ngā panonitanga o te āhuarangi i pā ki Tāmaki Makaurau. Ki te mau tonu te nui o te tuku o te haurehu kati mahana, ka nui noa ake te kaha o ngā panonitanga.

Kua aro atu ngā whiriwhiringa o te wā i Tāmaki Makaurau ki ngā pānga o ngā tūāhuratanga huarere taikaha, pēnei i ngā waipuke o te Mutunga Wiki Huritau o Tāmaki Makaurau i te marama o Kohitātea i te tau 2023 me Huripari Gabrielle i te marama o Huitanguru i te tau 2023. Ko te kī a Taihoro Nukurangi, ko reira te wā mākū rawa atu nō te wā i tīmata ai ngā rekoata. I rekoatia e 539 mm te tapeke o te uanga i Rangipuke i te raupapa ua i te Pokapū o Tāmaki Makaurau, ā, i wāhia e tērā te rekoata o mua o te 420 mm i rekoatia i te marama o Huitanguru i te tau 1869.¹

Ki te titiro whakamua, tērā te tūpono ka pāngia a Tāmaki Makaurau e te:



- **Pikinga ake o te nui o ngā rā wera:** I tēnei wā, tōna 20 rā i ia tau ka rongu tātou i ngā pāmahana e nui ake ana i te 25°C. Hei te mutunga o te rautau, ka piki ake pea tēnei ki te 70 rā mēnā ka noho te tukunga ki ngā taumata o te wā nei, ā, i roto i te 100 rā i raro i tētahi pūāhua tukunga tairanga.



- **Pikinga ake o te uanga taikaha:** Ka kaha ake tā te kōhauhau mahana pupuri ki te haumākū. Ko te otinga ake pea ko ngā tūāhuratanga uanga tātā ake, poto iho hoki. E matapaetia ana ka piki ake ēnei āwhā onge, ngoto hoki, mā te 14 ōrau mō ia tākiri, mō ia tākiri o te mahana haere.

Mā te mārama ki ēnei matapae koe e āwhinatia ai kia whakaneinei atu ki ngā uauatanga me ngā arawātea kei tua i te awe māpara mō tō pakihī, me te aha, ka āhei koe kia tōtika tō whakamahere. Heoti, kāore i te kaikini te mārama ki ngā taipitopito o ēnei matapae ina tahuri atu koe ki te tīmata i tō whakamahere urutaunga. Mehemea kei waho atu koe i Tāmaki Makaurau, ko tētahi wāhi tino pai ki te tīmata ko ngā matapae āhuarangi a Te Manatū Mō Te Taiao. [Ministry for the Environment's climate projections](https://niwa.co.nz/news/auckland-suffers-wettest-month-history)








¹ NIWA (2023). Auckland suffers wettest month in history: <https://niwa.co.nz/news/auckland-suffers-wettest-month-history>

Ngā tūāpapa o te āhuarangi hurihuri



Te hononga o te āhuarangi hurihuri ki a koe

Ngā matapae āhuarangi mō Tāmaki Makaurau (i raro i ngā pūāhua tukunga tairanga)

Mōrearea āhuarangi	Wā pae tīmata ²	2040 ³	2090
 Ngā pakapaka (rā wera)	19.7 ngā rā wera. ⁴	47 ngā rā wera (>25°C)	100 ngā rā wera (>25°C)
 Ngā Ahi niwha⁵	Kāore e hāngai	<ul style="list-style-type: none"> te pikinga o te Whakatauranga Pākaha ā-Kaupeka (SSR)⁶ Tino tairanga, taikaha hoki Ka piki ake mā te 40%-50% te mōrearea ahi nehenehe 	<ul style="list-style-type: none"> Ka piki ake te SSR mā te 10-30% Tino tairanga, taikaha hoki Ka piki ake te mōrearea ahi nehenehe mā te 50-100% i te rohe o Tāmaki Makaurau i te raki o te kūititanga o te whenua. Ka piki ake mā te 40-50% ki te tonga o te kūititanga o te whenua
 Te waipuke me te uanga taikah	100 tau te ARI (Wā Hohokitanga ā-Tau), hōhonu āwhā 24 haora, 176mm	100 tau te ARI, hōhonu āwhā 24 haora, 189mm	100 tau te ARI, hōhonu āwhā 24 haora, 215mm
 Piki pae moana (te kino haere ake o te whakaparawhenua ā-tai)	Kāore e hāngai	Ka piki ake mā te 0.3 mita	Ka piki ake mā te 1.2 mita
 Ngā āwhā	E 9 ngā huripari i ia 10 tau	Ka piki ake te pakari, ka heke iho hoki te auau o ngā huripari pārūrū o mua	Ka piki ake te pakari, ka heke iho hoki te auau o ngā huripari pārūrū o mua
 Tauraki	<ul style="list-style-type: none"> E 225mm- 375 mm mō ia tau te mauranga tōmiti pitomata (PED) 237⁷ ngā rā maroke i ia tau 	<ul style="list-style-type: none"> 60-100 mm te pikinga o te PED E 3-9 rā maroke anō mō ia tau Ka piki ake mā te 1% te pīpīwai ā-pānga i ia tau 	<ul style="list-style-type: none"> 100-140 mm te pikinga o te PED 12-21 rā maroke mō ia tau Ka heke iho te pīpīwai ā-pānga i ia tau i te 2% makere iho mō te nuinga o te rohe
 Ngā Horowhenua	Kāore e hāngai	Mā te piki ake o te pakari o ngā tūāhutatanga uanga tātā ka piki ake te auau me te pākaha o ngā horowhenua	Mā te piki ake o te pakari o ngā tūāhutatanga uanga tātā ka piki ake te auau me te pākaha o ngā horowhenua

Hei whakamārama: I tīkina atu ngā raraunga matapae i te Auckland Economic Climate Change Risk Assessment⁸ me Te Tai Pari o Aotearoa⁹

² He toharite te wā pae tīmata, e whakawhirinaki atu ana ki te taurangi āhuarangi, e takea ana i ngā raraunga o mua. I te nuinga o te wā nō te tau 1995

³ He toharite ngā matapae o te 20 tau mai i 2031-2050

⁴ Ko ngā rā e neke ake ana te pāmahana i te 25°C

⁵ E whaipānga ana ngā matapae mō te ahiniwha ki te pae tīmata i 1980-1999, ā, e aro ana ngā wā 20 tau ki 2050 me 2080

⁶ He toharite te Whakatauranga Pākaha ā-Kaupeka (SSR) o te Whakatauranga Pākaha ā-Rā (DSR). Ka rekoata tēnei i ngā pānga o te maroke ā-hau, ā-korahinu ki te ngoto pitomata mō te kā mai o te ahi. Nō reira, e whakaawe ana ēnei i te uaua me te nui o te mahi e matea ana ki te tīnei ahi

⁷ Ngā rā ka iti iho i te 1mm te uanga

⁸ E takea ana te Arotakenga Tūraru mō te Āhuarangi Hurihuri mō Tāmaki Makaurau i te Aromatawai Tūraru Āhuarangi Hurihuri tōmua i mahia i 2020. He āpiti mātauranga tā te Aromatawai Tūraru Āhuarangi Hurihuri ki ngā tūraru āhuarangi hurihuri i oti kē te tautohu i te Kaunihera o Tāmaki Makaurau. Ka whakaarohia ngā tūraru me ngā arawātea ka hua ake i ngā mōrearea āhuarangi hurihuri ōkiko me ērā e hua ake ana i te whakawhitinga ki tētahi ohaoha waro iti. Kua whakaurutia ngā tūraru ōkiko huri noa i ngā rāngai ohaoha kai me te inu, me te hangahanga, tae atu ki te rāngai kiriata me te naumai

⁹ Te Tai Pari o Aotearoa (n.d.). Ngā mahere matapae piki pae moana: searise.nz/maps-2

Ngā tūāpapa o te āhuarangi hurihuri



Te hononga o
te āhuarangi
hurihuri ki a koe

He aha e whakahirahira nei te āhuarangi hurihuri ki a koe

He whaitake ki te whakamahere tōtika me te urutaunga te mārama ki te hiranga o te āhuarangi hurihuri ki a koe, ki tō whānau me tō pakihī.

Ka pāngia ngā wāhanga huhua o tō tātou tauoranga i te pae kiritahi me te hapori, tae atu ki te taiao e noho ana tātou, me ngā pakihī e whakahaerengia ana e tātou.

Ko te kōwhiri i ngā tūraru whai hāngai ki te āhuarangi hei whakatika māu ka whakawhirinaki ki ngā āhuatanga e uaratia ana, e whakamātāmuatia ana hoki e tō pakihī. Hei wāhi tīmata pea mōu ki te mārama ki ngā āhuatanga e akiaki ana i a koe ki te urutau ki te āhuarangi hurihuri ko te arotake i tō rautaki pakihī, i tō tauākī uara rānei. Waihoki, mā reira pea e kītea ai mehemea tō tikanga mahi o te wā nei e tautoko kē ana i tō manawaroa.



Te Hauora me te Oranga

Ka pā atu te āhuarangi hurihuri ki ngā tāngata takitahi me tō rātou whānau mā te pā atu ki tō rātou kātū noho, panuku, noho haumarū, hauora me te oranga, me te wheako ki te taiao māori. Ka taea e ngā tūāhuatanga huarere taikaha te pākarukaru ngā kāinga. Ko ētahi tauira o ēnei momo tūāhuatanga ko ngā waipuke me ngā huripari. I ētahi wā, ko te tukunga iho ko te kāingakoretanga o ngā whānau, me te whakamōreatanga o tō rātou haumarū.

Ka pā anō hoki te āhuarangi whakarerekē ki te hauora o te tāngata takitahi me te whānau. Nō te āhuarangi hurihuri, e tukipū haere ake ana ngā take hauora e pā ana ki ngā mate whai hāngai ki te wera, me ngā māuiui e kawea ana e ngā pere. Ka pā porowhahengia hoki te hauora o ngā tāngata takitahi me ngā whānau e te tauraki, e ngā tūāhuatanga uanga tātā hoki. E rua, e rua ka pā i te wātea me te kounga o ngā wai.

I tua atu i te hauora ā-tinana, ka auroa tonu pea ngā pānga o te whai wheako ki ngā aituā whai hāngai ki te āhuarangi ki te hauora hinengaro, me te manawaroa o ngā whānau. Waihoki, ka pēnei anō hoki mō te peinga o ngā tāngata i ngā taiao taunga. Hei āpiti, ka pāngia anō hoki ngā mahi a te rēhia me ngā tikanga ā-ahurea e whaitake ana ki ngā tuakiri o ngā tāngata i te ngaronga o te kanorau koiora me ngā nōhanga māori.¹⁰

¹⁰ Te Manatu mō te Taiao (2021). Arotakenga Tūraru mō te Huringa Āhuarangi o Aotearoa environment.govt.nz/publications/national-climate-change-risk-assessment-for-new-zealand-main-report

Ngā tūāpapa o te āhuarangi hurihuri



Te hononga o te āhuarangi hurihuri ki a koe



Ngā hīraunga o te āhuarangi hurihuri

Mō ngā pakihī, ka whakatakoto te āhuarangi hurihuri i ngā whakatatara me ngā arawātea huri noa i te huhua noa o ngā rāngai. Tērā te tūpono ka tauwhatia ngā ara tukutuku e ngā tauwhatinga i ngā huringa huarere, ka piki ake ngā utu whakahaere, ka pāngia anō hoki te popono ā-kiritaki. Ka pā tokitokitia ngā SME e te pikinga ake o ngā putanga mai o ngā huarere taikaha.

Mai i te pākarukaru ki ngā tūāhanga mātuatua tae atu ki te pikinga o ngā utuhoko inihua te whānuitanga o ēnei pānga.¹¹

E tino whakaraerae ana ngā pakihī e whakawhirinaki ana ki ngā rauemi māori, pēnei i te ahuhenua, te mahi ngahere me te rāngai tāpoi, ki ngā tūraru whai hāngai ki te āhuarangi. Hei tauira, ka taea ngā panonitanga ki ngā huringa huarere te tauwhati i ngā mahi whakaputa ahuhenua. Ko tōna otinga ake ko te pāhekeheke o te kai me te pāhekeheke ohaoha mō ngā SME e mahi ana i te rāngai ahumatua.¹²

Engari, ka taea e te āhuarangi whakarerekē te waihanga i ngā arawātea māketē hōu me te whakarei ake i te wairua whakataetae. Ka heke iho ngā tūraru āhuarangi i te whakawhanake i ngā tikanga pakihī toitū, pēnei i te whakapakari i ngā huarawa me te waihanga i te putuputunga ngao ringaora me te whakamahi i ngā hangarau pare raru āhuarangi. Ko tētahi atu huanga o ēnei ka whakamaneatia ngā kiritaki tūoho ki te taiao.

Te mahi tahi me te manawaroa ā-hapori

E matea ana te mahi tahi me te tū ā-kiritōpū i ngā taumata hapori, ā-motu, ā-ao hoki mō te whakatika i ngā uauatanga o te āhuarangi hurihuri.

Ka taea e ngā kaupapa ā-hapori, pēnei i ngā hōtaka whakarite mō te aituā me ngā whakamataaratanga mātauranga āhuarangi te whakamana i ngā tāngata takitahi me ngā whānau me ngā pakihī ki te whakapakari ake i tō rātou manawaroa, me te urutau ki ngā āhuatanga e panoni haere ana.

Hei āpiti, he whitake kia mahi tahi te ahumahi ina whakaaro ki ngā mahinga urutaunga ki te whakatika i ngā tūraru nui whakaharahara pērā i ngā tūraru ki ngā ara tukutuku.

I te taumata hapori, ka taea e ngā pakihī te whai wāhi atu ki tētahi tūnga whānui ake hei ārahi i te mahinga āhuarangi mā te pāhekoheko ki te hunga whaipānga me te kōkiri i ngā panonitanga ki ngā kaupapahere e tautoko ana i te manawaroa āhuarangi. Ka taea hoki e ngā pakihī te tū i tētahi tūnga whitake ki te ārahi i ngā mahinga āhuarangi mā te whakauru i te toitūtanga ki ā rātou whakahaerenga, te pāhekoheko ki te hunga whaipānga, me te kōkiri i ngā panonitanga ki ngā kaupapahere e tautoko ana i te manawaroa āhuarangi.

Mā te mahi tahi, ka taea e ngā tāngata takitahi me ngā whānau me ngā pakihī ki te waihanga i tētahi anamata toitū ake, manawaroa ake mō rātou ake anō me ngā uri whakaheke.



^{11,12} Tatakī Auckland Unlimited (2021). Tāmaki Makaurau Economic Climate Change Risk Assessment: [knowledg Auckland.org.nz/publications/tamaki-makaurau-economic-climate-change-risk-assessment](https://www.knowledgeauckland.org.nz/publications/tamaki-makaurau-economic-climate-change-risk-assessment)



Tēnā, āta huritaongia

Mā te whai whakaaro ki ēnei take ka nui tō mārama ki ngā kōrero i tēnei kōwae ako.

- Kua pā pēheatia koe e ngā tūāhuatanga whai hāngai ki te āhuarangi?
- Kua pā pēheatia tō pakihi me tō whānau?
- Ka taea e koe te mahara ki ētahi tauira i mahi tahi ai tō hapori ki te tūwhiti i tētahi uauatanga? Tērā pea he tūāhuatanga aituā, he tūāhuatanga rānei e whai hāngai ana ki te KOWHEORI-19. I pēhea tā koutou mahi tahi ki te tūwhiti i tēnei uauatanga? Ka pēhea ēnei akoranga e āwhina ki te whakapakari ake i te manawaroa o te hapori ki ngā tūāhuatanga āhuarangi?

Ka riro pea hei āwhina ki te āta matapaki i ēnei take katoa ki tō kāhui whakahaere, ki ō hoa ohu rānei. Nō te mea, e tinga ana kua rerekē te pā ake o ngā tūāhuatanga o mua ki a koutou, he rerekē nō ō koutou tūnga i tō pakihi. (Whakamahia ō whakautu ki konei hei āwhina ki te whakaoti i te taputapu tautohu i ngā tūraru me ngā arawātea whai hāngai ki te āhuarangi i a Kōwae Ako 5.)

Mō te roanga atu o ngā pārongo

Kei te hiahia ahau he pārongo anō e pā ana ki...	Rauemi	Whārangī
Te āhua o te panonitanga o te āhuarangi huri noa i Aotearoa	Arotakenga Tūraru mō te āhuarangi hurihuri o Aotearoa¹³	37
	Ngā mōrearea āhuarangi hurihuri ā-rohe kua whakapaetia¹⁴	Kāore e hāngai
Te āhua o te panonitanga o te āhuarangi huri noa i Tāmaki Makaurau	Tāmaki Makaurau Economic Climate Change Risk Assessment	8
	Ngā matapae mō te āhuarangi hurihuri o te rohe o Tāmaki Makaurau me ngā pānga¹⁵	Ngā whārangī katoa
Te āhua o te pā mai o te āhuarangi hurihuri ki a ngāi Māori	He huringa ā huarangi he huringa ao: a changing climate, a changing world	Ngā whārangī katoa
Ngā tūraru āhuarangi hurihuri tāpua tino 10 o Aotearoa	Arotakenga Tūraru mō te Huringa Āhuarangi o Aotearoa	9
Ngā tūraru ohaoha i te āhuarangi hurihuri o Tāmaki Makaurau	Tāmaki Makaurau Economic Climate Change Risk Assessment	Tīpoka whānui mā te kāhui whakahaere

¹³ Ka whakaaturia e tēnei pūrongo ngā kitenga o te Arotakenga Tūraru mō te Huringa Āhuarangi o Aotearoa tuatahi (NCCRA). Ko tā te aromatawai tūraru he whakaatu i tētahi whakaahua ā-motu mō te āhua o te pā torohū o ngā mōrea whai hāngai ki te āhuarangi ki Aotearoa.

¹⁴ Auckland Council and Council-controlled organisations commissioned NIWA to analyse projected climate changes for the Auckland region and potential impacts of climate change on some of Auckland's environments and sectors. This report addresses expected changes for 21 different climate variables out to 2120 and draws heavily on climate model simulations from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report. Potential climate change impacts on important environments and sectors in the Auckland region are discussed

¹⁵ I tono te Kaunihera o Tāmaki Makaurau me ngā Kaiwhakahaere kaupapa kei raro i te maru o te Kaunihera i a NIWA ki te tātari i ngā panonitanga o te āhuarangi e matapaetia ana mō te rohe o Tāmaki Makaurau me ngā pānga pitomata o te āhuarangi hurihuri ki ngā taiao o Tāmaki Makaurau me ngā rāngai. I hāngai ngā kōrero o tēnei pūrongo ki ngā panonitanga e matapaetia ana mō ngā taurangi āhuarangi e 21 tae noa atu ki te tau 2120. Ka rahi tāna whakamahi i ngā whaihangā whakatauirā āhuarangi nō te Pūrongo Aromatawai Tuarima a Te Paewhiri Tāwhana Kāwanatanga mō te Āhuarangi Hurihuri (IPCC). Ka matapakihia ngā pānga āhuarangi hurihuri ka pā pea ki ngā taiao whai tikanga me ngā rāngai i te rohe o Tāmaki Makaurau



Te hononga o
te āhuarangi
hurihuri ki a koe

KŌWAE AKO 3 HE TIROHANGA AO MĀORI

Mō ngā SMEs e whai ana ki te whakatinana i te toitū wāroa mā te whakamahere urutaunga, he mea nui kia mōhio ki tā te ao Māori titiro ki te āhuarangi hurihuri. Ka kōkūhuna e tēnei kōwae ako ngā mātāpono mātūatua me ngā uara e puritia ana e ngā Māori maha, tae atu ki ērā e whakahaere pakihia ana, e mahikuhu ana rānei.

Te Tironga Māori – he tirohanga ahurea

Pērā i ētahi atu ahurea taketake, he hītori auroa o te urutau ki ngā panonitanga taiao tō ngāi Māori. I te horopaki o te whakamāherehere urutaunga āhuarangi he whaitake ki te āhukahuka i ēnei tikanga.

Waihoki, tērā anō hoki ētahi āhuatanga o te āhuarangi hurihuri ka rerekē pea te pā ki a ngāi Māori, ahakoa mā ngā hono ki te whenua me te taiao, mā ngā momo mahi rānei e ārahi ana i a ngāi Māori, e whai mahi ana rānei pēnei i ngā ahumahi mātāmua, i te hangahanga rānei. Ka tino whakatōmenehia ētahi o ēnei tūraru i a He huringa āhuarangi he huringa ao: [a changing climate, a changing world](#).

Mātauranga Māori – te mātauranga tuku iho o ngāi Māori

He māramatanga whaipanga tō te Mātauranga Māori ki te mārāma, ki te urupare anō hoki ki te āhuarangi hurihuri.

Kua tukuna iho tēnei mātauranga i roto i ngā whakaturanga, ā, ka whakaurutia ngā kitenga o ngā panonitanga i te taiao me ngā huringa.

Nō mai rānō, kua mātāi, kua rekoata anō hoki a ngāi Māori i ngā tohu i te taiao e tohu atu ana ki ngā panonitanga i te taiao. E kitea ana ēnei tohu i ngā whanonga a ngā tupu, ngā kararehe me ngā huringa huarere. Hei tauira, ko te wā e heke ana ngā manu, te puāwai mai o ētahi tupu. Kua taumano te whakamahia o ēnei hei waitohu i ngā huringa ā-kaupeka. Ka hāngai ēnei kitenga ki ngā kitenga pūtaiao o mohoa nei.

Waihoki, e whakarato ana ēnei i tētahi orotau torowārahi i te āhuarangi hurihuri.

I te nuinga o te wā, ka arotahi te mātauranga ki te āhua o te whātuitanga o ngā koiroa katoa me te hiranga o te rauhi i ngā mea katoa e noho ana i te taiao. Hei tauira, e whai tikanga ana te toitūtanga o ngā rauemi ki ngā uara Māori me ngā mātāpono, ā, tērā te tūpono ka ārahi ēnei i ngā pakihia e puritia ana e ngāi Māori. Mō te taha ki te mauri roa o ngā pakihia, ka whakamātāmuatia te tiakitanga me te whāomoomo o te taiao (arā, te taiao māori) ki mua noa i te huanga wāpoto.

Ko ngā mātauranga hei ako mā tātou i te ao Māori

Ko te amorangi ki mua, ko te hāpai ō ki mua

Ka tū te rangatira ki mua, kei muri ko ngā kaimahi hei tautoko

E whakamihia atu ana tēnei whakataukī ki te hiranga o te whakamahere me te whakarite. Ka kōrero hāngai tonu atu ia ki te matea o ngā kaimahi hei kaitautoko, e angitu ai te rangatira kei mua. I te nuinga o te wā ka whakaata ngā uara pakihia i ōu ake mātāpono whaiaro, ahurea anō hoki. Ko ngā uara pakihia e kauawhitia ana e tō SME ka āwhina i a koe ki te kōwhiri i te huarahi ka whāia. Ka whakaaweawe hoki aua uara i te āhua e whakaraupapatia ana ngā kōwhiringa, ā, ko ēhea kōwhiringa e whakaarotia ana he tika, he whai tikanga hoki.





Mātāpono

Mātāpono	Whakaarohanga
Taurite	He mea nui te tiaki i te taurite i ā tātou kurutete katoa hei rangatira o ngā SME. Waihoki, ka whakaarohia e ā tātou tikanga pakihi te āhua e pā atu pea tātou ki te taiao. He whakaarohanga matua tēnei. Ka hāngai anō hoki te taurite ki te āhua o tā tātou whakarite ka āwhina i ō rautaki pakihi, kōwhiringa hoki ki te whakatutuki i tētahi whakarato toitū o ngā ratonga, ngā hautaonga, ngā kiritaki hoki/rānei.
Utu (tauutuutu, utunga me te whakaeanga)	He whakaarohanga matua tēnei ki te nui o te tukumuri a tō pakihi i te taiao me ngā hapori e mahi ana koe mā ō kohakoha pakihi. Hei uara, e whakamahi atu ana te tauutuutu he haepapa tō tātou ki te whakarite ka tiakina tō tātou taiao kia hauora tonu.
Whanaungatanga (ngā piringa me te whakawhanaunga)	E whaitake ana ki te angitu o te pakihi te whakawhanaunga atu a ngā rangatira pakihi ki ngā whānau, ngā mema o te hapori me ngā kiritaki. Mō te taha ki te urutaunga, ko te kaha o tō whatunga pakihi ki te āhei atu ki te tautoko, ki ngā pārongo, ki ngā pūkenga, ki ngā whatunga i anamata me te raukaha, katoa katoa e whai tikanga ana ki ngā tohuine angitu pakihi.
Manaakitanga (te whakatinana i te ohaoha, te tiaki, te tautoko, te taurima rānei)	He mea nui te raukaha o tō pakihi ki te komokomo ki ō tikanga i te manaakitanga ki tātou kē atu (tae atu ki te taiao). I te nuinga o te wā e whakaarohia ana tēnei raukaha e te auhokohoko. Hei tauria, ka tohu te whakamahi i ngā hautaonga tautai me ngā rawa pōpopo i te manaakitanga. Ka whakaata hoki ngā tikanga whāomoomo pūngao i te whakamātau ki te whakaheke i te pānga ā-taiao. Waihoki, ka miramira ēnei kohakoha i te tautoko i ngā mahi tautai me te whakaiti i te tapuwae waro.
Whakapapa (tātai)	Ki tā ngā uri Māori, ka tīmata ēnei hono ā-whakapapa tāhuhu ki te taiao i ngā pūrākau orokohanga o Ranginui rāua ko Papatūānuku. Mō ngā rangatira pakihi, he whakapapa anō hoki tō tō pakihi e whātui atu ana ki te māketē, ki tētahi whatunga kiritaki, ki te tautoko pakihi i oti ai i a koe te whakamau. He mea nui ki tō angitu hei SME kia whakarite koe e whakapakaritia ana ō hono ā-whakapapa, waihoki, e tūngia tonutia ana tō 'ahi kā'.
Mauri (te iho o te ora, te āhuratanga tūturu me te ora o te koirora, o te hinonga rānei)	Ko te mauri te āhuratanga e puta ana i a tātou mā roto i ā tātou pāhekoheko me ō tātou koronga. E whakaawe ana te mauri i te hunga katoa e whakapākia ana e tātou. Ka puta i a ia he āhuratanga o tātou hei rangatira, o ā tātou kaimahi, ā, i te nuinga o te wā, me ā tā tātou pakihi. Whakaarohia me pēhea te whakaahua o tō mauri e ērā atu tātou kia riro mai ai koe hei kanohi pai rawa atu mōna.
Mana (te ihi, te whakahirahiratanga, te whakaawenga, te tūnga)	Ka whakarei ake, ka whakaiti rānei tātou i tō tātou mana tangata, mana pakihi hoki. Ina toitū, hauora hoki tō tātou mana tangata, mana pakihi hoki, e whakaatāngia ana tēnei i ā tātou take pakihi. Waihoki, mehemea he hauora te mana o tētahi, ka whakaatāngia anō hoki tēnei. E āwhina ana te whakamahere urutaunga āhuarangi me ētahi atu whakamahere pakihi ki te whakarite e whakaata paingia ana tō tātou mana tangata, mana pakihi hoki i roto i ā tātou mahi katoa.

Te ao Māori me te āhuarangi hurihuri



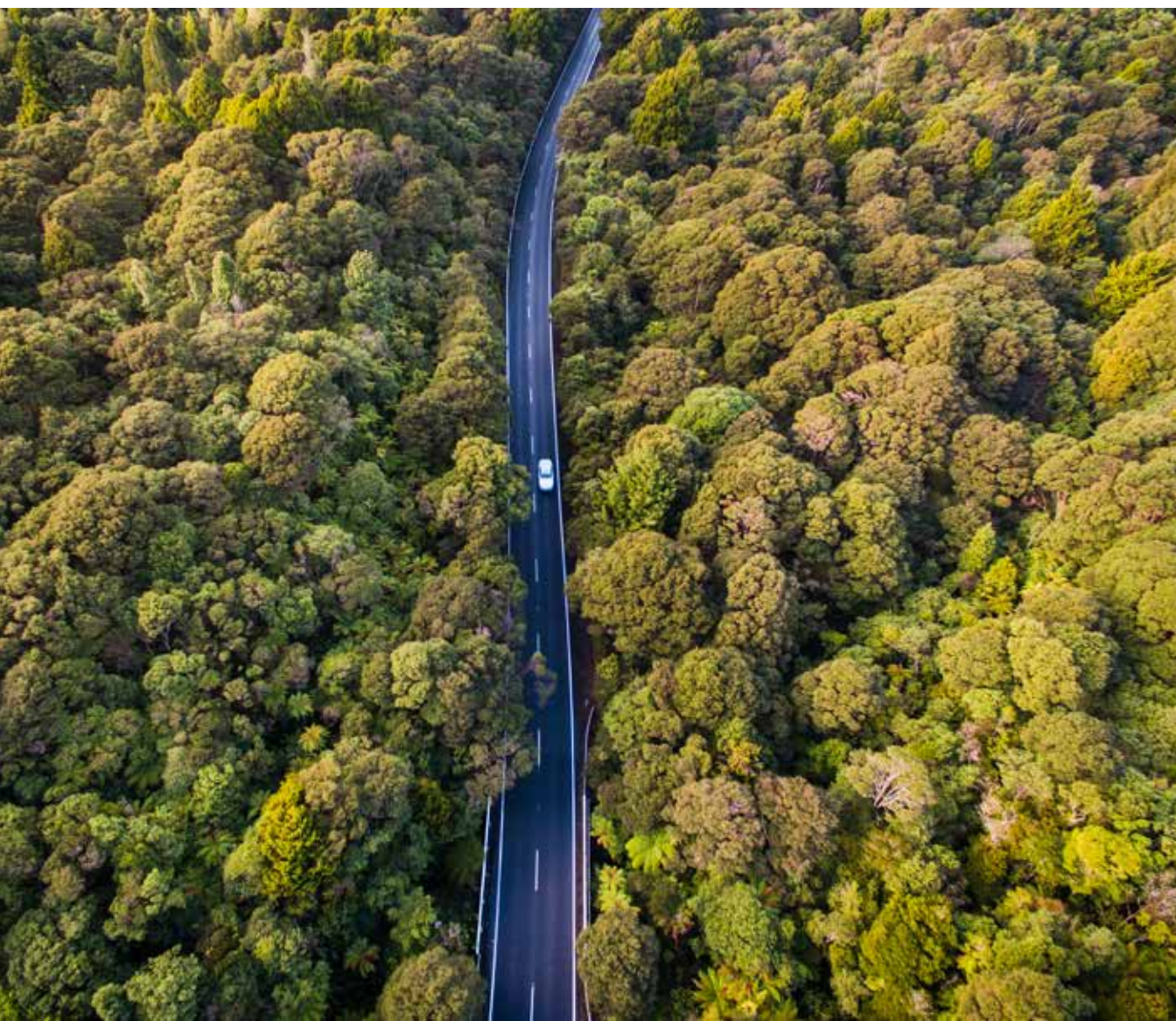
Te hononga o
te āhuarangi
hurihuri ki a koe

E āwhina ana ēnei mātāpono Māori ki te whakaatu i te hiranga o te taiao ina whakahāngaitia ki ngā tikanga pakihi. Ka taea aua mātāpono te whakamahi hei tauira ki te huritao ki te whakamahere urutaunga āhuarangi, me te wāhi whānui o tō SME ki tēnei.

E whakahāngaitia ana tēnei huarahi ki te ia ā-ao e hakune ana te kauawhi, te whakamahi hoki i ngā tikanga pakihi taiao toitū, takopori hoki. E whakamahia ana anō hoki aua tikanga ki te whakapoapoa i ngā kiritaki. Kia waihangatia e koe he mahere urutaunga āhuarangi, ka whai arawātea koe ki te arotake mehemea e hāngai ana ō uara pakihi ki ngā tikanga pakihi toitū me ngā mātāpono.

Mō te roanga atu o ngā pārongo

Kei te hiahia ahau he pārongo anō e pā ana ki...	Rauemi	Whārangi
Te āhua o te pā mai o te āhuarangi whakarerekē ki a ngāi Māori (huri noa i te motu)	He huringa āhuarangi he huringa ao: a changing climate, a changing world	Ngā whārangi katoa
Te āhua o te pā mai o te āhuarangi whakarerekē ki ngā pakihi Māori i Tāmaki Makaurau	Tāmaki Makaurau Economic Climate Change Risk Assessment	Ngā whārangi katoa
Te āhua o te āwhina a te mahere urutaunga ā-motu tuatahi a Aotearoa i a ngāi Māori kia urutau ki ngā pānga o te āhuarangi hurihuri	Ngā ngohe āhuarangi mō ngāi Māori: Te mahere urutaunga ā-motu	Ngā whārangi katoa



Me mōhio koe ki ō tūraru





Me mōhio koe
ki ō tūraru

KŌWAE AKO 4 TE TAUTOHU I Ō TŪRARU ME NGĀ ARAWĀTEA

E tōtika ai te whakamahere urutaunga, he mea whaitake kia mārama ki ngā tūraru whai hāngai ki te āhuarangi me ngā arawātea kei mua i tō pakihi. Ko tā tēnei wāhanga he ārahi i a koe mā te tukanga ki te tautohu i ngā pānga kino me ngā putanga whaihua ka puta mai pea e hāngai ana ki ngā mōrearea āhuarangi.



Ngā mōrearea āhuarangi, ngā tūraru me ngā arawātea

Ko ētahi taurira o ngā mōrearea āhuarangi (ngā mōrearea āhuarangi ōkiko rānei) ko ngā tūāhuatanga taikaha pēnei i ngā waipuke, ngā āwhā me ngā pakapaka, tae rā anō ki te āta pikinga ake o te pae moana. Ka whakamōrea pea ēnei mōrearea ki ō whakahaere i te pakihi, i te kaimahi, i te kiritaki me ngā huarawa. Waihoki, ka riro ēnei hei arawātea mō te auaha me te tupu.

Hei taurira, ahakoa ka whakamōreatia tētahi pokapū māra e te tūpono ka pā te tauraki ki ana rawa tupu, tērā anō hoki te tūpono ka whai huanga ia i tētahi kaupeka roa ake mō te whakatupu. Ka whaipanga hoki pea ia i te pikinga ake o te popono ki ngā tupu paretauraki.



Ki te whakahaere pakihi koe i Tāmaki Makaurau, ka māmā noa ki te kite mehemea ka pāngia tō pakihi e te waipuke, e ngā take mō te waipuke rānei. Ka kitea hoki e koe ngā rautaki ki te whakarite i tō papanoho. Torotoro atu ki te Mātai Waipuke o Tāmaki Makaurau.



Ngā tūraru whakawhitinga me ngā arawātea

Ara ake ai ngā tūraru whakawhitinga me ngā arawātea i te mea e whakawhiti ana te pāpori ki tētahi ōhanga tukuwaro-iti. Ka taea ēnei te āia e ngā kaupapahere me ngā uruhi waeture, te hangarau me ngā panonitanga māketē, ngā panonitanga rānei o ngā whanonga, o ngā tōmina rānei o ngā kiritaki.

Hei taurira, ko tētahi tūraru whakawhitinga pātahi ki ngā SMEs katoa ko te pikinga ake o te utu ikiiki i ngā rawa whāurunga ki ngā rāngai katoa nō te mea e piki ake ana te utu kōhinu. Ko tētahi arawātea whakawhitinga pea ko te pikinga ake o te popono kiritaki ki ngā hautaonga tukuwaro-iti.

Ahakoa kāore tēnei e kōrerotia i tēnei aratohu, nō te mea e aro ana tēnei ki ngā tūraru ōkiko i tētahi āhuarangi whakarerekē, ka hiahia pea koe ki te whakaaro ki ngā tūraru whakawhitinga hei wāhanga i tō whakamahere whānui mō anamata.

Te tautohu i ō tūraru me ngā arawātea



Me mōhio koe
ki ō tūraru

Te tautohu i ngā tūraru arorangi

Ki te tautohu i ngā tūraru whai hāngai ki te āhuarangi me ngā arawātea, whakaarohia ka pēhea ngā mōrearea āhuarangi e pā arorangi atu pea ki ētahi wāhanga mātuatua e rua i tō ara uara:



1. Ngā kaimahi me ngā kiritak

Tautohungia ngā tūraru ki te hauora, ki te haumaruru, ki te oranga hoki o ō kaimahi me ō kiritaki ka puta mai whai muri i ngā mōrearea āhuarangi pērā i te wera taikaha me te waipuke. Ko ētahi tauira pea o ēnei ko ngā mate pēnei i te mate pūwera, i ngā wharanga rānei ki te hunga whaipānga matua.



2. Ngā huarawa me ngā tūāhanga

Tautohungia ngā tūraru ki ngā huarawa me te tūāhanga e whaitake ana ki ngā whakahaerenga i tō pakihī, tae atu ki ngā hanga whaitake ōkiko, ngā taputapu me ngā utauta. Aromatawaingia te whakaraerae o ēnei huarawa ki ngā mōrearea āhuarangi pēnei i te waipuke me te piki haere o te pae moana.

Te tautohu i ngā tūraru tītaha (whāurunga/kaiwhakarato)

Ko ngā tūraru tītaha he tūraru kāore i raro i te mana whakahaere, te mana rangatira rānei o tō pakihī. Hei tauira, pohewatia ka whakakinotia ngā whakahaere o tētahi kaiwhakarato e whakawhirinakitia ana e tō pakihī ko te āwhā te take. Ko tō ngoikore ki te whiwhi i tēnei rauemi matua ka pā arorangi atu ki tō pakihī mehemea kāore e taea e koe te kimi i tētahi atu kaiwhakarato i te wā e matea ana. Ko ētahi atu tauira o ngā tūraru tītaha ko ngā haukotinga ka pā ki ngā ratonga mātuatua pēnei i te ipurangi me te hiko, tae atu ki ngā pikinga ake o ngā utuhoko inihua.

Te tautohu arawātea

I tua atu i te tautohu tūraru, me kakama hoki ki te tautohu i ngā arawātea pitomata mō tō pakihī kia momoho noa i tētahi āhuarangi whakarerekē. Anei ētahi tauira e rua:



Te matakite i ngā ia ahumahi

Kia rite mō ngā panonitanga ahumahi mā te matakite i te āhua e waihangā ana ngā panonitanga i te āhuarangi i ngā popono hōu i te mākete, e panoni ana rānei i ngā tōmina o ngā kaiwhakapeto. Hei tauira, ka whakapikingia ake pea te popono ki ngā hautaonga tautaiāo me ngā ratonga mā te whakapiki ake i te tūoho.



Te whakamahi whāomo i ngā rauemi

Whakatōmenehia ngā arawātea ki te whakaheke utu me te whakarei ake i te whāomotanga mā ngā tikanga toitū, pēnei i te penapena pūngao me te wai, te whakaiti i te para me te hangaruatanga. Mā te kauawhi i ngā puna pūngao whakahou ka taea ngā huanga wāroa te whakaputa mō tō pakihī.

Te tautohu i ō tūraru me ngā arawātea



Me mōhio koe
ki ō tūraru

Ngā tirohanga Māori ki ngā tūraru me ngā arawātea

Mō ngā pakihi e puritia ana e ngāi Māori me ngā hapori, e whakaaweawe ana ngā uara ahurea me ngā hononga ki te whenua me te whakapapa i ngā whakaaro ki ngā tūraru me ngā arawātea. Ko ngā āhuatanga ka tautohua e SME Māori hei āhuatanga 'mōrea' ka whārahi atu i ngā māharahara whakahaere o te wā tonu nei, ā, ka pā atu ki ngā whakaarohanga whānui ā-ahurea.

Whakaarohia pēhea te āhuarangi hurihuri e pā atu ai pea ki ngā uara ahurea e hāngai ana ki tō whakahaere. Tērā pea ka hono atu ēnei ki ngā uara i rārangitia i a Kōwae Ako 3.

Mā te āhukahuka i te whātuitanga o ngā āhuatanga ka noho mōrea e ai ki tā te mātauranga Māori ka taea pea te āwhina ki te whakakaha ake i tō whakamahere urutaunga mā te whai i tētahi tirohanga torowhārahi ake.

Mā te whakauruuru i ēnei tirohanga ki tō whakamahere urutaunga, ka taea e koe te whakarite e kauawhiawhi ana, e manawaroa ana, e hāngai ana anō hoki ō rautaki ki ngā uara o te katoa o te hunga whaipānga.



Ngā tohu taiao

He maha tonu ngā puna mātauranga e taea ana te āhei atu ki te āwhina i a koe ki te whakaawe i āu ake tikanga pakihi, me te ahunga anō hoki.

He momo pūtaiao ā-ringa, whai wheako anō hoki te maramataka (arā, te maramataka Māori) – e takea ana ia i te mātakitaki i ngā whetū, me te marama, me ngā mata o te marama – ka taea hoki ēnei e koe te whakamahi hei whakatakoto i ngā tūraru pakihi me ngā arawātea.

Mō te urutaunga āhuarangi tērā tētahi arawātea ki te whakaaro i tētahi huarahi e whai whakaaro ana ki ngā tūtohu taiao tuku iho e takea ana i tēnei puna mātauranga. Hei tauira, i ētahi rohe iwi ka tohua te tīmatatanga o te huarere taikaha i te koekoe a ngā kārearea i tētahi rangi paihurarere. I ētahi atu iwi, ka mōhio rātou ka tae mai te āwhā ina kite atu rātou i ngā pūkeko e piki ake ana ki tētahi papa tairanga ake. Mō ngā huanga kai me te nui o te māpua me ngā whakahaere i te hauhake, ki tō ētahi iwi orotau kia puāwai mai ētahi rākau, kua rite ētahi kai moana kia tīkina atu. Ko ētahi iwi ka āta mātaki i te wāhanga o te rākau ka puāwai tuatahi mai hei tūtohu i te nui o te huanga kai e tinga ana.








Te tautohu i ō tūraru me ngā arawātea



Te taputapu tautohu tūraru me te arawātea whai hāngai ki te āhuarangi

Whakamahia tā mātou taputapu tautohu tūraru me te arawātea whai hāngai ki te āhuarangi hoki ki te tautohu i ōu ake tūraru whai hāngai ki te āhuarangi me ngā arawātea. Kua whakakā takamua mātou i tēnei taputapu ki ngā mōrearea āhuarangi mātuatua hei āwhina i a koe ki te timata.

Me mōhio koe
ki ō tūraru

Mōrearea āhuarangi	Kua whai wheako kē koe ki ngā pānga o tēnei mōrearea i mua?	Mehemea āe, he aha ngā pānga ki tō pakihī?	Te ara o te mōrearea āhuarangi i anamata	E whakaaro ana koe ka pāngia tō pakihī e ēnei mōrearea i anamata? Mehemea āe, tuhia mai ngā pānga huri noa i te ara uara o tō pakihī			He aha ngā arawātea pitomata ka whakaputaina mai e tēnei mōrearea?
				Ngā kaimahi me ngā kiritaki	Ngā huarawa me ngā tūāhanga	Ngā whāurunga me ngā kaiwhakarato	
Ngā pakapaka 	Āe, i te horopaki o tētahi pakihī ahumāra iti i te tonga o Tāmaki Makaurau	kua pā te mate pūwera taikaha ki ngā kaimahi i a rātou e mahi ana ki waho i roto i ngā marama raumati i 2024	Ka piki ake te auau, te roanga me te kaha o ngā pakapaka	Āe, ina hoki rā ka auau ake, taikaha ake hoki ngā pakapaka, he nui ake te tīnga o ngā kaimahi kia rongō ki ngā pānga taikaha o te mate pūwera, pērā i te mate pāwerawera.	Tērā pea me nui ake te whakatikatika i ētahi tūāhanga nō te mea ka tere ake pea te tauheke, ko te pēhinga i te pūwera te take.	Āe, nō te mea tērā pea ka pā kinotia ētahi huanga e te mate pūwera, me te aha, e kore pea ērā e ora i ngā āhuatanga mahana ake. Tērā pea ka whakararutia i te pikinga o ngā utu o ngā whāurunga ki te whakahaere i ngā whakahaere kīrearea nō te mea kua piki ake te nui o ngā kīrearea me ngā mate e ahu mai ana i ngā pāmahana mahana ake. Ka piki ake ngā matea wai	Mā ngā āhuatanga mahana ake, me ngā kaupeka roa ake mō te whakatupu kai, ka nui ake pea te whakaputa mai i ngā huanga
Ngā ahiniwha 			Ka piki ake te auau o ngā ahiniwha				
Waipuke 			Ka piki ake te auau me te korahi o te waipuke				
Te whakaparawhenua ā-tai me te pikinga ake o te pae moana 			Te whakaparawhenua ā-tai me te pikinga ake o te pae moana				
Ngā āwhā 			Ka heke iho te auau, engari ka ngoto ake ngā āwhā				
Te tauraki 			Ka heke iho te auau, engari ka ngoto ake te tauraki				
Ngā Horowhenua 			Ka piki ake te auau o ngā horowhenua				

Te tautohu i ō tūraru me ngā arawātea



Me mōhio koe
ki ō tūraru

Te tuhi i ngā tauākī tūraru

Ko tā ngā tauākī tūraru he whakarato i tētahi huarahi mārama, popoto hoki ki te tautohu i ngā tūraru me ngā pānga. Whakamahia tā mātou taputapu tauākī tūraru ki te whakariro i ō tūraru i tautohua e koe hei tauākī tūraru:

- Whakaritea he tau ki ia tūraru, ki ia tūraru, e ngāwari ai te tautohu.
- Tāruatia te mōrearea, te ara mōrearea, te āhuatanga ara uara me te pānga tūraru i tā mātou taputapu tautohu i ngā tūraru me ngā arawātea whai hāngai ki te āhuarangi.
- Whakatīrewatia te tauākī tūraru mā te tīmata ki te mōrearea me tōna ara hāngai, me whai hoki ko te pānga wawe tonu me te pānga wāroa ki tō pakihī

Taputapu tauākī tūraru

Tuakiri Tūraru #	Mōrearea āhuarangi me te ara	Āhuatanga ara uara	Pānga	Tauākī tūraru
1	Ka piki ake ngā pakapaka	Ngā kaimahi	Ka rongō ngā kaimahi i te mate pūwera	Ka piki ake ngā pakapaka e whakamate pūwera ana i ngā kaimahi, ko te tukunga iho ko te heke iho o te māpua kaimahi i ngā haora awatea.
2				
3				
4				
5				

Te tautohu i ō tūraru me ngā arawātea



Me mōhio koe
ki ō tūraru

Tēnā, āta huritaongia

Mā te whai whakaaro ki ēnei take ka nui tō mārama ki ngā kōrero i tēnei kōwae ako.

- Kua tautohua e koe ngā pānga o te wā nei, o nakuanei rānei ki tō pakihī i te āhuarangi hurihuri?
- E mārama ana koe ka pēhea ia mōrearea āhuarangi, ia mōrearea āhuarangi, e matapaetia ana ka panonihia i tētahi taumata tiketike?
- Kua tautohua e koe ngā tūraru whai hāngai ki te āhuarangi me ngā arawātea mō ō kaimahi me ngā kiritaki?
- Kua tautohua e koe ngā tūraru whai hāngai ki te āhuarangi me ngā arawātea mō ō whāurunga me ngā putanga?
- Kua tautohua e koe ngā tūraru whai hāngai ki te āhuarangi me ngā arawātea mō ō huarawa me ngā tūāhanga?

Mō te roanga atu o ngā pārongo

Kei te hiahia ahau he pārongo anō e pā ana ki...	Rauemi	Whārangī
Te āhua o te huringa o te āhuarangi huri noa i Aotearoa	Arotakenga Tūraru mō te Huringa Āhuarangi o Aotearoa¹⁶	37
Te āhua o te panonitanga o te āhuarangi huri noa i Tāmaki Makaurau	Tāmaki Makaurau Economic Climate Change Risk Assessment	8
Mehemea rānei taku pakihī me ngā tūāhanga hāngai e whakaraerae ana ki te waipuke	Mātai Waipuke a Te Kaunihera o Tāmaki Makaurau	Ngā whārangī katoa



¹⁶ Ka whakaaturia e tēnei pūrongo ngā kitenga o te Aromatawai Mōrearea āhuarangi hurihuri tuatahi o Aotearoa (NCCRA). Ko tā te aromatawai tūraru he whakaatu i tētahi matapae ā-motu mō te āhua o te pānga o ngā mōrearea whai hāngai ki te āhuarangi ka pā pea ki Aotearoa



Me mōhio koe
ki ō tūraru

KŌWAE AKO 5 TE AROMATAWAI I Ō TŪRARU

Kua tautohua e koe ngā tūraru whai hāngai ki te āhuarangi kei mua i te aroaro o tō pakihī. Nā, kua tae te wā ki te aromatawai me te whakaraupapa i ēnei tūraru, kia mōhio ai koe ki te hiranga o aua tūraru me te whakaarotahi i ō kohakoha urutaunga.

Te mārama ki ngā taumata tūraru

Mā te whakatau i ō tūraru whai hāngai ki te āhuarangi e taea ai e koe te tātari i te pānga o ērā ki tō pakihī, me te whakaraupapa anō hoki i aua tūraru. Me hoki atu koe ki ngā tūraru i tautohua i a Kōwae Ako 4, ā, whakaritea he whakatauranga ki ia tūraru, ki ia tūraru. Mehemea kua oti kē i a koe he rēhita tūraru, ka riro pea tērā hei wāhi tīmata whaipāinga.

Kua oti i a koe te whakarite i tētahi anga whakahaere tūraru hinonga? Ka taea e koe te whakahāngai i te āwhata whakatauranga tūraru ki ēnei. Mehemea kāore, e tūtohu ana mātou kia whakamahia he āwhata ine pū-toru:

TŪRARU ITI NOA

He mutunga whāiti ka pā ki ō whakahaere pakihī, ki ō pūtea rānei, ki tō ingoa pai rānei e tika ana kia whakatikaina engari kāore e tīnga ki te tino tauwhati i tō pakihī.

TŪRARU ĀHUA NGĀWARI

He mutunga āhua ngāwari ka pā ki ō whakahaere pakihī, ki ō pūtea rānei, ki tō ingoa pai rānei, ā, e matea ana kia āta whakaarohia kia whakatikaina, ā, me kakama te whakahaere.

TŪRARU NUI TAIOREORE

He mutunga nui taioreore ki ō whakahaere pakihī, ki ō pūtea rānei, ki tō ingoa pai rānei e tika ana kia wawe tonu te whakatika me te whakatinana i ngā rautaki whakamauru pakari.



Te whakaraupapa i ngā tūraru mō te kāhui whakahaere

Mā te whakatau i ō tūraru koe e āwhinatia ai ki te tautohu i ngā tūraru nui taioreore ki tō pakihī, e taea ai e koe te whakaraupapa i ō kohakoha me ō rauemi.

Mehemea he poto te wā, he iti anō hoki ngā rauemi, e kore e taea pea e koe te urupare ki ngā tūraru katoa me ngā arawātea. Ina whakaraupapa i ngā tūraru whai hāngai ki te āhuarangi mō te kāhui whakahaere:

- **Arotakea ngā maiki o nā tata nei:** Huritaongia ngā maiki whai hāngai ki te āhuarangi o nā noa nei, ngā wheako rānei kua heipū ki tō pakihī. Ka taea e ēnei te whakarato he māramatanga whaipāinga ki te taikaha pitomata me te auau o anamata, me te tukanga whakaora whai muri i tētahi tūāhuatanga (arā, ngā rārangi wā, ngā hoapā)
- **Aromatawaingia ngā waiaro tūraru:** Me mōhio hoki he rerekē te waiaro o ia tangata, o ia SME rānei ki te tūraru, ā, e whakaawengia ana tēnei e ngā āhuatanga pēnei i te tirohanga me ngā āhuatanga whaiaro. Whakaarohia tōu ake tukunga ki te tūraru, me tōna pānga pito mata ki tō huarahi ki te whakahaere i ngā tūraru whai hāngai ki te āhuarangi.
- **Arotakea ngā mutunga:** Whakaarohia ngā mutunga o tō waiaro tūraru ki tō pakihī, ki ngā hoa mahi me ngā whānau. Aromatawaingia ka pā pēheatia tō tukunga tūraru ki te whakaawe i ngā whakatau me te tīnga o ngā rauemi ki roto i tō whakahaere.

Te aromatawai i ō tūraru



Me mōhio koe
ki ō tūraru

Taputapu whakatauranga tūraru whai hāngai ki te āhuarangi

Ngā tauākī tūraru (hei tauira)	Whakatauranga tūraru			Te parahau mō tēnei whakatauranga tūraru
	Iti noa	Āhua ngāwari	Nui taioiore	
Ka piki ake ngā pakapaka me te aha ka pā atu te mate pūwera ki ngā kaimahi. Ko te otinga ake ka iti iho te māpua o ngā kaimahi i ngā haora awatea.				Hei tauira, ngā pānga i rangona tae noa mai ki tēnei rā

Te aromatawai i ō tūraru



Me mōhio koe
ki ō tūraru

Tēnā, āta huritaongia

Mā te whai whakaaro ki ēnei take ka nui tō mārama ki ngā kōrero i tēnei kōwae ako.

- E mārama ana koe ki tō waiaro ki te tūraru?
- Kua tautohua e koe ko ēhea ngā mōrearea āhuarangi ka rahi noa atu te pā ki tō pakihi?
- Kua arotakea e koe ō tūraru, ā, kua whakaritea he whakatauranga puata he parahau hoki ki ia tūraru?
- Kua tīmata koe ki te tautohu i ngā huarahi ka taea e koe te whakaurutau i tō pakihi ki te āhuarangi hurihuri?

Mō te roanga atu o ngā pārongo

Kei te hiahia ahau he pārongo anō e pā ana ki...	Rauemi	Whārangi
Te āhua o te huringa o te āhuarangi huri noa i Aotearoa	Arotakenga Tūraru mō te Huringa Āhuarangi o Aotearoa¹⁷	37
Te āhua o te panonitanga o te āhuarangi huri noa i Tāmaki Makaurau	Tāmaki Makaurau Economic Climate Change Risk Assessment	8
Mehemea rānei taku pakihi me ngā tūāhanga hāngai e whakaraerae ana ki te waipuke	Mātai Waipuke a Te Kaunihera o Tāmaki Makaurau	All



¹⁷ Ka whakaaturia e tēnei pūrongo ngā kitenga o te Aromatawai Mōrearea Āhuarangi Hurihuri tuatahi o Aotearoa (NCCRA). Ko tā te aromatawai tūraru he whakaatu i tētahi matapae ā-motu mō te āhua o te pānga o ngā mōrearea whai hāngai ki te āhuarangi ka pā pea ki Aotearoa

Whakamāhereheretia, mahia, arotakea





KŌWAE AKO 6 TE WHAKATAKOTO I TŌ MAHERE URUTAUNGA

He whaitake ki te whakamahere mō te āhuarangi hurihuri ki te whakarite i te manawaroa me te auroa anō hoki o tō pakihi.

Ko tā tēnei kōwae ako he whakarato he whakatuwheratanga ngāwari ki te auroatanga pakihi me te whakamahere urutaunga. Ka whāngai tēnei i a koe ki te mātauranga ki te whakatakoto i ngā rautaki pakari e whakamauru ana i ngā tūraru whai hāngai ki te āhuarangi me te whakarei ake i te toitūtanga o tō pakihi.

E whakawhirinaki ana te āwhatawā me te tuatini o te whakamahere mō te urutaunga ki:

- te āhuratanga o ngā tūraru kei mua i a koe
- ngā āhuratanga o tō pakihi
- ō huringa whakamahere, me
- ngā rauemi kei a koe e wātea ana.



Ka taea tō whakamahere, kia ngāwari pēnei i te kōrerorero poto ki ngā mema o tō ohu, kia tuatini rānei pēnei i te whakaputa i tētahi pūrongo rautaki. Ko te mea nui ia ko te tīmata.

Ngā mahere auroatanga pakihi me ngā mahere urutaunga

He huarahi tōmua te mahere auroatanga pakihi ki te whakarite mō ngā tauwhatinga ohore. I ngā wā o ngā tairaru, ka arotahi ki te whakaora wāpoto me te tiaki i ngā āheinga pakihi kaikini. Ko tā ngā mahere auroatanga pakihi he aromatawai i ngā tūraru pitomata me ngā āhuratanga whaitake o tō pakihi, me te rārangī rautaki kia wawe, kia whāomo hoki te whakaoranga o tō pakihi, kia whaihua tonu ō whakahaere ahakoa ngā tauwhatinga.

Engaringari, he huarahi rautaki, wāroa anō hoki te mahere urutaunga. Ko tāna he whakamauru i ngā tūraru whai hāngai ki te āhuarangi o te wā nei, o anamata anō hoki. Ko tāna whai he whakarei ake i te manawaroa o tō pakihi mā te whai whakaaro ki ngā panonitanga whānui ake, ā-pūnaha anō hoki hei whakamāwhe i ngā pānga āhuarangi wāroa.

Ahakoa ka aro atu te mahere auroatanga āhuarangi ki ngā tūraru ka wawe tonu te pā, ko tā te mahere urutaunga he whakarite kia whanake, kia momoho anō hoki tō pakihi i te haere tonu o te pā mai o te āhuarangi hurihuri.

He wāhanga taketake ēnei mahere o tō whakamahere urutaunga. Ka taea ēnei te whakauru ki te whakarato i te whakahaerenga tūraru whānui me ngā rautaki whakapakari manawaroa. E rua, e rua he taputapu whakamahere whaiapainga ka taea te whakamahi ngātahi. Ka tautoko i a koe ngā tūraru i tautohu koe i ngā Kōwae Ako 4 me te 5 i roto i aua momo mahere e rua. Te waihanga i tētahi mahere auroatanga pakihi tōtika.

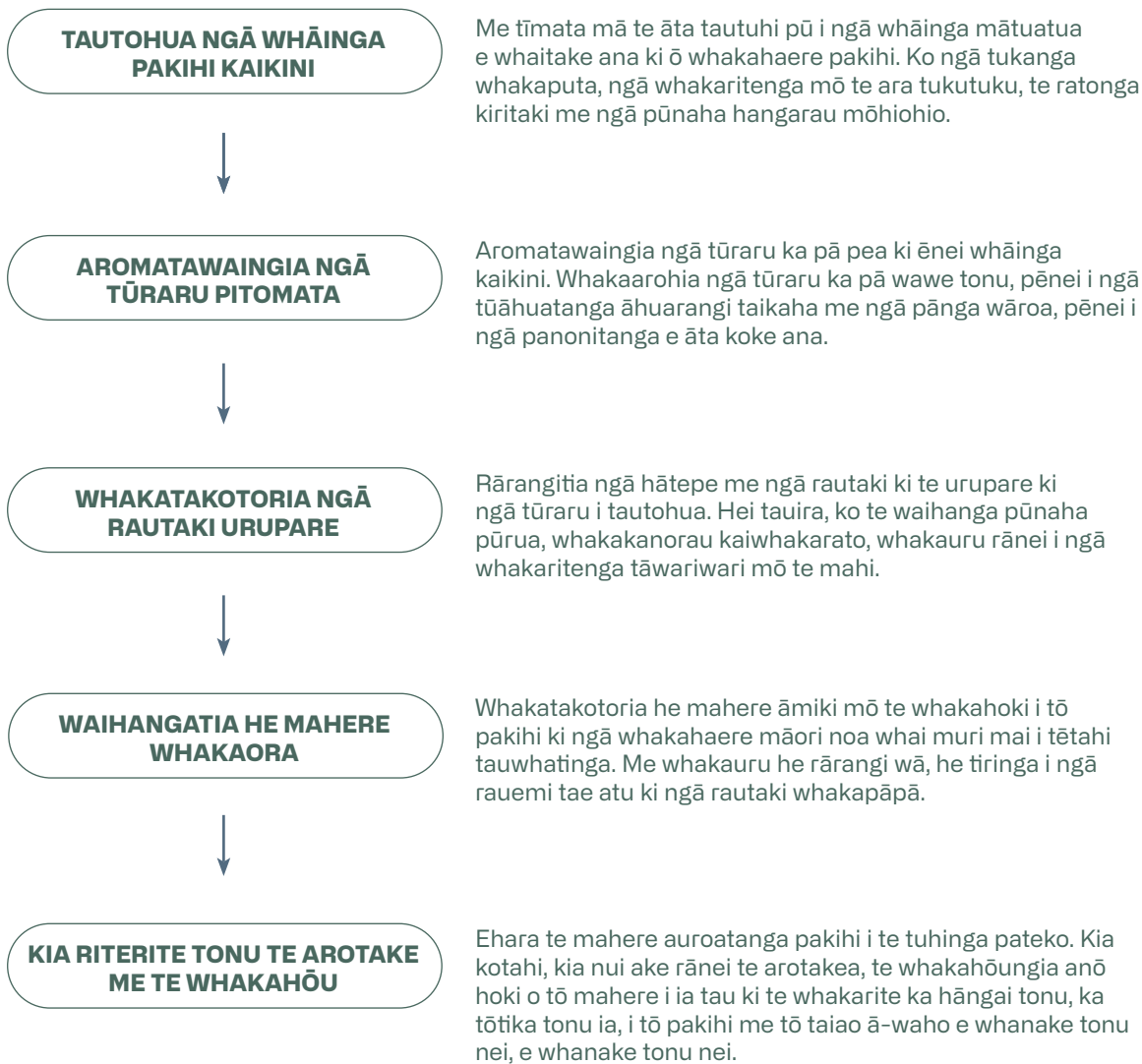
Te whakatakoto i tō mahere urutaunga



Whakamaheretia,
mahia, arotakea

Anei ētahi huarahi ki te waihanga i tētahi mahere auroatanga pakihi tōtika

Anei ētahi huarahi ki te waihanga i tētahi mahere auroatanga pakihi tōtika:



Ko tā te BCP tōtika he whakamihī ki ngā mōrea o ngā tūraru whai hāngai ki te āhuarangi ki ngā whakahaere i tō pakihi. Ka tuku te BCP he huarahi hangahanga hei whakamauru i ēnei tūraru hei whakaū ka taea e tō pakihi te tū kaha, te whakaora mai anō, te karo anō hoki i ētahi tauwhatinga pā whakarere whai hāngai ki te āhuarangi.

Mō ētahi atu tautoko, whakamātaungia ngā ratonga pēnei i a [Tokonga Mate Ohotata o Tāmaki Makaurau](#) me. Kei aua momo ratonga ngā taputapu hei āwhina i tō pakihi kia pakari ake tōna manawaroa ki ngā aituā.

Te whakatakoto i tō mahere urutaunga



Whakamaheretia,
mahia, arotakea

Te waihanga i tētahi mahere urutaunga tōtika

E rārangi ana te mahere urutaunga i ngā mahinga e whakamahere ana koe ki te mahi hei urupare ki ngā tūraru whai hāngai āhuarangi me ngā arawātea i tautohu, i aromatawai hoki koe. Ko tāna he titiro ki ngā tūraru o te wā nei, o anamata hoki, ā, i te nuinga o te wā ka whakaarohia e ia he wāroa ake i tō tērā e whakaarohia ana e tētahi mahere auroatanga pakihī.

Ka whakarato tā mātou taputapu urutaunga i tētahi wāhi tīmata hei āwhina i a koe ki te whakaaro me pēhea te whakatakoto i tētahi mahere urutaunga waiwai hei urupare ki ngā tūraru i tautohu koe i ngā Kōwae Ako 5 me te 6:

WHAKATŌMENEHIA NGĀ KŌWHIRINGA URUTAUNGA

Rangahaua, aromatawaingia hoki te tini o ngā kōwhiringa urutaunga. Whakaarohia te huhua o ngā huarahi, pēnei i te whakamōhou i ngā tūāhanga, i ngā whakapakaritanga o ngā tukanga, i ngā hangarau hōu rānei.



AROMATAWAINGIA NGĀ KŌWHIRINGA

Aromatawaingia ngā hua pai, kino hoki o ia kōwhiringa, mā te whakamahi i ngā paearu pēnei i:

- Ngā utu (tuatahi me te whakatikatika)
- Te tōtika i roto i te wā
- Te wāora o te hangarau
- Te wanea ki ngā kaimahi, ngā kiritaki, me te hapori
- Ngā whakaaetanga e matea ana, te tautuku ā-waeture rānei.



WHAKARAUPAPATIA NGĀ MAHINGA

Whakaraupapatia ngā mahinga ka nui noa atu ngā painga e ahu mai ana i tō tātaritanga. Me arotahi atu ki te whakatika i ngā tūraru nui taioeore noa mō ngā pae whakaraerae noa, huarawa rānei.



WHAKATAKOTORIA HE MAHERE ĀMIKI

Kia oti i a koe te taputapu urutaunga, whakatakotoria he mahere urutaunga āmiki e whakatakoto ana i ngā kōwhiringa arotau me ngā hātepe ki te whakatinana i aua kōwhiringa. Me whakauru ki tō mahere:

- He mahere tahua, ahumoni hoki
- He mahere mahi me ngā rārangi wā me ngā tūāoma
- Ngā tūnga i mārama te whakamahuki, me ngā haepapa.



WHAKATINANATIA, AROTURUKINGIA

Me tīmata mā te whakatinana i ngā mahinga e rārangitia ana i tō mahere. Kia riterite tonu te aroturuki i te kauneketanga, ā, ina matea me whakatika ki te whakarite he tōtika tonu o kohakoha urutau.

Te whakatakoto i tō mahere urutaunga



Whakamaheretia,
mahia, arotakea

Te rārangi whakaturuma mō te whakamahere urutaunga, auroatanga pakihī hoki

He wāhi tīmata āwhina tā mātou rārangi whakaturuma mō te whakamahere urutaunga, auroatanga pakihī hoki, i mua i te whakakī i te taputapu whakamāherehere urutaunga. Kua whakawhanaketia tēnei rārangi whakaturuma hei whakakī ki te āwhina i tō pakihī ki te tautohu i ngā mahinga mātuatua e matea ana. Kāore e kore ka whakawhirinaki ētahi atu ki tō pakihī. Ina tika, me whai whakaaro ki te tautapa i aua mahinga ki ētahi atu tāngata i tō ohu, hei whakarite ka tohaina ngā haepapa ki te whakaurutau i tō pakihī.

NGĀ KAIMAHI ME NGĀ KIRITAKI

- Kua pātai atu koe ki ō kaimahi mehemea e tinga ana ka pā kinotia ō rātou kāinga, ō rātou ara haere e ngā mōrearea āhuarangi?
- Kua whakaarohia e koe te oranga me te hauora hinengaro o ō kaimahi me ngā kaiwhakarato?
- Kua whakarato tautoko, whakangungu rānei koe ki ō kaimahi mō te āhuarangi hurihuri me ngā pānga o ngā mōrearea āhuarangi (arā, ngā pāmahana taikaha, te hekenga wai)?
- Kua whakaarohia e koe ngā tikanga hauora me te haumarū mō ō kaimahi e mōrea ana i ngā mōrearea āhuarangi (hei tauira ko ngā pāmahana taikaha)?
- Kei a koe ngā taipitopito whakapā o te wā mō ō kaimahi, kiritaki, me ngā kaiwhakarato? E arotake ana koe i ēnei i ia ono marama? E arotake ana koe i ēnei i ia toru ki te ono marama?
- Kua whakaarohia e koe ō here ā-ture mō ngā āhuratanga hauora me te haumarū i roto i tō wāhi mahi?

NGĀ WHĀURUNGA ME NGĀ PUTANGA

- Kua whakaarohia e koe ka pā pēheatia tō hautaonga, ratonga rānei, e te āhuarangi hurihuri?
- Kua whakaarohia e koe ngā pānga o ngā mōrearea āhuarangi ki tō ara tukutuku, tae atu ki ō whakaritenga i waenga i ngā kaiwhakarato me ngā kiritaki?
- Kua arotakea e koe ō mahere pakihī hei whakahāngai i ērā kitō anamata me ngā panonitanga e matapaetia ana mō te āhuarangi? He kaha rānei ōu ki te auaha i ngā hautaonga me

ngā ratonga ki te uru ki ngā māketē hōu, ki te whiwhi rānei i te huanga pakihī?

- Kua whakaarohia e koe mō te āhua e tae ana koe ki te whakauru i te mahinga āhuarangi hurihuri ki roto i ngā tukanga o te wā nei (hei tauira, i te mahere auroatanga pakihī, i ngā rēhita tūraru, i ngā hōtaka whakatikatika) hei whakaheke i te pikaunga mahi?

NGĀ HUARAWA ME NGĀ TŪĀHANGA

- Kua tautohua e koe ētahi mōrearea āhuarangi e whakamōrearea ana i ō huarawa me ngā tūāhanga?
- Kua whakaarohia e koe mehemea e mōrea ana tō pakihī i te waipuke hei tauira, mā te arotake i ngā mahere Mātai Waipuke¹⁸ a Te Kaunihera o Tāmaki Makaurau?
- Kua whakatau koe ka pēhea tō pakihī e haere tonu ai mehemea ka pā mai he tūāhuratanga?
- Kua tautohua e koe ngā huarahi ki te whakapakari ake i ō huarawa me ngā tūāhanga kia nui ake te manawaroa ki ngā mōrearea āhuarangi (hei tauira, ka rite tonu te whakapaipai i ngā kōrere me ngā manga)?
- E aroturuki ana koe i te kaha o ō whare me ō ratonga whare kia tū pakari i te pānga mai o ngā pāmahana taikaha?
- Kua whakaarohia e koe ngā hiranga ā-ahumoni o te pikinga ake o ngā utu whakatikatika?
- Kua arotakea e koe ngā kirimana inihua hei whakatūturu ka tiakina ō huarawa me ngā tūāhanga i ngā mōrearea āhuarangi?

¹⁸ Kua whakaritea e te Kaunihera o Tāmaki Makaurau ngā mahere GIS e whakaatu ana i te panonitanga e matapaengia ana mō te waipuke i Tāmaki Makaurau

Te whakatakoto i tō mahere urutaunga



Whakamaheretia,
mahia, arotakea

Taputapu whakamahere urutaunga

Whakamahia tā mātou taputapu whakamahere urutaunga ki te tīmata i tō mahere urutaunga. He mea nui kia mahara i a koe ko te āhua o tō aromatawai i ngā kōwhiringa urutaunga (e rite ana ki ngā kōwhiringa aromatawai kei raro iho nei) ka whakawhirinaki atu ki:

Ngā tūraru mātuatua	Whakatauranga tūraru	Koringa urutaunga pitomata	Aromatawai kōwhiringa			Ngā koringa i whakamātāmuatia e ahu mai ana i te aromatawai kōwhiringa	Te tangata ka noho haepapa ki te koringa	Te rā tīmata me te rā kati
			Ngā āhuatanga ine kounga	Te pūtea āwhiwhiwhi matea (\$, \$\$, \$\$\$, \$\$\$\$)	Te utu āwhiwhiwhi ki te pakihī mehemea e kore tēnei e taea te whakatutuki			
Nō te Taputapu Tuakiri Tūraru Āhuarangi – ko te tūtohu ko te tīmata mai i ngā tūraru i whakatauria he tiketike	Nō te te Taputapu Whakatauranga Tūraru Āhuarangi	Rangahaua, aromatawaingia hoki te tini o ngā kōwhiringa urutaunga. Whakaarohia te huhua o ngā huarahi, pēnei i ngā ngā tūāhanga whakamōhou i ngā tūāhanga, i ngā whakapakaritanga o ngā tukanga, i ngā hangarau hōu rānei.	Aromatawaingia ngā hua pai, kino hoki o ia kōwhiringa, mā te whakamahi i ngā paearu pēnei i te tōtika i roto i te wā, te wāora o te hangarau me ngā whakaaetanga e matea ana, te tautuku ā-waeture Rānei	Purua tētahi o ngā \$ whakatauta	Hei tauira ko ngā utu whakawhiti i ngā tūāhanga, ko te whakaheke i ngā hokonga, me te maha noa atu.			

Te whakatakoto i tō mahere urutaunga



Whakamaheretia,
mahia, arotakea

Te whakauru i ngā tirohanga a te ao Māori

Mō ngā pakihī e puritia ana e ngāi Māori, he whitake ki te whakauru i ngā tirohanga a te ao Māori ki tō mahere auroatanga pakihī me ngā mahere urutaunga. He wāhi nui tō ngā uara ahurea o ngāi Māori i te whakaawe i te āhua o te kitinga, o te urupare atu hoki ki ngā tūraru whai hāngai ki te āhuarangi me ngā arawātea. He mea whaihua ki te toai i ngā mātāpono i miramirahia i a Kōwae Ako 3, tae atu ki:

Manaakitanga (te taurima me te tiaki)

Me aro atu ki te oranga o tō hapori. Me mātua whakarite koe e whakaarohia ana e tō mahere ngā pānga pāpori whānui i te āhuarangi hurihuri, ā, me whai ki te whakarei ake i te manawaroa o tō pakihī, me tō whānau me tō hapori ā-rohe.

Whakapapa (tātai)

Whakamihia te whātuitanga o ngā āhuratanga katoa. Tirohia ngā tūraru whai hāngai o tō pakihī me ngā arawātea hei wāhi o tētahi pūnaha rahi ake, torowhārahi ake hoki. Ka whakaurutia ki taua pūnaha ko ngā taha taiao, pāpori, me te ahurea.

Mā te whakahāngai i tō kohakoha urutau ki ngā uara o ngāi Māori, ka taea e koe te whakatakoto i ngā mahere hāngai ki te ahurea, aro ki te hapori, tautaiāo anō hoki.



Te whakatakoto i tō mahere urutaunga



Whakamaheretia,
mahia, arotakea

Mō te roanga atu o ngā pārongo

Kei te hiahia ahau he pārongo anō e pā ana ki...	Rauemi	Whārangī
Whakamahere auroatanga pakihi	Ataata auroatanga me te whakamahere pā whakarere a Business.govt.nz	Ngā whārangī katoa
Ngā tauira whakamahere auroatanga pakihi	Ngā tauira whakamahere auroatanga pakihi a Tokonga Mate Ohotata o Tāmaki Makaurau	Ngā whārangī katoa





KŌWAE AKO 7 TE AROTAKE I TŌ MAHERE URUTAUNGA

He tūāoma mutukore te urutau ki te āhuarangi hurihuri, ehara tēnei i te tūmahi tukutahi. Me rite tonu te aromatawai, me te ako, me te whakapakari ake i ō rautaki me te whakarite ka noho manawaroa tō pakihī ahakoa he rangirua te anamata kei mua i te aroaro.

Ko tā tēnei kōwae ako he ārahi i a koe i te tukanga ki te huritao ki ō kohakoha urutaunga, me te ako i ō wheako, me te whakapakari ake i ō mahere. Mā te whakauru i ēnei tikanga ki ō koringa pakihī o ia rā, ka taea e koe te whakareī ake i te tōtika o āu rautaki urutaunga, me te whai tonu i tētahi huarahi kakama ki ngā tūraru whai hāngai ki te āhuarangi me ngā arawātea.

Te huritao ki ō kohakoha urutaunga

He wāhanga whai tikanga te huritao ki te tukanga urutaunga. Ko te titiro ki ō koringa, te aromatawai ngā putanga i aua koringa, me te mārama ngā mahi i eke, me ngā mahi kāore i eke. Anei ētahi huarahi ki te whakauru i te huritao ki tō whakamahere urutaunga:



WHAKARITEA HE WĀ AROTAKE PUTUPUTU

Whakaritea he wā ki te arotake me te whakahōu i ō mahere urutaunga. Tērā pea, ka tū mai ēnei i ia hauwhā tau, i ia haurua tau rānei, i ia tau rānei. Kei te āhua tonu o tō pakihī me ngā tūraru whai hāngai ki te āhuarangi me ngā arawātea kei mua i a koe.



KOHIA NGĀ WHAKAHOKINGA KŌRERO I TŌ OHU

Whakawhitihiti kōrero ki ō kaimahi i te tukanga huritao. Ka taea e ō rātou māramatanga ā-ringa te whakarato he pārongo whaipāinga mō te tōtika o ō koringa urutaunga.



TUHIA Ō WHEAKO

Tuhia he rekoata o ngā mahi i oti i a koe, ngā uauatanga i tūtaki koe, me ngā haumāuiui i riwha i a koe. Ka whaihua tēnei tuhinga hei tohutoro i anamata, hei whakapakari hoki i ō mahere.



TĀTARIA NGĀ PUTANGA

Whakatauritea ō koringa urutaunga ki ō whāinga SMART. I tutuki i a koe ngā mahi i whai koe ki te whakatutuki? Mehemea kao, he aha ngā taero? Mā te mārama ki ēnei āhuatanga koe e āwhinatia ai ki te whakatōtika i ō rautaki.

Te arotake i tō mahere urutaunga



Whakamaheretia,
mahia, arotakea

Te ako i ō wheako

Ko te whakariri i ō huritao hei māramatanga e taea ana te mahi te ngako o te ako. Ko ētahi wāhanga o tēnei ko te mārama he aha i eke panuku ai ētahi koringa, kāore rānei i eke panuku, me te whakamahi i taua mātauranga hei whakaawe i ō kōwhiringa i anamata.

Anei ētahi huarahi ki te whakarei ake i te ako i tō whakamaheretanga urutaunga:

TAUTOHUA NGĀ AKORANGA MĀTUATUA

I ō huritao, āta tautuhia pū ngā akoranga mātuatua e taea ana te whakapakari ake i ō rautaki urutaunga. Hei tauira, ko ngā rauhangā i pai ai te mahi, ngā wāhi rānei e matea ana kia nui ake ngā rauemi, kia rerekē rānei ngā huarahi.

KIA RITE TONU TE WHAI WĀHI ATU KI TE AKO

Kia mātau tonu ki ngā mātauranga pūtaiao āhuarangi o te wā, me ngā rautaki urutaunga, me ngā tauira pai rawa o te ahumahi. Tae atu ki ngā awheawhe, ngā kauhaurangi, me ngā whakarauikatanga ki te whakawhānui ake i tō mōhio me ngā pūkenga. Ka ngāwari noa pea te whakatutuki i tēnei pēnei i te ohauru ki ngā pānui hāngai, ko te aru rānei ki ngā whakahaere mātuatua i runga pāhopori, ko te tae atu rānei ki ngā whakarauikatanga. Mahia ngā mea e hanga māramatanga ana ki tō pakihī me ngā rauemi e wātea ana ki a koe.

AKO I TĀNGATA KĒ ATU

Whakapā atu ki ētahi atu SMEs, o roto, o waho hoki i tō ahumahi. Mā te whakawhitihiti i ngā wheako me ngā māramatanga ka whai pea koe he māramatanga hōu, he whakaaro auaha anō hoki mō tō whakamaheretanga urutaunga.

RAUHĪTIA HE AHUREA AKO

Rauhītia he ahurea o te whakapakari tonu ake i roto i tō pakihī. Whakatairangatia te whakawhiti whakaaro tuwhera, e hāneanea ai ngā kaimahi ki te whakawhitihiti i ō rātou wheako me ngā tūtohunga mō te urutaunga.



Te arotake i tō mahere urutaunga



Whakamaheretia,
mahia, arotakea

Te whakapakari ake i tō mahere urutaunga

Ko te iho o te whakapakaritanga i tēnei horopaki ko te whakamahi i ngā pārongo tāu i ako hei whakarei ake i tō mahere urutaunga ki āu anō akoranga. Arā, ko te mahi i ngā panoni auau e āta whakapakari ana i te manawaroa o tō pakihi. Anei ētahi huarahi ki te whakapakari tōtika i tō rautaki urutaunga:

WHAKAHŌUTIA Ō AROMATAWAI TŪRARU

I a koe e ako tonu ana i tō tūraru whai hāngai ki te āhuarangi, me te āhua o te pā a ērā ki tō pakihi, whakahōungia tō aromatawai tūraru. Mā konei e whakaritea ai he hāngai tonu, he tōtika tonu hoki tō mahere urutaunga.

WHAKATŌTIKANGIA Ō RAUTAKI

Whakamahia tō akoranga ki te whakatōtika i tō rautaki urutaunga. Ko ētahi wāhanga pea o tēnei ko te whakamahi i ngā hangarau hōu, te panoni i ngā hātepe ā-whakahaere, te whakarei rānei i ngā tūāhanga.

WHAKARITEA HE WHĀINGA HŌU

E takea ana i tō huritao me ngā akoranga, whakaritea he whāinga hōu e taea ana te whakatutuki mō tō whakamahere urutaunga. Me hāngai ēnei whāinga SMART ki tō whāinga whānui o tō pakihi.

AROTURUKINGIA, AROMATAWAINGIA TŌ KAUNEKETANGA

Kia putuputu te aroturuki i te whakatinanatanga o tō mahere urutaunga. Aromatawaingia te tōtika tō āu koringa, ā, ina matea me whakatika.



Te arotake i tō mahere urutaunga



Whakamaheretia,
mahia, arotakea

Te aroturuki me te arotake

Hei whakarite ka riro te huritao, te ako, me te whakapakari hei wāhanga o āu koringa kawenga o ia rā, whakaurutia te aroturuki me te arotake ki roto i ō tukanga o te wā nei. Anei ētahi kōwhiringa ā-ringa hei whakatutuki i tēnei:

- **Whakakaupapangia te urutaunga ki ngā hui:** Tuku auautia he pānui mō te kauneketanga o te urutaunga i ō hui kāhui whakahaere, hui poari rānei. Tēnā pea ka whakahaerengia he wāhanga poto mō te 10 meneti hei wā mōu ki te whiriwhiri i ngā mahi kua tutuki, me ngā mahi kāore anō kia tutuki.
- **Purua ki te pūrongo ā-tau:** Āpitihia he wāhanga mō te manawaroa āhuarangi me ngā kohakoha urutaunga ki tō pūrongo ā-tau. Miramirahia ngā koringa i oti i a koe, me ngā hua i tutuki, me ngā mahere mō te tau e whai ake nei.
- **Whakaritea ngā haepapa:** Kia mārama te tautuhi i ngā tūnga me ngā haepapa mō te urutaunga i tō ohu. Whakaurutia he haepapa i ngā tautuhinga mahi me ngā mahere whakawhanake ā-kiritahi hei whakarite ka noho papanga rātou.
- **Whakamahia te hangarau:** Whakamahia te hangarau hei whai, hei arohaehae i ō kohakoha urutaunga. Whakamahia ngā taputapu whakahaere pūtere, ngā pūmanawa tātari raraunga me ētahi atu rauemi matihiko ki te whakakōkīki ake i te tukanga aroturuki.

Te whakawhiti i tō tūāoma urutaunga

Ka taea te whakawhiti i tō tūāoma urutaunga te whakarato he painga tāpiri, pēnei i te ingoa pai i whakareia ake mō tō pakihiki ake me te ako i ngā wheako o tāngata kē atu. Ka taea ēnei whiriwhiringa te tū ki ētahi o ō whatunga, rōpū rānei; engari ehara i te mea me whai he arotahinga toitūtanga, arotahinga urutaunga rānei. Anei ētahi huarahi ki te whakawhitiwhiti i tō kauneketanga:

- **Whakawhitiwhiti kōrero ki te hunga whaipānga:** Whakamōhiotia tō hunga whaipānga ki ō kohakoha urutaunga. Ko ō kaimahi, kiritaki, kaihaumi me tō hapori ā-rohe tēnei. Ka whakapakari te puata i te whakapono, waihoki, ka whakaatu ia i tō ngākau titikaha ki te manawaroa.
- **Whakapiri atu ki ngā whatunga me ngā rōpū:** Me uru atu ki ngā whatunga me ngā rōpū e arotahi ana ki te urutaunga āhuarangi me te manawaroa. Ka whakaratoa e ēnei pūhara ngā arawātea ki te whakawhitiwhiti i ō wheako me te ako i ētahi atu tāngata.
- **Tāia ngā rangahau whakapūaho:** Waihangatia he rangahau whakapūaho e āta whakamārama ana i ō koringa urutau, me ō angitu, me ngā akoranga i akona. Ka taea ēnei te toha atu mātā mātou pae tukutuku, i ngā pānui ahumahi rānei, i ngā whakarauikatanga rānei. Mehemea ka hiahia koe kia tāia tō rangahau whakapūaho, tēnā, īmēratia
- **Whai wāhi atu ki ngā kaupapa hapori:** Whai wāhi atu ki ngā kaupapa hapori e hāngai ana ki te urutaunga āhuarangi. Ka āwhina tēnei ki te whakapakari i te manawaroa ā-rohe, me te whakatū i tō pakihiki hei pakihiki ārahi i te toitūtanga.

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Te arotake i tō mahere urutaunga



Whakamaheretia,
mahia, arotakea

Mō te roanga atu o ngā pārongo

Kei te hiahia ahau he pārongo anō e pā ana ki...

Rauemi

Ngā Whārangī

Me pēhea te whakatū i tētahi Anga aroturuki whānui me te arotake

[Keteparaha AdaptME](#)

Ngā whārangī katoa



Rārangi whakaturuma

Wāhanga	Kōwae Ako	Ngā Whakaarohanga / Ngā Pātai
Te hononga o te āhuarangi hurihuri ki a koe	Ngā tūāpapa o te āhuarangi hurihuri	<input type="checkbox"/> Kua pā pēhea te āhuarangi hurihuri ki a koe? <input type="checkbox"/> Kua pā pēheatia tō pakihi me tō whānau? <input type="checkbox"/> Ka taea e koe te mahara ki ētahi tauira i mahi tahi ai tō hapori ki te tūwhiti i tētahi uauatanga? Tērā pea he tūāhuratanga aituā, he tūāhuratanga rānei e whai hāngai ana ki te KOWHEORI-19. I pēhea tā koutou mahi tahi ki te tūwhiti i tēnei uauatanga? Ka pēhea ēnei akoranga e āwhina ki te whakapakari ake i te manawaroa o te hapori i ngā tūāhuratanga āhuarangi?
	Te ao Māori and climate change	<input type="checkbox"/> Kua whakaarohia e koe ētahi huarahi ka taea e te ao Māori te tautoko tō whakamahere urutaunga? <input type="checkbox"/> Kua tautohua e koe ngā uara e hiahia ana koe ki te whakauru ki roto i tō whakamahere urutaunga? <input type="checkbox"/> Kua whakaarohia e koe me pēhea tō whakapāpā atu ki ngā iwi/hapū mā tō whakamahere urutaunga?
Me mōhio koe ki ō tūraru	Ko te tautohu i ō tūraru me ngā arawātea	<input type="checkbox"/> Kua tautohua e koe ngā pānga o te wā nei, o nakuanei rānei ki tō pakihi i te āhuarangi hurihuri? <input type="checkbox"/> E mārama ana koe ki te āhuratanga e matapae tiketikengia ana mō ia mōrearea āhuarangi? <input type="checkbox"/> Kua tautohua e koe ngā tūraru whai hāngai ki te āhuarangi me ngā arawātea mō ō kaimahi me ngā kiritaki? <input type="checkbox"/> Kua tautohua e koe ngā tūraru whai hāngai ki te āhuarangi me ngā arawātea mō ō whāurunga me ngā putanga?
	Ko te aromatawai i ō tūraru me ngā arawātea	<input type="checkbox"/> E mārama ana koe ki tō waiaro ki te tūraru? <input type="checkbox"/> Kua tautohua e koe ko ēhea ngā mōrearea āhuarangi ka rahi noa atu te pā ki tō pakihi? <input type="checkbox"/> Kua arotakea e koe ō tūraru, ā, kua whakaritea he whakatauranga puata he parahau hoki ki ia tūraru? <input type="checkbox"/> Kua tīmata koe ki te tautohu i ngā huarahi ka taea e koe te whakaurutau i tō pakihi ki te āhuarangi hurihuri?

Rārangi whakaturuma

Whakamaheretia, mahia, arotakea

Te whakatakoto i tō mahere urutaunga

Ngā kaimahi me ngā kiritaki

- Kua pātai atu koe ki ō kaimahi mehemea e tīnga ana ka pā kinotia ō rātou kāinga, ō rātou ara haere rānei e ngā mōrearea āhuarangi?
- Kua whakaarohia e koe te oranga me te hauora hinengaro o ō kaimahi me ngā kaiwhakarato?
- Kua whakarato koe i te tautoko, te whakangungu rānei ki ō kaimahi mō te āhuarangi hurihuri me ngā pānga o ngā mōrearea āhuarangi (arā, ko ngā pāmahana taikaha, ko te hekenga wai)?
- Kua whakaarohia e koe ngā tikanga hauora me te haumarua o ō kaimahi e mōrea ana i ngā mōrearea āhuarangi (hei tauira, ko ngā pāmahana taikaha)?
- Kei a koe ngā taipitopito whakapā o te wā a ō kaimahi, ō kiritaki, me ngā kaiwhakarato? E arotake ana koe i ēnei i ia ono marama? E arotake ana koe i ēnei i ia toru ki te ono marama?
- Kua whakaarohia e koe ō here ā-ture mō ngā āhuetanga hauora me te haumarua i tō wāhi mahi?

Ngā whāurunga me ngā putanga

- Kua whakaarohia e koe ka pā pēheatia tō hautaonga, ratonga rānei, e te āhuarangi hurihuri?
- Kua whakaarohia e koe ngā pānga o ngā mōrearea āhuarangi ki tō ara tukutuku, tae atu ki ō whakaritenga i waenga i ngā kaiwhakarato me ngā kiritaki?
- Kua arotakea e koe ō mahere pakihi hei whakahāngai i ērā ki tō anamata me ngā panonitanga e matapaetia ana mō te āhuarangi? He kaha ōu ki te auaha i ngā hautaonga me ngā ratonga ki te uru ki ngā māketete hōu kia riro ai i a koe te huanga pakihi?
- Kua whakaarohia e koe me pēhea tō whakauru i te koringa āhuarangi hurihuri ki roto i ngā tukanga o te wā (hei tauira he mahere auroatanga pakihi, ngā rēhita
- tūraru, me ngā hōtaka whakatikatika) hei whakaiti i tepikaunga mahi?

Ngā huarawa me ngā tūāhanga

- Kua tautohua e koe ētahi mōrearea āhuarangi e whakamōrearea ana i ō huarawa me ngā tūāhanga?
- Kua whakaaro koe mehemea e noho mōrea ana tō pakihi i te waipuke mā te titiro ki ngā mahere mātai waipuke a te kaunihera o Tāmaki Makaurau?
- Kua whakamaheretia e koe ka pēhea tō pakihi e haere tonu ai mehemea ka pā mai he tūāhuetanga?
- Kua tautohua e koe ngā huarahi ki te whakapakari ake i ō huarawa me ngā tūāhanga kia nui ake te manawaroa ki ngā mōrearea āhuarangi (hei tauira, ka rite tonu te whakapaipai i ngā kōrere me ngā manga)?
- E aroturuki ana koe i te kaha o ō whare me ō ratonga whare kia tū pakari i te pānga mai o ngā pāmahana taikaha?
- Kua whakaarohia e koe ngā hiranga ā-ahumoni o te pikinga ake o ngā utu whakatikatika?
- Kua arotakea e koe ngā kirimana inihua hei whakatūturu
- ka tiakina ō huarawa me ngā tūāhanga i ngā mōrearea āhuarangi?

Papakupu whāiti

Kupukiri	Whakamārama
Urutaunga	Te tukanga o te urutau ki ngā pānga ōkiko me te āhuarangi hurihuri ki te taiao, ki te ōhanga, ki ngā tūāhanga me te pāpori. Ko ētahi tauira ko te whakatiketike i ngā parenga, tahatika rānei, me te whakatō i ngā huanga pare tauraki. ¹⁹
Mahere urutaunga	Ko te whakawhiti i tētahi tūnga o te tūoho ki tētahi tūnga anō ki te whakatakoto rautaki tūturu me ngā mahere te tikanga o te whakamaheretanga urutaunga mō te āhuarangi hurihuri (ka whai taunakitanga pakari, ā, ka whakaae ā-kiritōpūngia). ²⁰
Mahere auroatanga pakihī (BCP)	Ko tā te mahere auroatanga pakihī he āta tautuhi i ngā wāhanga tino whakahirahira i tō pakihī, ka tautohua ngā tūraru pitomata ki ēnei āhuatanga kaikini, ā, ka whakarite i a koe kia wawe tonu noa, kia ngāwari tonu noa anō hoki tō haumanu mai. ²¹
Āhuarangi	E hāngai ana te āhuarangi ki te momo huarere he mea hanga noa ki te rongō i roto i tētahi wā roa, i te nuinga o te wā mō te 30 tau, neke ake. Ka uru ki tēnei ko ngā huringa pāmahana, hau, uanga anō hoki.
Āhuarangi hurihuri	E ai ki tā te Atikara 1 o Te Anga Tikanga mō te Āhuarangi Hurihuri a Te Rūnanga Whakakotahi i ngā lwi o te Ao (UNFCCC), ko tāna he whakamārama i te āhuarangi hurihuri pēnei “he panonitanga i te āhuarangi e ahu arorangi mai ana, e ahu tītaha mai ana rānei i ngā koringa tangata e whakarerekē ana i te hanganga o te kōhauhau ā-ao, ā, he āpitihanga tēnei ki te tāupe āhuarangi māori e kitea ana i roto i ngā wā e taea ana te whakataurite”.
Ngā mōrearea āhuarangi	Ko te putanga mai o tētahi tūāhuatanga ōkiko, ia rānei ka tūpono te pā mai e whakaputaina ana e te tangata. Ko tōna tukunga iho pea ko te mate, ko te wharanga, ko ētahi atu pānga rānei ki te hauora, me te pākarakaru me te whakangaromanga o ngā papanoho, tūāhanga, mahi, tuku ratonga, pūnaha hauropi me ngā rauemi taiao.
whakaparawhenua ā-tai/pikinga ake o te pae moana	He rohe takutai tāpotupotu tō Aotearoa e mārakerake ana ki te whakaparawhenua (arā, te waipuke) ā-tai, ina koa rā i ngā āwhā. E tino tīnga ana ka pā mai i te wā kotahi te whakaparawhenua ā-tai i ngā tai pari, i te āmai o te āwhā, i ngā ngaru nunui hoki/rānei. I ēnei wā, he nui ake te whakaraerae o ngā wāhi e tūtaki ana ngā awa, ngā manga rānei ki te moana, nō te mea ka taea e ngā ngaru tū te ā i ngā awa kia hoki kōmuri ki uta. Waihoki, e piki ake ana te pae moana, ā, tērā te tūpono ka nui ake te taikaha o ngā āwhā i anamata, nō reira ko ngā wāhi e uaua ana te whakaparawhenuatia, ka nui ake te tūpono ka auau ake te whakaparawhenuatia i anamata. ²²
Tauraki	Ko te korenga o te uanga te tikanga o te tauraki. Ko tāna he whakatiki, he aukati atu rānei i te koringa tangata – hei tauira, ko te mahi pāmu, ko te waihanga pūngao rānei. I te nuinga o ngā tau ka rongō a Aotearoa i ngā wā maroke auroa, engari kei te āhua tonu o te huhua o ngā āhuatanga mehemea ka kīia he tauraki, kāore rānei. I te nuinga o te wā ka tautuhia pērātia ina hipa ake te korenga tukuwaitōmiti pitomata (PED) i te 300mm. ²³
Tūāhuatanga huarere taikaha	He āhuatanga e uaua ana ki te pā atu ki tētahi wāhi. He huhua ngā whakamārama o te ‘uaua’, engari he tūāhuatanga te tūāhuatanga huarere taikaha ka iti iho te puta mai i ia 10 tau. Ka rerekē pea i ia wāhi, i ia wāhi ngā āhuatanga mō te tautapa i tētahi tūāhuatanga hei tūāhuatanga huarere taikaha. ²⁴
Waipuke	Ko te taupokinga o te whenua ki te wai te waipuke, ā, he maroke taua whenua i te nuinga o te wā. Ko te uanga tātā, auroa rānei te takena o ngā waipuke. Engari ka taea anō hoki ēnei te pā mai i ngā horowhenua e tīmatanga ana e te uanga tātā, e ngā rū rānei, e te takahēnga o ngā pāpuni, e ngā pae moana tiketike i ngā ngutuaua, e te whakaparawhenua āwhā ā-tai me te tainiwhaniwha. ²⁵

¹⁹ NIWA (n.d.) He papakupu whāiti o ngā kupukiri: niwa.co.nz/helping-your-business-or-organisation-plan-climate-change-adaptation/climate-change-adaptation-toolbox/glossary

²⁰ IPCC (n.d.). Te papakupu whāiti a IPCC: apps.ipcc.ch/glossary

²¹ BusinessNZ (n.d.) Te whakamahere auroatanga me te pā whakarere: business.govt.nz/risks-and-operations/planning-for-the-unexpected-bcp/continuity-and-contingency-planning

²² NIWA (n.d.). Te whakaparawhenua āwhā ā-tai: niwa.co.nz/hazards/coastal-storm-inundation

²³ NIWA (n.d.). Ngā tauraki: niwa.co.nz/hazards/droughts

²⁴ NIWA (n.d.) He papakupu whāiti o ngā kupukiri: niwa.co.nz/helping-your-business-or-organisation-plan-climate-change-adaptation/climate-change-adaptation-toolbox/glossary

²⁵ Te Rākau Whakamarumaru (n.d.). Floods: civildefence.govt.nz/cdem-sector/consistent-messages/flood

Papakupu whāiti

Koranehe	Ngā kora whatungarongaro pēnei i te waro, i te hinu me te kapuni. ²⁶
Ngā haurehu kati mahana	He momo haurehu te haurehu kati mahana i te kōhauhau e miti ana i te ngao wera (e kīia ana ko te hihi pōkākā). He whai tikanga ngā haurehu kati mahana mō te āhuarangi o Papatūānuku nō te mea ka tuku aua haurehu kia uru mai te ngao i te rā. Heoi, nā ngā koringa a te tangata kua piki ake te kukū o ētahi haurehu kati mahana, pēnei i te hauhā me te mewaro, i te kōhauhau. Nā tēnei i waihangaia ai he pānga 'paraikete', e whakapiki ake ana i ngā pāmahana huri noa i te ao. ²⁴
Ngā pakapaka	He huarere wera whanokē ngā pakapaka (toharite o ia rā, mōrahi, mōkito) i tētahi rohe, ā, ka tohe mai mō te rua rā karapipiti i roto i te wā wera o te tau. E takea ana tēnei i ngā āhuatanga mātai āhuarangi ā-rohe, ā, ka rekoatia ngā āhuatanga pōkākā ki tua atu i ngā pae i tūtohua.
Rā wera	He rā tunutunu taikaha i Aotearoa. I te nuinga o te wā ka tautuhia he rā ko tōna pāmahana mōrahi ka eke ki tua atu i te 25°C.
Ngā tūāhutatanga uanga ngoto	Ko te wāriu ka ekengia e whakarato ana i te 10% o runga rawa (arā, te inerahitanga 90) o te katoa o te hekenga wai ā-kaupeka. ²⁴
Te Paewhiri Tāwhana Kāwanatanga mō te Āhuarangi Hurihuri (Intergovernmental Panel on Climate Change - IPCC)	He mea whakatū i 1988 e te Rōpū Mātai Huarere ā-Ao (World Meteorological Organisation) me te Hōtaka Taiao a Te Rūnanga Whakakotahi i ngā Whenua o te Ao (UNEP), ko tā IPCC mahi he titiro i ngā mātākōrero pūtaiao, haratau hoki huri noa i te ao. Ka tāia he pūrongo aromatawai, ā, ko ēnei pūrongo e whakamahi whānuitia ana he hāngai noa hei puna mātauranga mō te āhuarangi hurihuri. ²⁴
Ngā Horowhenua	Ko te neke tukuheke o ngā onepū me ngā toka e tōia ana e te tō ā-papa ngā horowhenua. I ōna wā ka kīia anō hoki tēnei he horohoro, he horo noa rānei. Ka whakakinongia ake e ngā tūāhutatanga pēnei i te waipuke. ²⁷
Mātauranga Māori	Ko tōna whakamāoringa more ko te 'mōhiotanga Māori'. He kupukiri hōu tēnei e hao whānui ana i ngā whakaaro pēnei i ngā tikanga, me ngā uara, me ngā ariā, me ngā tautake, me ngā tirohanga me ngā orotau e pū mai ana i ngā tirohanga ahurea motuhake a te ao Māori. ²⁴
Whakamaurutanga	Katoa ngā koringa ko tōna tukunga iho, i runga i te takune, ko te whakahekenga o ngā haurehu kati mahana mā te aukati atu i te pū, whakarei ake rānei i te tangohanga mā ngā putunga. Ko ētahi taura ko te whakawhiti ki te pūngao kōmaru, pūngao hau rānei, te whakapai ake i te ārai o ngā whare ki te whakaiti i te whakapetonga o te pūngao, me te whakawhānui ake i ngā ngahere kia rahi ake te tangohanga i te hauhā i te kōhauhau.
Whakaaetanga o Parī	I 2015, i huihui katoa ngā rōpū ki te UNFCCC mō te Whakarauikatanga Āhuarangi Hurihuri a Te Rūnanga Whakakotahi i ngā Iwi o te Ao, ā, i whakaae mā te tatūnga tokitoki i te Whakaaetanga o Parī. Ko te whai a te whakaaetanga kia whakawhāitīngia te mahana haere o te ao kia iti iho i te rua takiri Tohurau me te whakapau kaha kia whakawhāitīngia te pikinga ki te 1.5 takiri Tohurau. Ko tā te Whakaaetanga o Parī he whakapiri i ngā whenua ki te whakamātau ki te kawē i ngā kohakoha hao nui ki te urutau ki ōna pānga. ²⁴
Ōrautanga	Ko te uara ka taka iho i tētahi ōrau (hei taura, 90% o ngā uara i whakarite. I te nuinga o te wā ko te 10 me te 90 o ngā uara ōrautanga e whakamahia ana hei tautuhi i ngā pae mō ngā tūāhutatanga taikaha. Hei taura, ko te pāmahana toharite o ia rā i te ōrautanga 90 ko tērā i eke tuwhene i te rā kotahi i te 10 rā. ²⁴
Ngā tūraru ōkiko me ngā arawātea	Ko ngā tūraru ōkiko me ngā arawātea ko ērā e hono atu ana ki ngā pānga i te āhuarangi hurihuri. I ōna wā he mea kōkiri ēnei tūraru me ngā arawātea e te tūāhutatanga (arā, he pā whakarere), e hono atu ana rānei ki ngā neke wāroa i ngā huringa āhuarangi (he tīmata pōturi)

²⁶ Sustainable Business Network (n.d.). Glossary of sustainability: sustainable.org.nz/learn/tools-resources/glossary-of-sustainability

²⁷ Landslides NZ (n.d.). Science: landslides.nz/science

Papakupu whāiti

Korenga tukuwaitōmiti pitomata (PED)	Ko te tukuwaitōmiti te tukanga o te āta tukutuku i ngā wai i ngā onepū ki te kōhauhau. Ka mahia tēnei mā te tōmiti arorangi me te tukuwai i ngā tupu. I te eke haere o te kaupeka tupu, i te nuinga o te wā ka tuwhene i te uanga te ngaronga o ngā wai i te onepū mā te tukuwaitōmiti, me te aha ko tōna tukunga iho ko te pikinga o te korenga o te haumākū onepū. Ko te huatango i waengarahi i tēnei āhuatanga (arā, te tukuwaitōmiti pitomata) me te tukuwaitōmiti pitomata tūturu, e tautuhia ana ko te korenga tukuwaitōmiti pitomata. Tūturu, ko te PED te rahi o te wai e matea ana e te hawai, e matea ana rānei kia whakapunia e te uanga, hei tiaki i te tupunga o ngā tupu i ngā pae, kāore e mauria e te kōpaka wai onepū. ²⁸
Manawaroa	Ko te kaha o tētahi pūnaha pāpori, māori rānei, ki te miti i ngā pororaru, otirā, ka mau tonu ki te hanganga waiwai kotahi me ngā huarahi ki te mahi, me te raukaha ki te urutau ki te ahotea me te panonitanga. ²⁴
Pūāhua	He whakaaturanga wanea noa iho, ā, i te nuinga o te wā he whakawaiwai hoki o te āhuarangi o te āpōpō. E takea ana tēnei i ngā hononga mātai huarere ā-roto i waihangatia e mau pūmau ana kia whakamahi takunetia i te whakatōmene i ngā pānga pitomata o te āhuarangi hurihuri pūtangata. Whakamahia ai tēnei hei whāurunga ki ngā tauira pānga. ²⁹
Ara tukutuku	He whatunga i waengarahi i tētahi umanga me ana kaiwhakarato ki te whakaputa me te tiri i tētahi hautaonga ki te kiritaki whakamutunga. ³⁰
Ngā tūraru whakawhitinga me ngā arawātea	Ngā tūraru whakawhitinga me ngā arawātea ka ara ake i te nekehanganga o ngā pūnaha ā-ao ki tētahi āpōpō whakaiti waro.
Taonga Māori	E hāngai ana tēnei mea te Taonga Māori ki ngā taonga tūturu, whakawairua hoki e tino wāriutia ana e te ao Māori.
Ahiniwha	I Aotearoa, ka whakaurutia ngā ahi nehenehe, tahora, ururua e taea ana te whakamōrea i ngā tauoranga me ngā papanoho. Heoti, he tikanga tauwhāiti tō te 'ahi ngahere' e hāngai ana ki ngā ahi i ngā ngahere, engari, ka kī ōpakingia e te ao pāpāho, me te marea i Aotearoa me Ahitereiria.

²⁸ NIWA (n.d.). Ngā tūtohi waitohu tauraki: niwa.co.nz/climate-and-weather/nz-drought-indicator-products-and-information/drought-indicator-charts

²⁹ Flato G, Marotzke J, Abiodun B, et al. Te Aromatawaitanga o ngā Tauira Āhuarangi. Nō: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press: ipcc.ch/report/ar5/wg1/

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Me mōhio koe ki ō tūraru	Te tautohu i ō tūraru me ngā arawātea	<p>Manaaki Whenua (2021). He huringa ā huarangi he huringa ao: a changing climate, a changing world: landcareresearch.co.nz/assets/researchpubs/He-huringa-ahuarangi-he-huringa-ao-a-changing-climate-a-changing-world.pdf</p> <p>Ministry for Environment (2021). A Guide to Local Climate Change Risk Assessments: environment.govt.nz/publications/a-guide-to-local-climate-change-risk-assessments</p> <p>Ministry for the Environment (2022). Climate action for Māori: The national adaptation plan: environment.govt.nz/publications/climate-action-for-maori-the-national-adaptation-plan</p> <p>Tātaki Auckland Unlimited (2021). Tāmaki Makaurau Economic Climate Change Risk Assessment: knowledgeauckland.org.nz/publications/tamaki-makaurau-economic-climate-change-risk-assessment</p>
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