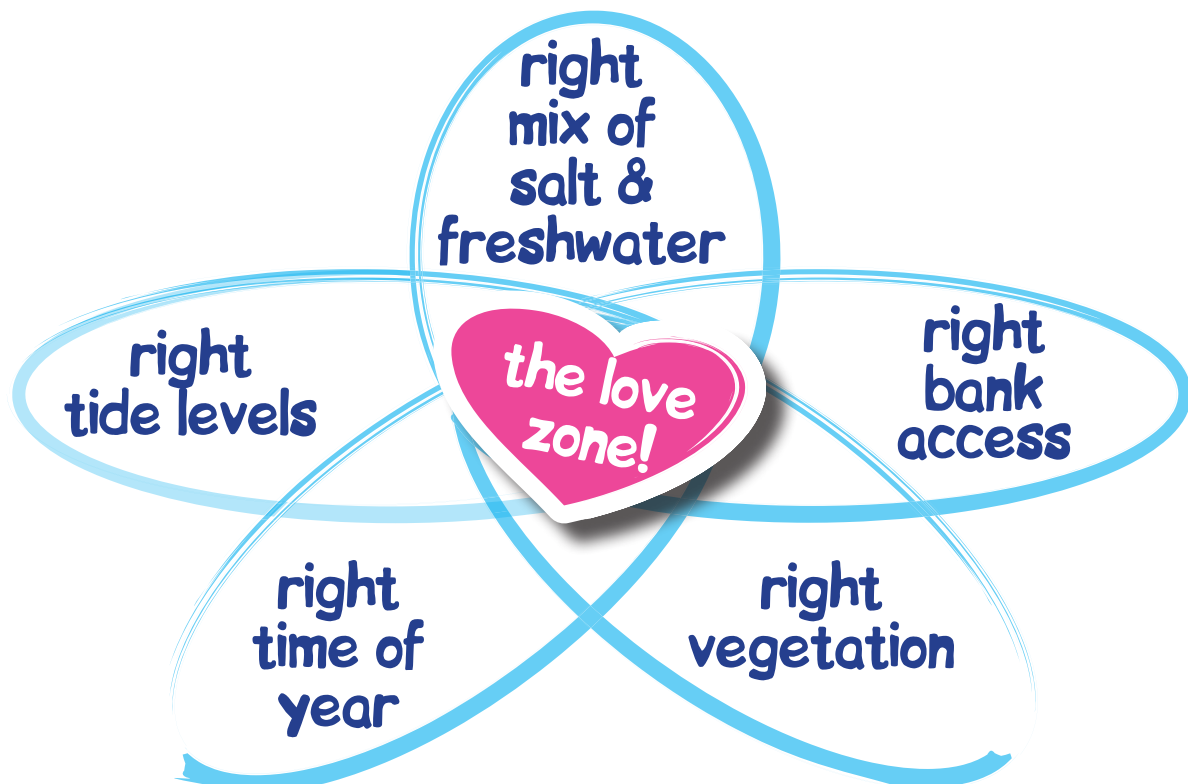


Inanga/Whitebait

Maintain/care for a spawning site



It takes a specific combination of conditions to create good spawning habitat for inanga. Once these conditions have been established it's important we do all we can to keep them. A change or reduction in any of the individual elements will mean reduced or absent spawning and egg survival.



WHAT HARMS SPAWNING SITES?

Livestock grazing

If they have access, livestock will preferentially graze on riparian vegetation because it has a higher moisture content than their paddock feed.

This leads to:

- **thinning and shortening of riparian vegetation** which exposes the aerial roots causing them to die-back
- **pugging and compaction** – cattle weigh 400–500 kg, in wet soils their hooves remould the surface soil (pugging) and tear/bury riparian vegetation

- in drier soil the ground is **compacted by treading** – this increases the soil's susceptibility to waterlogging and anaerobic conditions which can restrict plant growth
- treading can also lead to **bank steepening/erosion**.



Solution includes...

- using **fencing** to exclude all large (cattle) livestock year-round
- grazing only **smaller livestock** (sheep) by waterways as this has fewer long-term effects, but needs to be stopped at least 3 months before the beginning of the spawning season to allow time for regrowth of riparian vegetation.

Mowing grass at spawning sites

River bank maintenance – which includes mowing long grass – shortens/thins riparian vegetation.

This leads to:

- in the short-term, **reduction in the density** of riparian vegetation (but in the long-term can encourage lush regrowth)
- **aerial roots are exposed** to direct sunlight and this causes die-back
- **reduced height/density** of vegetation which causes less spawning and poorer egg survival.



Solution includes...

- mowing at the right time of the year can help maintain good quality riparian vegetation, but the recovery time after mowing for vegetation density is much longer than for vegetation height.

Sedimentation

Good inanga spawning habitat is tall dense vegetation – unfortunately tall dense vegetation traps and holds any sediment that may be in the waterway. Sediment tends to fall out of water around inanga spawning sites because of the damming effect of the tide i.e., the current slows down and the sediment is deposited on the banks.

This leads to:

- **clogging** of the aerial roots/stems of the riparian vegetation
- **eggs being smothered** or microclimate changes so eggs do not survive.



Solution includes...

- **reduce** deforestation and **increase** riparian vegetation throughout catchment to filter out land-sourced sediment **before** it enters the river
- **develop a catchment-wide plan** to reduce sediment getting into the waterways to begin with.

Predators

Inanga eggs are very vulnerable. The only protection they have from being eaten by predators is the vegetation they are developing in. Tall, dense, vegetation hides the eggs and makes access difficult for predators. If you can maintain or restore the vegetation then pests will become less of a problem.



The National Inanga Spawning Education Programme is supported by...



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