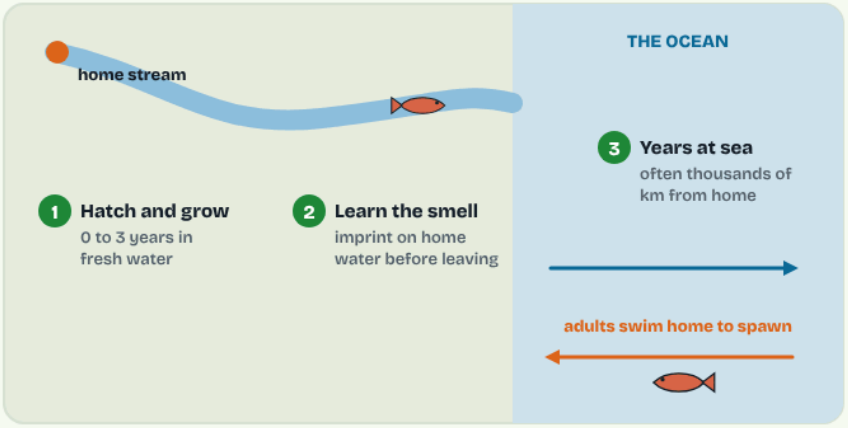
That is why

How do salmon find their way home?

Young salmon learn the smell of their home stream; years later a magnetic sense gets them close and smell finishes the job.

A Learn home, leave, come back

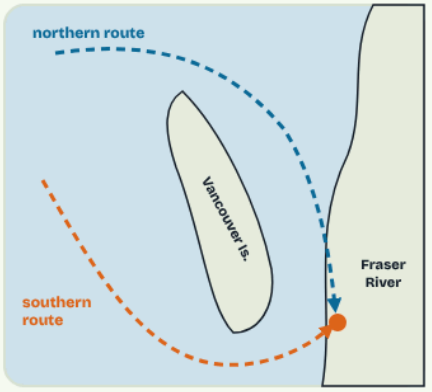


Imprinting

Before heading to sea, young salmon learn the odors of their home stream and keep that memory for years. Scientists call this olfactory imprinting.

First proposed by the biologists Hasler and Wisby in 1951.

B At sea: a magnetic map



Map simplified, not to scale.

Fraser River sockeye must swim around Vancouver Island. Over 56 years of fisheries data, their choice of route tracked slow drifts in Earth's magnetic field.

The magnetic sense may bring them within 50 to 100 km of their river.

Putman and colleagues, Current Biology, 2013

C In the river: smell

1 Smell takes over

Near home, salmon pick their way by the odor of home-stream water.

2 The scent test

Young coho exposed to a chemical were drawn to water scented with it as adults, 1.5 years later.

3 Lost addresses

Salmon that miss their home water at the right young stage are more likely to stray.

Learn the smell young, sense the map at sea, sniff the way home.

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Diagram: https://thatiswhy.com/diagrams/why-salmon-find-home/ · Full guide: https://thatiswhy.com/why-salmon-can-find-their-way-home/