

Tuna kuwharuruaru

New Zealand longfin eel



Fresh Water Early Childhood Education Resource



the

KAITIAKI

**OF RIVERS, LAKES
& STREAMS**

Includes ready-to-go craft
template and song poster



Fast facts
Active song & story
Links & images to
aid learning

Cover and contents photos of
tuna by Jason Gunn-Burton
For more of Jason's amazing
eel photography see [here](#)



This Early Childhood Education Resource has been
provided by Taupō for Tomorrow.
For more healthy freshwater educational resources see
www.taupofortomorrow.co.nz

Questions or feedback? educator@doc.govt.nz



Department of
Conservation
Te Papa Atawhai

Tongariro 
National Troutcentre Society

Contents

Learning about tuna

Learning Inquiry Cycle	01
Tuna facts	02
Where do tuna live?	03



Useful resources	04
Activities	05



Activity resources

Tuna peg puppet template	07
Tuna in the awa song poster	08
Healthy home for tuna activity	09
Linking to Te Whaariki	10



Tuna learning inquiry cycle

1

Dive in

What do we know already?
What theme do we want to base our learning on?

- Encourage tamariki to share any experience or knowledge they have of longfin eels/tuna kuwharuwharu.
- Introduce knowledge (see Tuna Facts pg.2).

6

Review & reflect

What happened as a result of your teaching?

- What conservation outcomes occurred?
- What are the implications for future learning / teaching?

2

Ask

What are we wondering about eels? What questions will we investigate?

- Eg. what do longfin eels need for a healthy home? (pg.3)
- Where do longfin eels live in our area? (use local knowledge or check the list on pg.3)
- What historical relationships do iwi in your area have with tuna?
- Check out the list of resources available (page 4).

5

Taking action

What can we do to protect tuna / longfin eels? How can we do this?

- Keep our waterways clean for longfin eels to have healthy homes by organising a rubbish pick up.
- Plant native plants around water ways to provide shade and habitat by joining a local restoration group.

3

Investigate

How will we answer our questions? What are the opportunities for learning, exploring & investigating?

- You could visit a local stream or nature park to view longfin eel (pg.3) or view online footage (pg.4).
- Read a story book about tuna (pg.4).
- Investigate the longfin eel life cycle (pg.2), learn an action story (pg.6) or song about tuna migration (pg.6).

4

Sharing findings

What did we find out?
What are we going to do with our new learning?

- Make a display of longfin eel paintings or create a healthy stream collage using recyclable materials
- Print out the healthy stream activity (pg.10).
- Perform 'Tuna in the awa' (pg.5) or a tuna peg puppet show (template pg.8) for other children, teachers or whanau.

Adapted from the Department of Conservation learning inquiry cycle for environmental education, for more detail [see here](#)
Photo: S. Urwin

TUNA FACTS

Tuna kuwharuwharu (Te Reo Māori for longfin eel) are a very important taonga for tangata whenua. They were an important source of kai, knowledge and seen as kaitiaki of our streams, rivers and lakes. Historical & current pressures on tuna, such as over fishing and habitat loss, have resulted in their decline.

1 BIGGEST FRESHWATER EEL

Longfin eel are the biggest freshwater eel in the world and are our top freshwater predator. Males grow up to 1m long. Females can grow to 2m in length!

2 ONLY IN NEW ZEALAND

Are endemic – found nowhere else in the world.

3 SUPER SENSE OF SMELL

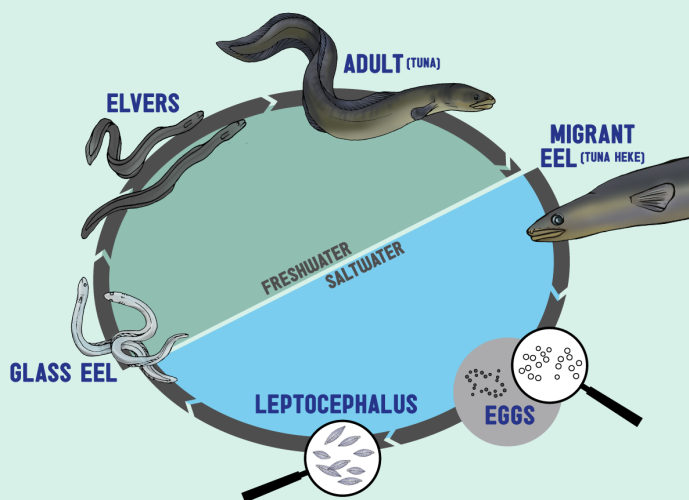
Tuna have bad eyesight but an amazing sense of smell (their nostrils stick out from the end of their nose).

4 NIGHT FEEDERS

Come out at night to feed on insect larvae, snails, fish, kōura, dead animals and birds.

5 AMAZING LIFE STORY

Longfin eels have an amazing lifecycle (see above), they can live 60-100 years!



Click [here](#) for a more in-depth look into this amazing life cycle.

6 BACKWARDS TEETH

Tuna have small rows of small sharp teeth that point backwards

7 SLIMY SKIN

Tuna have slime that helps them to breed and protects their skin out of water. They produce more slime when stressed and absorb 50% of their oxygen through their skin.

8 CRAFTY CLIMBERS

Young eels are called elvers and some can climb 40 metre high obstacles!

Where do tuna live?

Longfin eels / tuna can be found throughout New Zealand and are usually found in rivers and inland lakes.

They prefer **cool, clean** and **clear** water with lots of shade from **trees** and **insects**, **kōura** and **snails** to eat.

Tuna like **pebbles, stones** and **rocks** to crawl over, and **stable banks** to hide under.

Tuna are very sensitive to **pollution** from **farms, houses** and **industry** into waterways which reduces oxygen in the water for them to breathe.

Drainage, hydro & irrigation schemes as well as **dams** reduce their habitat and ability to migrate.

Plan a trip!

Ask your centre whānau and use local knowledge to see if there are places in your area where you can view tuna. Try public reserves with streams and nature parks (or see the list below for suggestions). Check the water safety code if you can **safely supervise children there around the water**, take bloody meat scraps, mince or eggs (if allowed) and remember that tuna might try to nibble on little fingers!

North Island

Auckland / The Auckland Zoo
 Piha / The bridge at the end of Glenesk Rd or Kitekite Falls
 Coromandel / Waihi Beach Top 10 holiday Park
 Norsewood / The Wopwops Wetland Park
 Tāurangi / Tongariro National Trout Centre
 New Plymouth / Hautoki Stream off Devon St West
 Mount Bruce / Pukaha National Wildlife Centre
 Masterton / Queen Elizabeth Park II
 Porirua / Battle Hill Forest Farm Park, Pauatahanui
 Waikanae / Ngā Manu Bird Sanctuary

South Island

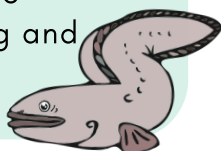
Nelson Lakes / The jetty at St Arnaud, Lake Rotoiti
 Motueka / Jester House Cafe, Aporo Road
 Wanaka / Main beach front, Lake Wanaka
 Christchurch / Otakaro (Avon) River, by Antigua Boatsheds



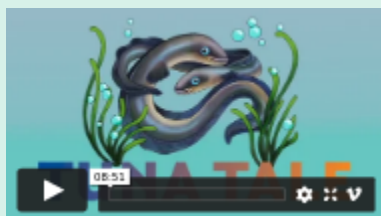
Useful resources

GREAT ONLINE RESOURCES:

We have created [this action packed Padlet](#) full of videos and online resources for educator learning and sharing.



TO SING:



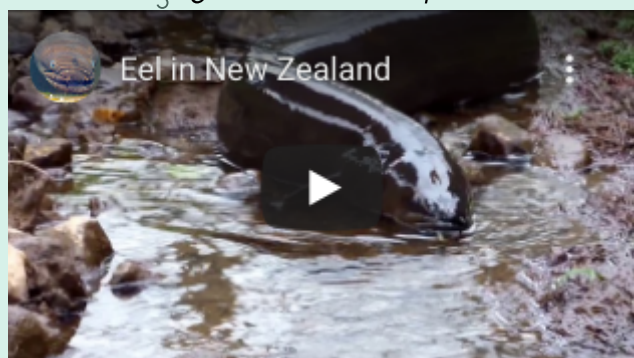
An amazing educational song about all about tuna by Tanya Batt.

TO WATCH:

Learn about longfin eels at Auckland Zoo



Watch a longfin eel move up a stream



TO READ:

Watercress tuna and the children of Champion Street by Patricia Grace; illustrated by Robyn Kahukiwa. 1985.



Available in most local libraries and New Zealand bookshops.

Eel Song by Amber McEwan ; illustrated by Sonia Frimmel. 2016.



"Join Aotearoa's amazing longfin eels on their migration from the silver-cold streams, rivers and lakes in which they grew up, to the tropical Pacific Islands far away.

Available via Papawai Press and libraries.

TO COLOUR IN: TUNA/LONGFIN EEL FACTSHEET

Click the image below to download English & Te Reo Junior colouring in fact sheets.



Activities

Tuna peg puppet

Make these simple peg puppets using the template (pg.7) using paper, crayons, double-sided tape and wooden pegs. Create a display or puppet show to share what you have discovered about tuna.

- Wooden clothes pegs are available at craft stores or The Warehouse. After the peg has been used as a peg puppet it can be re-purposed as an artwork or clothes peg. When printing the template, the thicker paper the better, to prevent bending and ripping of the puppet.
- If no double sided tape is available, PVA glue requires longer to dry but creates a better bond than paper glue, especially if child presses down for several moments to bond the paper to peg.
- Extend the activity by acting out the story Watercress Tuna and the children of Champion Street (pg.4) or children could create their own 'gifts' like the tuna in the story and hold them in the puppet mouths i.e. mini poi



Tuna action song

Use the song poster (pg.8) to sing this waiata about tuna migration to the tune of "Twinkle twinkle little star". Use the suggested hand actions below or encourage children to make up their own.



Tuna in the awa

Tuna tuna (*palms together swimming in 's' shapes*)
 In the awa (*wave motions with hands*)
 Are you going near (*point to ground*)
 Or far? (*look to distance, hand above eyes*)
 Are you swimming out to sea? (*tuna swimming motion again*)
 Or still growing in your stream? (*crouch down then stretch up*)
 Tuna tuna (*palms together swimming in 's' shapes*)
 In the awa (*wave motions with hands*)
 Are you going near (*point to ground*)
 Or far? (*look to distance, hand above eyes*)

Activities continued

Life cycle action story

Act out the life cycle of tuna (see photos for ideas). Use the life cycle information on page two and [this video](#) to get ideas for your story telling with actions.

- *Hatching - larvae* - crouch down into a small egg shape then slowly reach up and grow to become a larvae, drifting from side to side on ocean currents
- *Glass eel* - as you get closer to New Zealand's shores, use scent to navigate towards a stream
- *Elver* - make a journey up stream, climbing waterfalls and other obstacles until you find a nice pool to live with lots of kai and places to hide to grow into adulthood
- *Migrant tuna / tuna heke* - start swimming the long journey back to the ocean, crouch again into an egg shape to complete the life cycle.

Migration obstacle course challenge

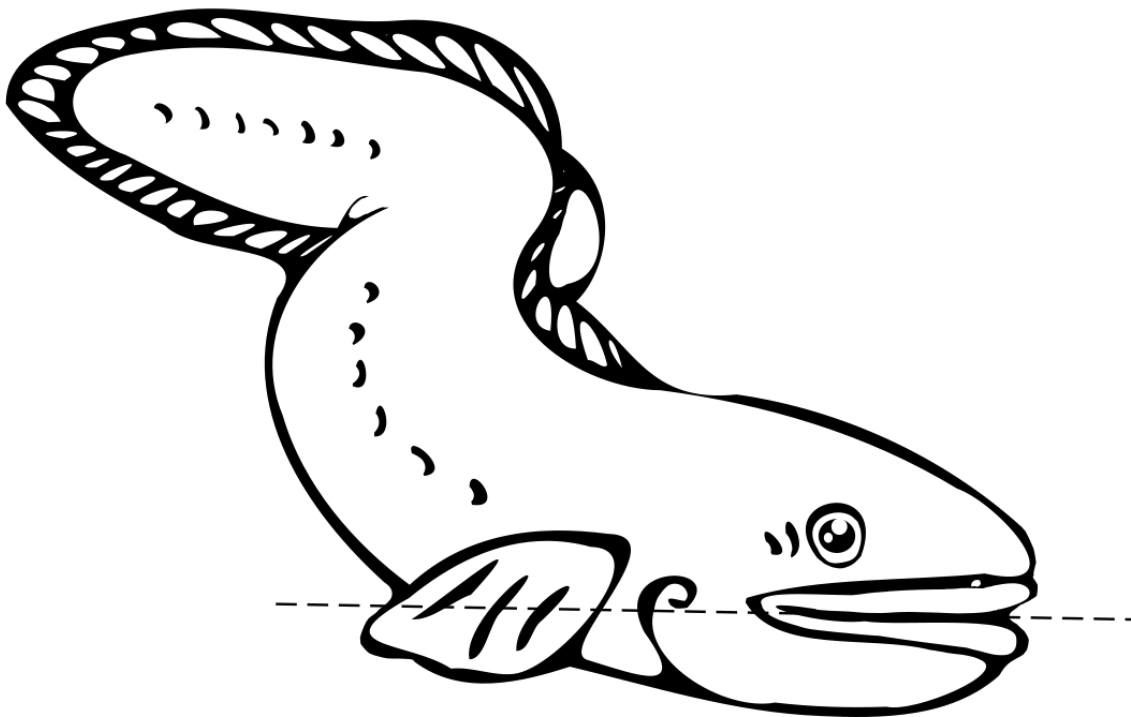
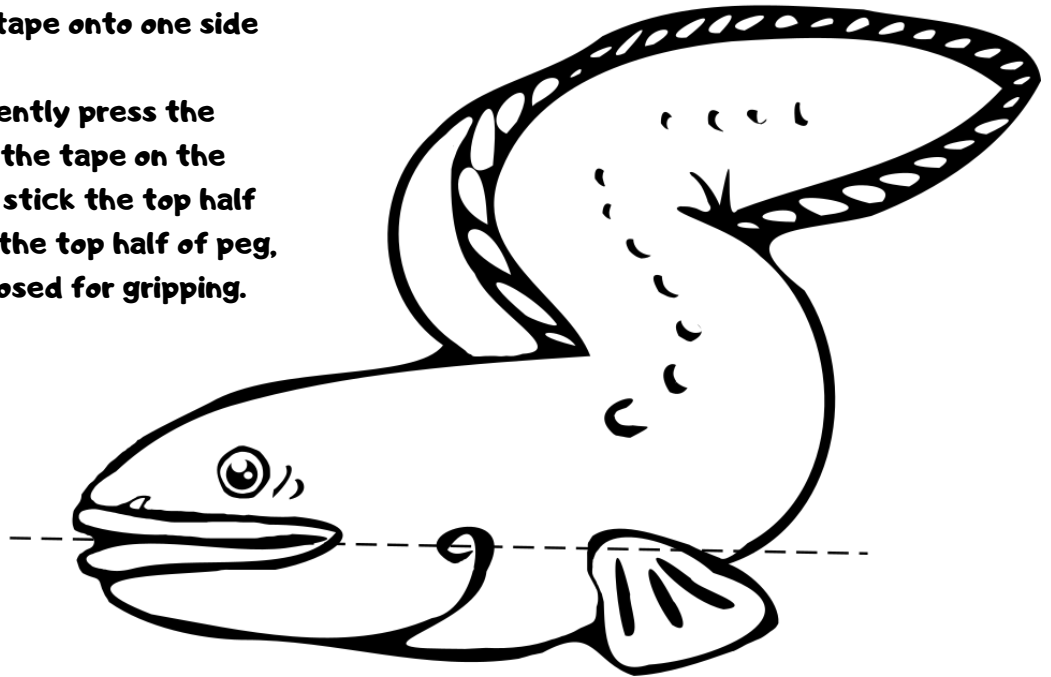
Make an obstacle course to recreate the journey tuna must make to their breeding ground near Tonga and the modern challenges that they face.

- Create a course that begins with a stream and ends in the ocean - children could be the tuna or carry objects representing tuna life cycle stages to move through the course and reach the end.
- Climbing obstacles could represent dams and waterfalls for tuna to climb up and over.
- Use hoops and tunnels to jump and climb through to mimic the drains & culverts that tuna must navigate through.
- Fill a water tray with clean plastic bottles etc. to represent rubbish for tuna to get past.
- Create a turbine out of ropes or sheets and move them in circles for children to climb through.



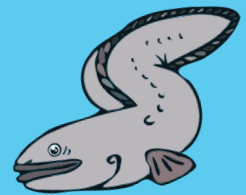
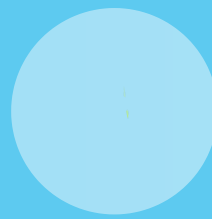
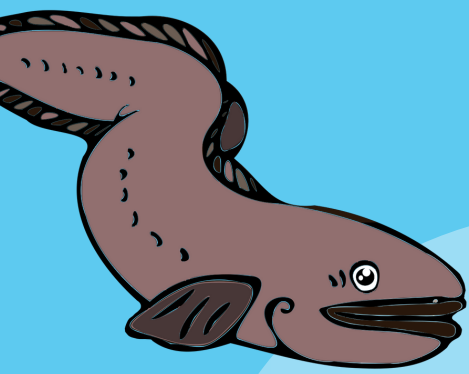
Tuna peg puppet template

- Colour in your tuna & cut out carefully.
- Cut tuna into two parts along the dotted line then stick double-sided tape onto one side of each half of the peg.
- Using the reverse side, gently press the bottom half of tuna onto the tape on the bottom half of peg. Next stick the top half of tuna onto the tape on the top half of peg, leaving the peg ends exposed for gripping.



For more fun fresh water educational resources:

www.taupofortomorrow.co.nz



Tuna in the awa

(To the tune of twinkle twinkle little star)

Tuna tuna in the awa

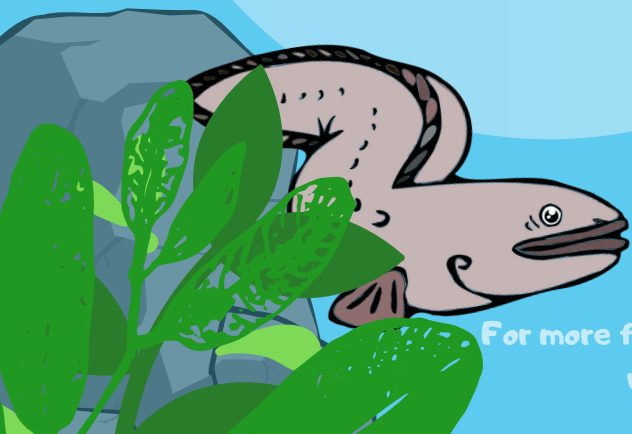
Are you going near or far?

Are you swimming out to sea?

Or still growing in your stream?

Tuna tuna in the awa

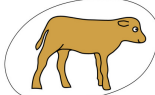
Are you going near or far?



WHAT MAKES A HEALTHY HOME FOR TUNA?

Create a healthy home for tuna / longfin eel using the activity sheets on our website, you can choose the full colour option or have fun colouring in the black & white option (work best when printed A3).

Print out the activity from the links above, cut out the images and ask children to place on the background picture to make a healthy or unhealthy home for tuna. Discuss the differences between the two using page three and the key below to help you. Can they come up with ways to make an unhealthy stream healthier?



Livestock from farms
erode stream banks, eat
vegetation & poo in
water



Native plants & trees
for cover, bank stability,
shade and places to hide
for fish & insects



Rubbish pollutes the
water, reduces
visibility



Rocks and pebbles for
resting and hiding
places for freshwater
fish & insects



**Freshwater insects &
snails** provide kai for many
species, need clean water
& places to hide



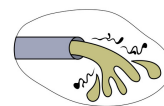
**Kōura / Freshwater
crayfish** need places
to hide and insects to
eat



**Australasian bittern/
Matuku** a rare native
wetland bird that is very
good at hiding



**Tuna kuwharuwharu/
longfin eel** needs
clean, clear, cold fresh
water



Waste water from
industry pollutes water
& reduces oxygen
content

Linking to Te Whāriki



Strand 2 - Belonging | Mana whenua

Goal 1: Children and their families experience an environment where connecting links with the family and the wider world are affirmed and extended

Learning outcomes:
Over time and with guidance and encouragement, children become increasingly capable of making connections between people, places and things in their world | te waihanga hononga; and taking part in caring for this place | te manaaki i te taiao

Strand 4 - Communication | Mana reo

Goals 1-4: Children experience an environment where: they develop non-verbal & verbal communication skills for a range of purposes. They experience the stories and symbols of their own and other cultures. They discover different ways to be creative and expressive.

Learning outcomes: Over time and with guidance and encouragement, children become increasingly capable of making sense of their worlds by generating and refining working theories | te rangahau me te matauranga.

Strand 5: Exploration | Mana aotūroa

Goal 4: Children experience an environment where they develop working theories for making sense of the natural, social, physical, and material worlds.

Learning outcomes:
Over time and with guidance and encouragement, children become increasingly capable of making sense of their worlds by generating and refining working theories | te rangahau me te matauranga.



Thank you to the
kaiako & tamariki of
My Treehut for your
input into this resource.



Tongariro 
National Troutcentre Society



Department of
Conservation
Te Papa Atawhai