

CONNECTING FISH HABITAT

Many native fish need to move between estuarine and freshwater habitats at different times of year, for several reasons:

- To migrate to and from breeding and spawning grounds
- To find deep waterholes and wetlands for refuge in the dry season
- To access waterways after drought
- In response to changing water quality such as dissolved oxygen levels
- To find new areas for feeding
- To evade predators

Barriers are structures or conditions that prevent fish from moving between different habitats. This can mean there is less overall habitat available for fish to live in, leading to reduced fish populations. Barriers also impact fish diversity and disrupt life-cycles.

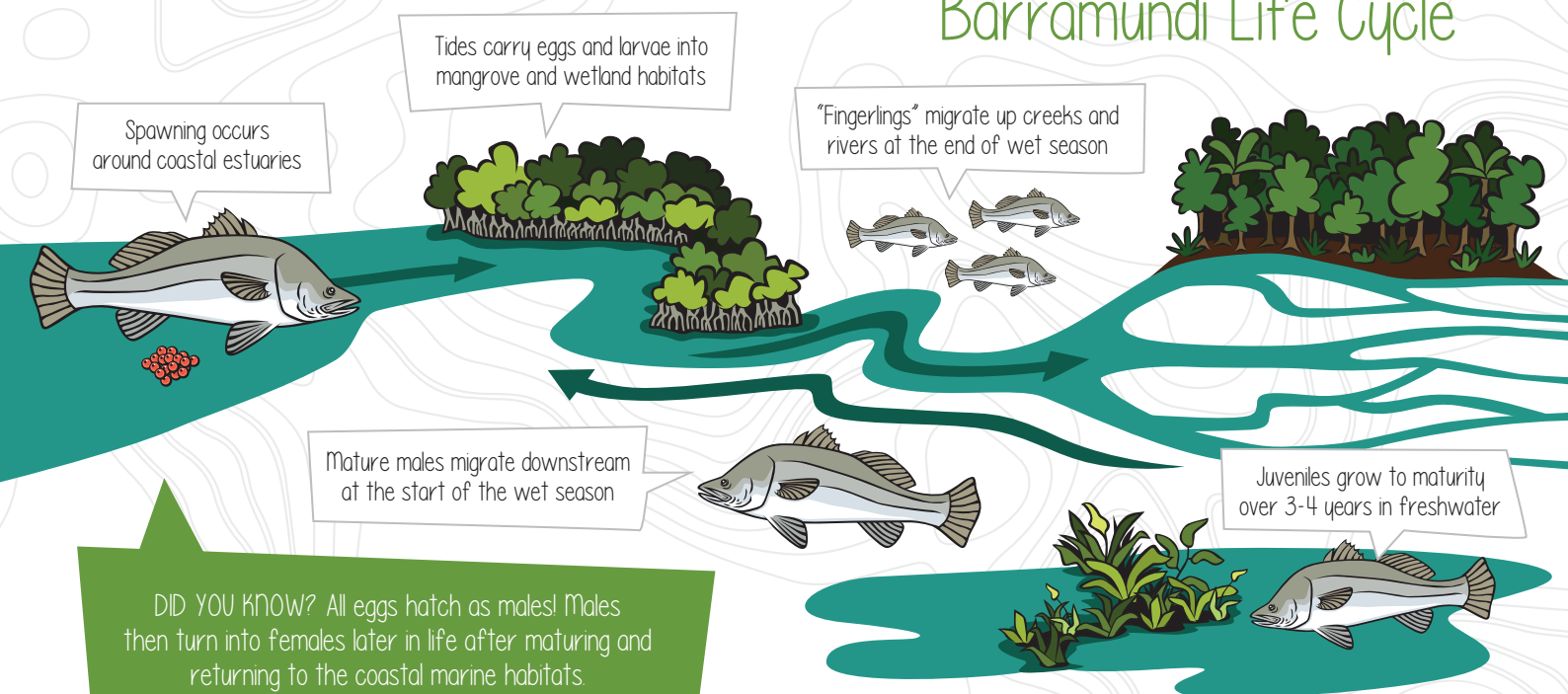
Invasive fish species like tilapia and gambusia can survive and reproduce in degraded and polluted waterways much more successfully than even our hardiest native fish species. Enhancing waterway connectivity and health by removing barriers to fish movement is one way we can support native fish.

SOME ICONIC FISH THAT SPAWN IN MARINE HABITAT AND MIGRATE TO FRESHWATER:

- Barramundi
- Mangrove jack
- Sea mullet
- Freshwater eels
- Jungle perch
- Tarpon

When these fish attempt to move from marine to freshwater habitats, they are usually juveniles. Because of their smaller size they don't have much swimming power – their movement can be stopped by even minor barriers. If you see a lot of fish congregating immediately downstream of a structure or crossing, it might indicate it's a barrier that they can't swim past.

Barramundi Life Cycle



COMMON FISH BARRIERS

CAUSEWAYS

Causeways and crossings can effectively turn into small dams in low flow conditions, and only reconnect when high rainfall and flow events occur.



DROPS

Vertical drops downstream of road crossings and culverts are enough to form barriers for many fish, particularly juvenile and small bodied species. Even drops of several centimetres can be too high for them to get past.



HIGH VELOCITY

In slow flowing waterways fast water speeds can occur through pipes and culverts when they restrict the area of flow too much. Unless pipes and culverts are nice and low, and bank-to-bank, the water flow in them is often too fast for small fish to swim against. Woody debris can build up on the upstream side and create further velocity issues. The length of the pipe is also important as the fish may be able to only swim short distances against fast flowing water.



WEED CHOKES

When aquatic weeds build up, they can create a physical choke as well as a chemical barrier when there's simply not enough dissolved oxygen left for fish to survive.

LACK OF LIGHT

Some fish don't like low light conditions and may avoid swimming through culverts and pipes that are excessively long and dark, or under very low bridges.

OBSTRUCTIONS

Flood gates that stop the upstream flow of the tides also stop the fish moving upstream.

RESOURCES AND MORE INFORMATION:

- If you're planning to repair or install a crossing on your property, you can learn more about waterway barrier works at: www.daf.qld.gov.au/business-priorities/fisheries_habitats/policies-guidelines/factsheets/what-is-not-a-waterway-barrier-work
- If you think you have a fish barrier on your property, and want to know more about improving habitat connectivity for fishes, we'd love to hear from you! Contact info@terrain.org.au