

# Inanga

He aha • Kei hea • Te take • He pēhea



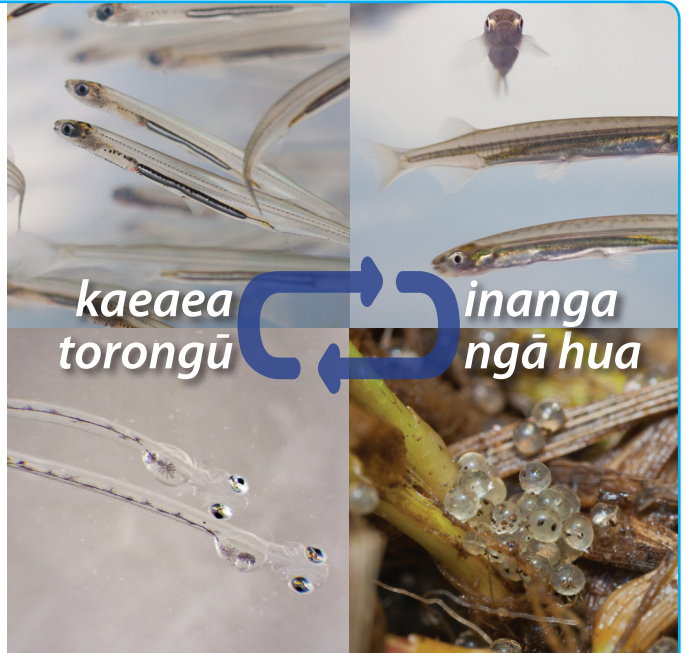
## HE AHA te inanga:

Ko te 'kaeaea' te ingoa whānui mō te wāhanga pūhou o ngā momo e rima o Aotearoa o te whānau ika e kīia ana ko Galaxiidae. Ko te 'inanga' te ingoa o te wāhanga pakeke o tētahi momo kaeaea 1 o ngā mea e 5 Galaxias maculatus.

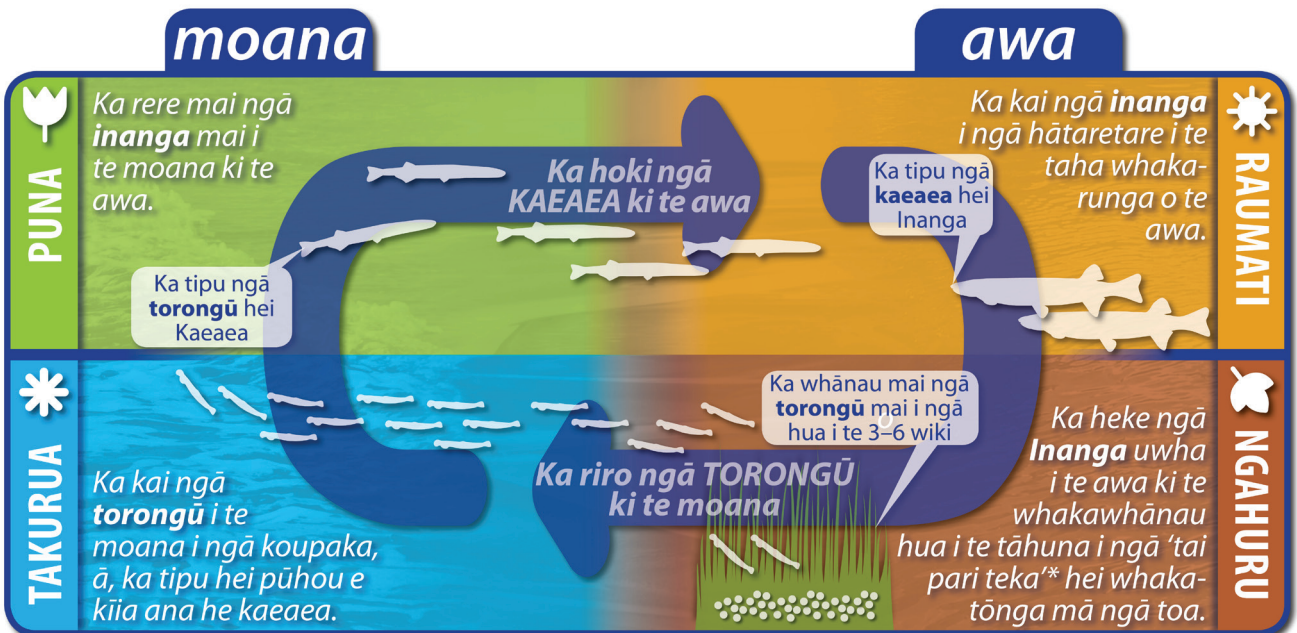
Ko te inanga te mea iti rawa o ā tātau momo kaeaea, kāore e roa ake te tipu i te 110 mm.

Koinei anake te momo kāore e taea te piki ārai – arā ko te tikanga he āhuatanga ahurei ōna mō tōna oranga.

He diadromous rātau – ko te tikanga o tēnei ka noho rātau i ngā wāhi wai moana me te wai māori.



## Inanga lifecycle



\* TAI TEKA – he tai i muri tonu mai i te kōwhiti, rākaunui rānei, i te wā e tino nui rawa te rerekē i waenga i te wai teitei me te wai pāpaku.

I tō rātau wā toene i te pito o te raumati/ngahuru, 1,500–3,000 ngā hua ka whakawhānauhia e ngā inanga. He moroiti – e 0.8–1.25 mm te rahi o ia hua.

I te ekenaga o te kotahi marama ka paopao mai hei torongū 7 mm te roa. Mō te wiki tuatahi ka kai rātau mai i tō rātau poi ioka e tāpiritia ana, kātahi ka tīmata ki te kai i ngā tipu me ngā kararehe iti. Ka puta rātau ki te moana mō te wā atu ki te ono marama. Ko te whai torongū maha rawa ko te ritenga o te inanga ki te "kaua e raua katoatia ō hua ki te kete kotahi", arā, ki te tino raruraru kāore e ngaro te katoa.

Ka rapu haere ngā pūhou (ka kīia ināiane he 'kaeaea') i te ara ki ngā awa i roto rōpū nui/pīranga mā te hongihongi i te wai māori. Ka piki whakarunga, engari he ngoikore ki te kau, ka mutu kāore e taea ngā ārai te piki, hei tauira, ngā tāheke/wairere/ahuriri/karawata, aha atu, aha atu. Ko te nuinga o ngā kaeaea kāore e ora i tēnei haerenga i te mea ka matekai, ka kainga e ngā kaikonihī, ka mau rānei i ngā kaihao.

Ka tipu hei pakeke i te awa mō te takiwā pea o te ono marama. Kua reri rātau ki te hoki whakararo me te whakawhānau i ā rātau ake hua (toene) i te kotahi tau.

## Ā mātau momo inanga e 5

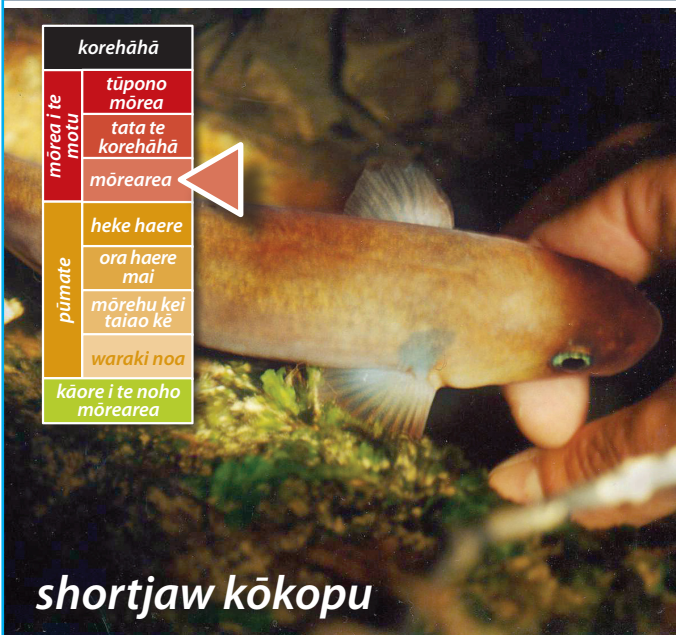
TĒ taea e te inanga te piki ārai... hāunga ētahi atu o ngā momo e 4

korehāhā	
mōrea i te motu	tūpono mōrea
	tata te korehāhā
	mōrearea
pūmate	heke haere
	ora haere mai
	mōrehu kei taiao kē
	waraki noa
kāore i te noho mōrearea	



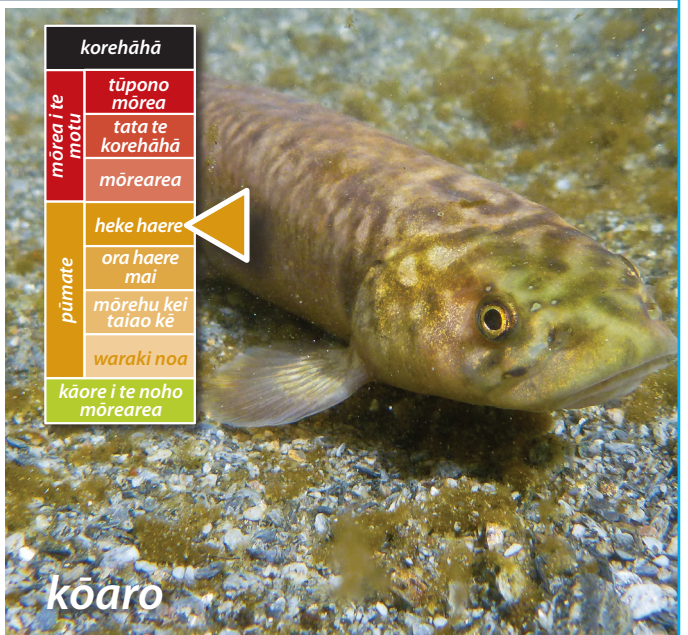
inanga

korehāhā	
mōrea i te motu	tūpono mōrea
	tata te korehāhā
	mōrearea
pūmate	heke haere
	ora haere mai
	mōrehu kei taiao kē
	waraki noa
kāore i te noho mōrearea	



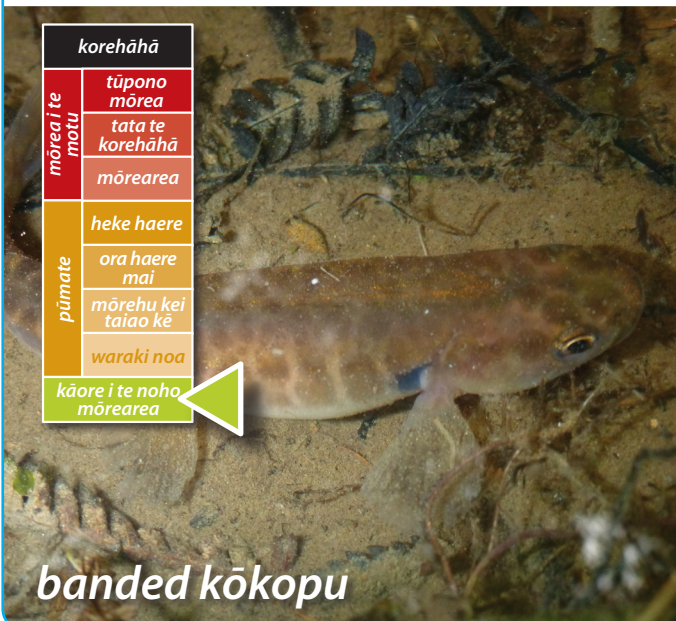
shortjaw kōkopu

korehāhā	
mōrea i te motu	tūpono mōrea
	tata te korehāhā
	mōrearea
pūmate	heke haere
	ora haere mai
	mōrehu kei taiao kē
	waraki noa
kāore i te noho mōrearea	



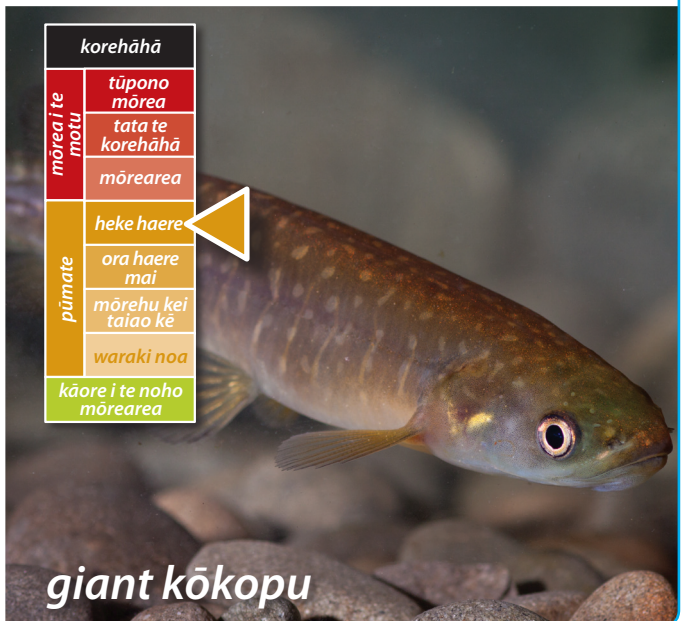
kōaro

korehāhā	
mōrea i te motu	tūpono mōrea
	tata te korehāhā
	mōrearea
pūmate	heke haere
	ora haere mai
	mōrehu kei taiao kē
	waraki noa
kāore i te noho mōrearea	



banded kōkopu

korehāhā	
mōrea i te motu	tūpono mōrea
	tata te korehāhā
	mōrearea
pūmate	heke haere
	ora haere mai
	mōrehu kei taiao kē
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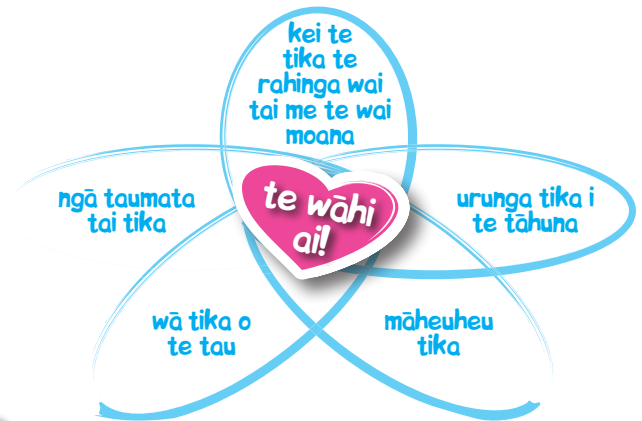
giant kōkopu

# KEI HEA rātau e noho ana, ā, e whakawhānau i ā rātau hua:



## Ko te whai i te nōhanga toene tika - 'te wāhi ai' – he whakatauritenga uaua o ngā āhuatanga maha.

Ko ngā raruraru ko te noho mōrearea o ngā pakeke ki ngā kaikonihī ina kuhu rātau ki ngā wai pāpaku toene ai - nō reira ka āhua tiakina rātau e ngā māheuheu e puea ake ana mai i ngā tuna hiakai me ngā manu noho awa. Me noho mātao me te mākū tonu ngā hua inanga i te wā kei waho i te wai. Ko ngā māheuheu tauwharewhare, tāhuna hoki e taumarumau ana i ngā hua ka noho pēnei i te hamarara i te awatea me te paraikete i te pō.



## NGĀ NŌHANGA TOENE PAI MŌ NGĀ INANGA

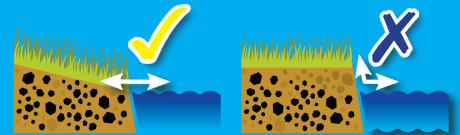
### Te tawhiti tika mai i te moana



Ko ētahi wāhanga o tēnei wai he tino pai rawa hei toene inanga nā te tūtata ki te moana. Ka toene ai i ngā wāhi e taea ai ngā tai teka teitei, engari kāore i te tino totetote te wai. I te wā o ngā tai teka ka taea e ngā inanga ā rātau hua te whakawhānau i ngā māheuheu kei runga ake i ngā tāhuna, i runga ake i te teitei rerenga noa o te awa.

### He tāhuna rōnaki

Ko te mea pai kia rōnaki te tāhuna, kia kua he taha tūpou. Ko te tikanga he nui ake ngā wāhi o te tāhuna ka taea mō te whakawhānau a ngā inanga i ā rātau hua i te wā o te tai teka teitei.

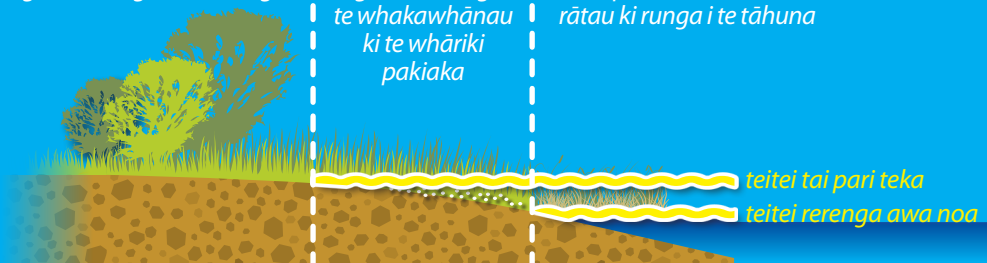


## Kei te tipuria te tāhuna e te māhuehue

Ngā whakamarumarū rākau/mauwha māori – he whakarato marumarū mō ngā hua me te kore o te ngahoro o ngā rau ki runga

Otaota mātotoru roa – kia taea ngā hua inanga te whakawhānau ki te whāriki pakiaka

Ngā tipu e puea ake ana i te wai – hei huna i ngā inanga kia tae mai te tai pari teitei hei whakahoki i ā rātau ki runga i te tāhuna



# TE TAKE e itiiti haere ana ngā inanga me te take e whakamate atu ana mātau:

Kei hea koutou?



**Kei te heke haere ngā taupori ika māori o Aotearoa.**

He pai ake ngā inanga i te nuinga i te mea he whānui ō rātau hiahia, arā he tuwhera rātau ki ngā wāhi noho mō rātau me ā rātau kai. Ko tētahi mate ko tā tātau tūkino i ngā nōhanga toene o ngā momo e 90% o ngā kaeaea e haohia ana e tātau.

Heoi, ko te nōhanga e hiahiatia ana kia ora ai ngā hua kei te kino, kua kore rānei.

**Iti iho ngā hua = iti iho ngā inanga!**

Ka mutu, he kaha te kai a ngā kaikonihī o tāwāhi (te taraute te mea kaha) i ngā pākeke me te huri i tō rātau whanonga e kore nei e taea e ngā inanga te rapu kai.

**koiora-kanorau nui = pūnaha rauropi hauora  
...he nui ngā kai mā te KATO!**



## Ko te tūkino i ngā nōhanga inanga, kāore e whāiti ki ēnei...

### Nōhanga toene:

- Tūkino a ngā kararehe pāmu.
- Ngā huringa ā-tangata ki ngā hanganga tāhuna tūturu.
- Te tapahi i ngā māheuheu roa o ngā tāhuna i te wā toene.
- He nui rawa ngā waipara i ngā tāhuna, e tāmia ana ngā māheuheu.
- Te whakatū ārai e aukati ana i ngā urunga o ngā inanga ki ngā wāhi toene, hei tauira ngā kēti tai.

### Nōhanga pakeke:

- Te whakatū ārai e aukati ana i te piki whakarunga o ngā inanga ki te kai, hei tauira, ngā kēti tai, ngā ahuriri, karawata, aha atu, aha atu.



te tūkino a ngā kararehe ki ngā tāhuna



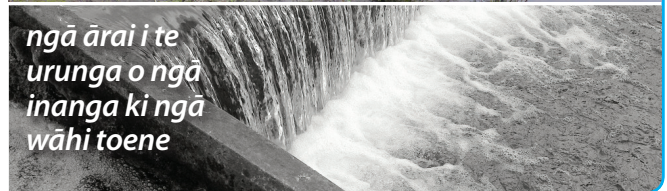
ngā huringa ā-tangata ki ngā tāhuna tūturu



te tope otaota i ngā tāhuna i te wā toene



he nui rawa ngā waipara i ngā tāhuna



ngā ārai i te urunga o ngā inanga ki ngā wāhi toene

## ME PĒHEA tā tātau āwhina:

**He pōturi te hoki mai anō o ngā māheuheu tāhuna me ngā nōhanga toene inanga mai i te tūkinotanga.**

Ka hokihoki tonu mai te inanga ki te wāhi kotahi i te awa ki te toene, nō reira ka hoki mai rātau ki ngā wāhi tūkinō ka whakamātau ki te toene...engari ka mate ā rātau hua. Nō reira he mea nui rawa kia tiakina e tātau ō rātau wāhi toene pai kei te toe, me te whakapai/whakaora i ērā kua tūkinotia.

## Ko ngā mea ka taea e tātau te āwhina...

### I te wā poto:

- Te whakauru mai i ngā pēra hei nōhanga toene. Ko ngā wāhi mākūkū, mātao i waenga i ngā pērā he wāhi rangitahi pai rawa hei toene kia tika rā anō mai ngā rongoā wā roa.

### I te wā roa:

- Taiapa atu i ngā kararehe.
- Whakatinana i te mahere whakatipu i ngā tāhuna.
- Whakatenatena i ngā mana kia arotaketia ngā rautaki whakapai i ngā tāhuna.
- Whakakore i ngā kēti tai me ētahi atu ārai e aukati ana i te piki o ngā inanga i te awa.
- He tino puiaki ngā hua inanga. Ko ngā whakamarutanga anake kia kaua rātau e kainga e ngā kaikonihī, ko ngā māheuheu e tipu nei rātau i roto. Ka hunaiā ngā hua e ngā māheuheu tāroa, mātotoru, ā, ka uua te taea e ngā kaikonihī. Mēnā ka taea e koe ngā māheuheu te tiaki, te whakaora rānei ka iti ake te whakararuraru a ngā kīrearea.

### HEI PĀNUI ANŌ ME NGĀ RAUEMI ATU ANŌ:

- McDowall, R. M. (1984). *The New Zealand Whitebait Book*. Wellington, Reed.
- Mitchell, C. P. and G. A. Eldon (1991). *How to locate and protect whitebait spawning grounds*. Rotorua, Freshwater Fisheries Centre.
- Richardson, J. and M. J. Taylor (2002). *A guide to restoring inanga habitat*. NIWA Science and Technology Series 50: 1–29.

whakauru i tētahi nōhanga toene rangitahi



titiro hoki hua i roto i te noho rangitahi



hua i roto i te noho rangitahi



Kei te tautokona te Kaupapa Mātauranga Toene Inanga ā-Motu e...



AQUATIC SCIENCE & VISUAL COMMUNICATION

