

Tuna / NZ Long Fin Eel Migration & Life Cycle Game

This game demonstrates how our native long fin eels migrate to Tonga to breed, and all the obstacles they face along the way.

Once we have made it to Tonga, follow the life cycle of the eel all the way back to Aotearoa!!

See the amazing journey our Tuna make to live out their lives in our rivers and lakes.

What you will need:

- Large area to walk around, eg a school field, up and down a riverbank or a large classroom or school hall.
- Print out of obstacles and life cycle stages or something to demonstrate each.
- Some tamariki ready to learn and have fun!



How the game works:

1 - Place all of your obstacles around the area you will be walking, have obstacles up one side of your classroom or field. Then the life cycle changes along the other side of the same area you will be walking. The idea is you will loop up one side then back down another side.



2 - Your tamariki are happy tuna/eels living in our NZ rivers and lakes, until one day you know its time to migrate to Tonga to breed! Its time to start walking/swimming our way up stream towards the Pacific Ocean - make your way to the first obstacle!

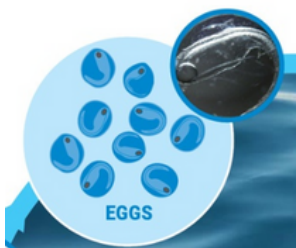


3 - Oh no you have reached your first obstacle!! talk about what obstacle you have reached, ask the tamariki if they know how the eels might deal with this obstacle. After a discussion tell them how we address each obstacle. Then it's Paper, Scissors, Rock to see who gets past the obstacle! Those who do not get past the obstacle still get to follow along on the journey.

4 - Make your way through all the obstacles until you reach Tonga!! How many Tuna/eels made it? Can you see how hard it can be for our Tuna to make their way to Tonga to breed and help their species survive?



Now it's time to breed and make our way back to NZ!



5 - Now start making your way up the opposite side of your migration area. Along the way you will come across different environments where the eel changes to the next stage of its life cycle. Stop at each environment marker and see what tamariki can guess what stage of the life cycle happens here.

6 - Make your way back to NZ through the different stages of the life cycle until you are a big happy eel back in our rivers and lakes thriving again!!



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Tuna/Eel Obstacles and Solutions -

DAM'S AND HYDRO PLANTS



Dam's & Hydro plants can block eels access while migrating up stream back to the Pacific Ocean.

Some companies have put in eel elevators to help collect eels as they swim upstream and lift them up over the dam. In some areas of NZ local iwi will help collect eels and carry them by hand up around the dam obstacles as well!



PERCHED OR ELEVATED CULVERTS



Perched or elevated culverts are often too high for eel to reach, stopping them from being able to carry on upstream while migrating.

Some clever kiwis worked out they could upcycle old mussel ropes to give the eels something to climb up to pass through the culvert. Eels are great climbers!



NEW ROADS



When putting in a new road, this can sometimes mean covering up small streams that eels may use to help migrate to the ocean.

To help keep access for the eels and other freshwater species, we can put in culverts to help the eels pass by the new road safely.



TOXINS IN WATER



Eels have a very keen sense of smell and they can detect pollutions or toxins in the water. They will not enter any water that they feel is unsafe - but then how do they get past?

Our eels are actually very clever and can pass by on land if it is damp enough. If they can quickly and safely pass by on land, they will. Otherwise they will swim back and find another way out via another stream.



CATTLE CROSSINGS



Sometimes cattle or other livestock need to pass through streams to get to where they are going - this can unfortunately pollute water making it hard for eels to pass through.

Luckily, we have some great farmers here in NZ who put in things like small bridges for the cattle to cross over the river on or even culverts for eels to pass through safely.



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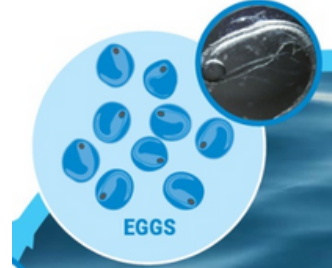
Environmental Changes and Eel Life Cycle -

OCEAN WATERS OF TONGA



Once the eels make it to the warm waters of Tonga this is where they breed.

The female eel will release her eggs ready to be fertilized by the male eel. These eggs will then drift in the ocean current making their way towards NZ.

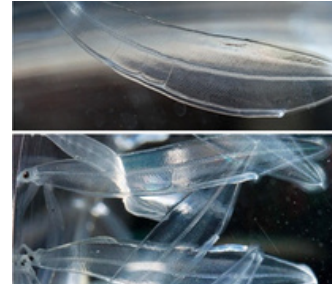


PACIFIC OCEAN



The eel eggs will float along in the currents of the Pacific Ocean and slowly start to change.

Eel eggs will hatch into leptocephalii, a leaf shaped larva. These larvae will float along in the currents of the Pacific Ocean for approximately 9-12 months until they reach Aotearoa.



NZ SEA BEDS & RIVER MOUTH



The leptocephalii / larvae will float along in the current until they reach the seabed and river mouths of Aotearoa - what stage do you think they are now?

When the Larvae reach the seabed and river mouths of NZ, they will now be glass eels. Glass eels are a small, semitransparent eel that is about 60-70cm long.



NZ WETLANDS & RIVERS



As the tiny glass eels make their way up the river mouths and into the wetlands and rivers they continue to change - now they are starting to look a bit like something you might recognise.

Over several weeks as the glass eels make their way up our NZ rivers they will slowly darken up and start growing. They are now called elvers, now they even look like tiny wee baby eels!!



NZ RIVERS & LAKES



The tiny wee elver eels will continue to grow and get bigger and bigger until they find a nice home to live in our rivers and lakes.

Once the eels make it into our rivers and lakes they will continue to grow and thrive for many many years, eels can live up to 100 years! And they migrate to Tonga to breed at the end of their life cycle. Aren't they amazing!

