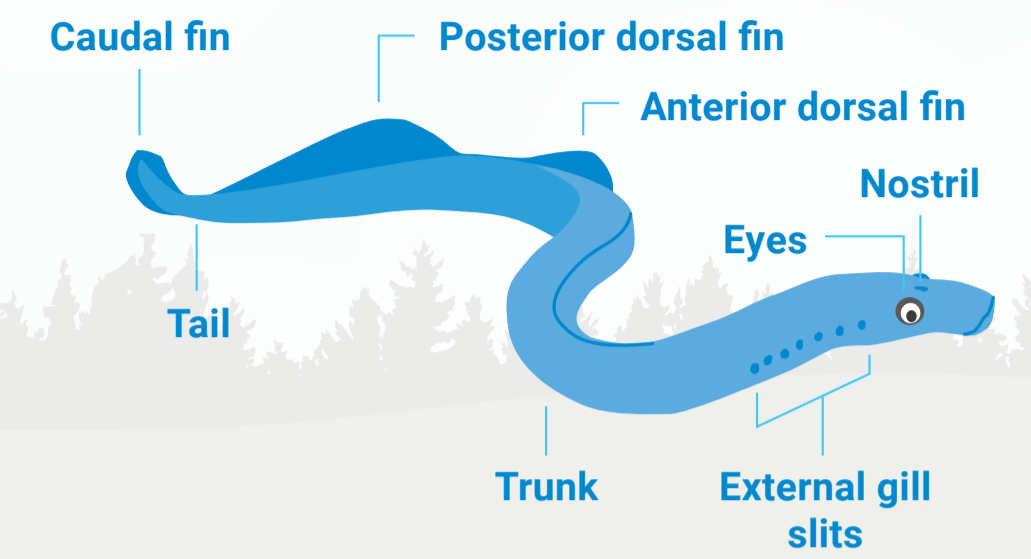


# PIHARAU LIFE CYCLE

Piharau (also known as kanakana) are anadromous, which means they start their lives in freshwater streams, before migrating to sea after three to four years. They only return to freshwater to breed.



## ABOUT THE PIHARAU



Our native piharau (*Geotria australis*) can be regarded as a "living fossil", as they have been found unchanged in rocks dating back 360 million years.

Piharau are a similar shape to an eel, but have a large circular, toothed sucker (oral disc) instead of a jaw. They don't have any bones, and, like sharks, their skeleton is made entirely of cartilage.

Piharau have only one nostril but their olfactory organ (nose) is large relative to their head size and their sense of smell is extremely sensitive. They can detect odours at concentrations less than 0.000000005 grams per litre, or 1 teaspoon in 4,000 Olympic swimming pools!

### 1 EGGS & NEWLY-HATCHED

October–November

Approximately 55,000 creamy-white eggs are deposited in a cluster under a large boulder or bedrock. Once hatched they remain attached for approximately two weeks before they disperse.



**EGGS**  
(Approximately 1 mm)

**NEWLY HATCHED**  
(7 mm)

~6-8 weeks

### 2 LARVAE

Worm-like piharau larvae called ammocoetes burrow into soft sediment where they filter-feed before transforming into juveniles.

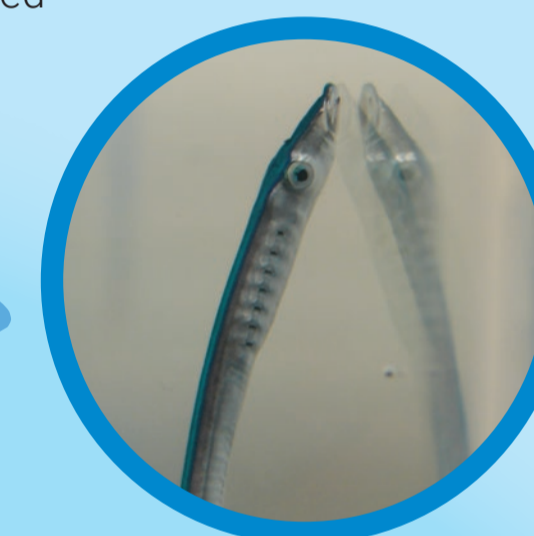


**AMMOCOETES**  
(Approximately 8–120 mm)

### 3 JUVENILES

Autumn–Winter

Larvae transform into juveniles called macrophthalmia with developed eyes, a sucker mouth and a bright blue colouration. At the end of this period they leave the freshwater environment and head for the sea.

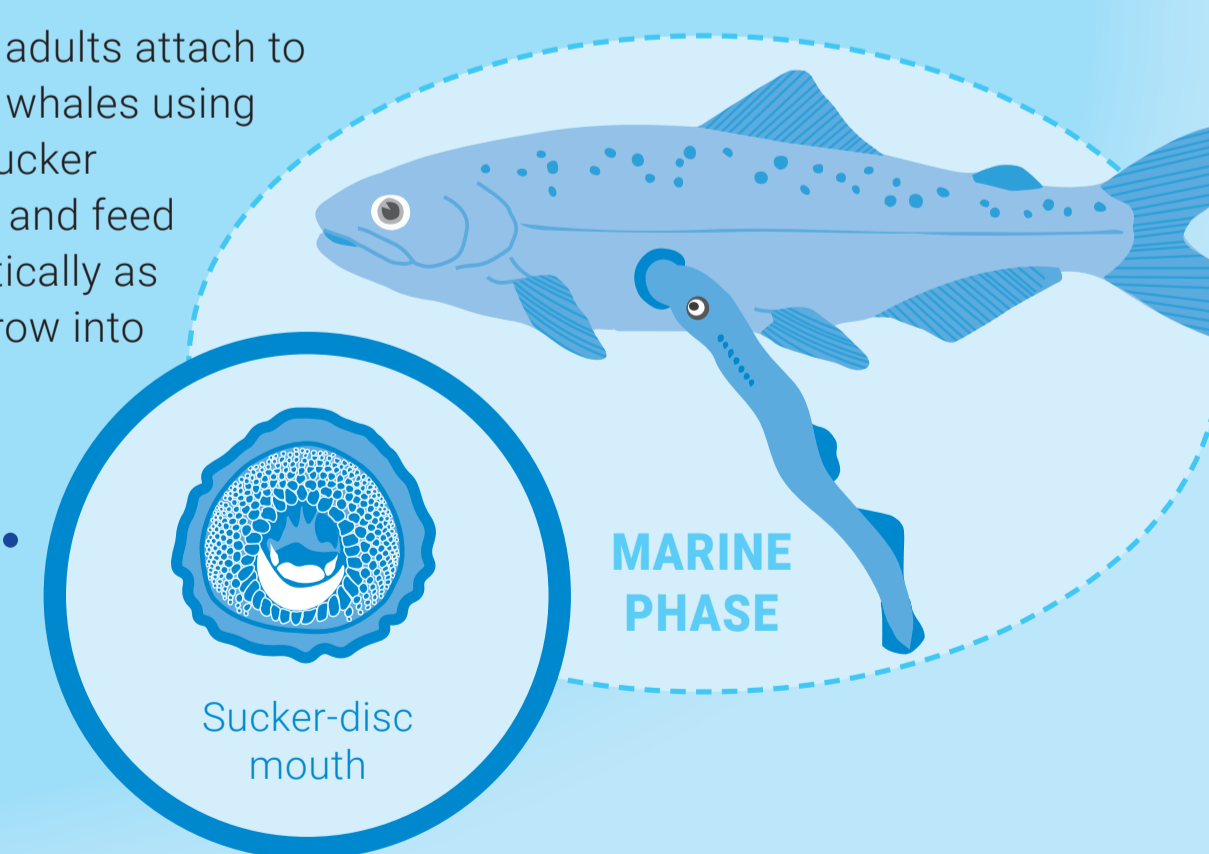


**MACROPHTHALMIA**  
(Approximately 100–120 mm)

### 4 FEEDING ADULT

(3-4 years)

Young adults attach to fish or whales using their sucker mouth and feed parasitically as they grow into adults.



**MARINE PHASE**

Sucker-disc mouth

### 5 PRE-REPRODUCTIVE ADULT

April–October

Bright blue, silver-bellied piharau cease feeding, migrate upstream (in general 200 km, 300 m elevation) during which they turn brown, and hide under boulders before moving to their spawning habitat.



**VELASIA**  
(Approximately 450–750 mm)

### 6 REPRODUCTIVE ADULT

October–November

Spawning piharau have shrunk to 2/3 in size. Males develop a gular (throat) pouch and females a gravid (pregnant) abdomen. When the piharau are ready to spawn the male wraps himself around the female and fertilises the eggs as she releases them.



(Approximately 350-570 mm)

### POST-SPAWNING MORTALITY

(over 3 months after spawning)

Spawning adults die as a part of their life cycle.



For more information visit [niwa.co.nz/te-kuwaha/piharau](http://niwa.co.nz/te-kuwaha/piharau)

