



Farmed vs wild King salmon

SLO: Students will know the similarities and differences between farmed and wild King salmon.

INTRODUCTION:

King salmon live in the wild in New Zealand's rivers and the sea and are also farmed in net pens in the South Island, including the Marlborough Sounds. There are similarities and differences between farmed and wild King salmon.

WHAT YOU WILL NEED:

- Farmed vs wild King salmon information sheet 1 & information sheet 2
– 1 of each per student
- Farmed vs wild King salmon activity sheet 1 & activity sheet 2
– 1 of each per student
- 'Grown here' poster

ONLINE VERSION:

kingsalmon.co.nz/ed/activity21

ACTIVITY:

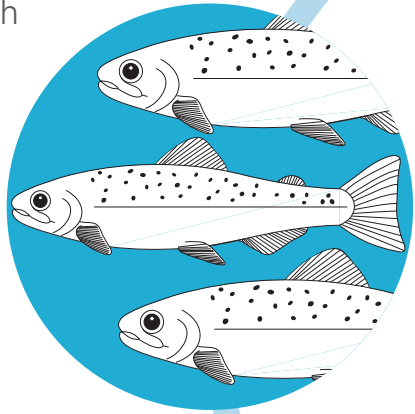
Students research to find out the similarities and differences between farmed and wild King salmon.



Farmed King salmon life cycle

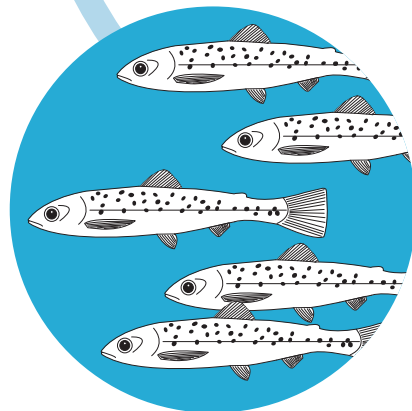
ADULTS

Adult King salmon reach harvest size of 4kg in net pens at the sea farms (around 12-18 months)



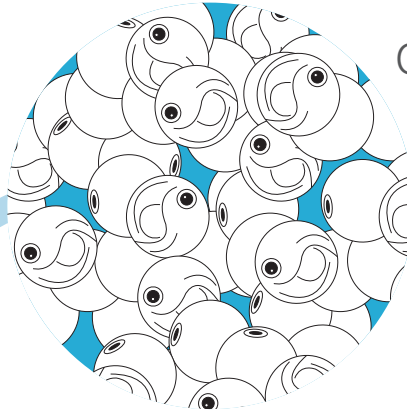
SMOLT

At around 100g smolt are transferred to net pens at the sea farms



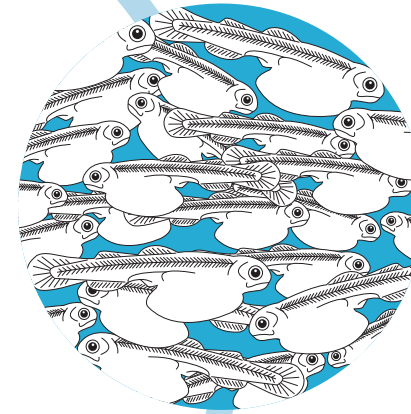
OVA

Ova or eggs are collected at the fresh water hatchery



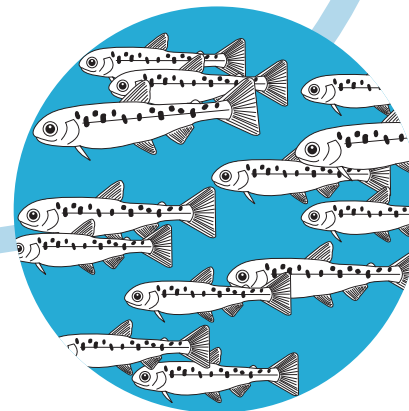
ALEVIN

Alevin are hatched from eggs at the fresh water hatchery



FRY

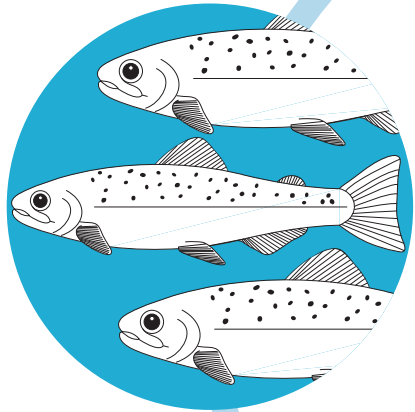
Fry are transferred to outside raceways at the fresh water hatchery



Wild King salmon life cycle

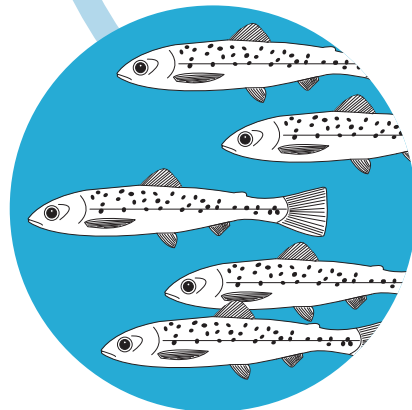
ADULTS

The King salmon grow and mature in the sea, some swim long distances. Once fully grown the King salmon return back to their fresh water birthplace to spawn or lay eggs.



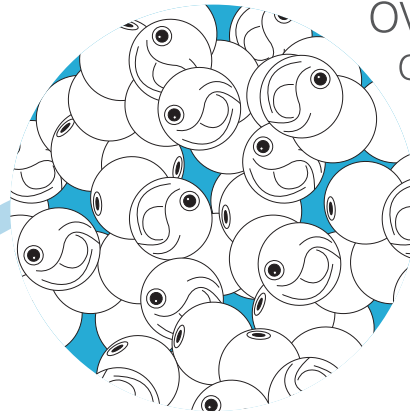
SMOLT

Fry become smolt, they swim downstream undergoing body changes before they enter the sea. Being able to live in fresh and sea water is called *anadromous*.



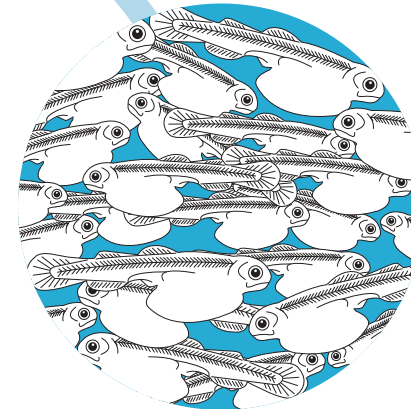
OVA

Ova or eggs are fertilised by the male and spawned or laid by the female in a fresh water river bed gravel



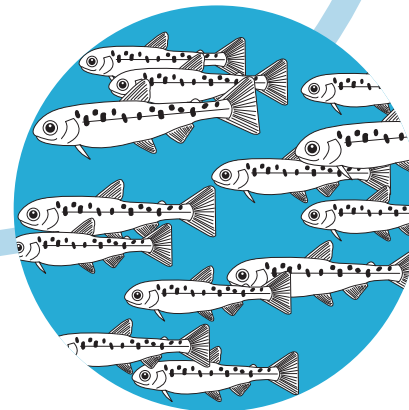
ALEVIN

Alevin are hatched from eggs in the gravel nest. They stay in the nest and use their yellow sac for food.



FRY

Once they lose their sac, wild salmon become fry. They leave the nest to find food.



ACTIVITY SHEET 1

Farmed vs wild King salmon

1. Similarities & differences

Research to find out the similarities and differences between farmed salmon and wild salmon. The 'Grown here' poster will help.

Complete the table:

Farmed vs wild King salmon

Farmed King salmon	Wild King salmon
Born in hatchery	Born in stream gravel redd
	Grow out in the open ocean
Life cycle stages are managed for year round production	
	Must swim away from predators
	Health not monitored
Fed formulated diet	

ACTIVITY SHEET 2

2. Compare life cycles Complete the table using the life cycle information in the information sheet.

Complete the table:

Farmed King salmon			Wild King salmon		
Stage	Location	Fresh water or sea water	Stage	Location	Fresh water or sea water
Ova	Hatchery		Ova		
Alevin			Alevin		
Fry			Fry		
Smolt			Smolt		
Adult			Adult		Sea water
Spawning			Spawning		

ANSWERS SHEET 1

Farmed vs wild King salmon

1. Similarities & differences

Research to find out the similarities and differences between farmed salmon and wild salmon. The 'Grown here' poster will help.

Complete the table:

Farmed King salmon	Wild King salmon
Born in hatchery	Born in stream gravel nest
<u>Grow out in net pens</u>	Grow out in the open ocean
Life cycle stages are managed for year round production	<u>Live in fresh water until they're smolt, mature at sea, then return to fresh water lay eggs</u>
<u>Predator nets keep predators away from the salmon</u>	Must swim away from predators
<u>Health monitored</u>	Health not monitored
Fed formulated diet	<u>Catch own food</u>

ANSWERS SHEET 2

Farmed vs wild King salmon

2. **Compare life cycles** Complete the table using the life cycle information in the information sheet.

Complete the table:

Farmed King salmon			Wild King salmon		
Stage	Location	Fresh water or sea water	Stage	Location	Fresh water or sea water
Ova	Hatchery	<u>Fresh water</u>	Ova	<u>River</u>	<u>Fresh water</u>
Alevin	<u>Hatchery</u>	<u>Fresh water</u>	Alevin	<u>River</u>	<u>Fresh water</u>
Fry	<u>Hatchery</u>	<u>Fresh water</u>	Fry	<u>River</u>	<u>Fresh water</u>
Smolt	<u>Transfer hatchery to sea pen</u>	<u>Fresh water & sea water</u>	Smolt	<u>River to sea</u>	<u>Fresh water & sea water</u>
Adult	<u>Sea pen</u>	<u>Sea water</u>	Adult	<u>Sea</u>	Sea water
Spawning	<u>Hatchery</u>	<u>Fresh water</u>	Spawning	<u>River</u>	<u>Fresh water</u>