

Inanga/Whitebait

Plants for restoring spawning habitat



Before planting, ensure the following:

- Stock are excluded with fencing so they don't eat your new plants. A minimum 7 m setback is recommended.
- Before planting, control weeds on-site through spraying/ grazing/mowing/hand removal. After planting, remove weeds at least twice a year (Spring & Autumn for first three years).
- Minimise work along the high tide line during peak spawning season (Autumn & Winter) so eggs aren't damaged.
- Staking new plants can make them easier to find later.
- Ask your local regional council for more site/region specific advice on riparian planting/site preparation/maintenance, and let them know what exotic species you found on-site.




<p>1. Harakeke/flax</p> 	<p>7. Creeping bent</p>  <p>image supplied</p>	<p>13. Wīwī/Edgar's rush</p> 
<p>2. Toetoe</p> 	<p>8. Isolepis distigmatosa</p> 	
<p>3. Mānuka</p> 	<p>9. Giant umbrella sedge</p>  <p>image supplied</p>	<p>14. Oioi</p> 
<p>4. Kānuka</p> 	<p>10. Sharp spike sedge</p> 	
<p>5. Kōwhai</p>  <p>image supplied</p>	<p>11. Wīwī/Edgar's rush</p> 	<p>15. Kukaraho or pūrua/marsh club-rush</p>  <p>image supplied</p>
<p>6. Tī kōuka/cabbage tree</p>  <p>image supplied</p>	<p>12. Knobby club rush</p>  <p>image supplied</p>	

Always check your species list with your local Council to confirm they are naturally found in your region and suitable for planting at your site.


Native tree/shrub canopy

1. Harakeke/flax (*Phormium tenax*)



- Plant out of the flow zone 2 m apart.
- Do not plant in areas that have high flows as these can get ripped out of the bank and contribute to erosion.

2. Toetoe (*Austroderia splendens/richardii*)




- Plant 2 m apart.

3. Mānuka (*Leptospermum scoparium*)



- Plant 1 m apart.
- Good insect food.
- Good at soaking up excess nutrients from runoff.

4. Kānuka (*Kunzea ericoides*)



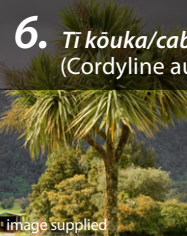
- Plant 1 m apart.
- Good at soaking up excess nutrients from runoff.

5. Kōwhai (*Sophora* sp.)



- Plant 1 m apart.
- Bird & insect food.
- Attractive yellow flowers.
- Provides dappled shade.

6. Tī kōuka/cabbage tree (*Cordyline australis tenax*)



- Plant 1 m apart.
- Bird food.
- Good at soaking up excess nutrients from runoff.

Tall thick grass

7. Creeping bent* (*Agrostis stolonifera*)
Tall fescue* (*Lolium arundinaceum*)




- Apply as seed throughout slope.
- If already onsite, make denser by excluding stock, not mowing & controlling foot traffic.
- Do not overshade.

8. Isolepis distigmatosa



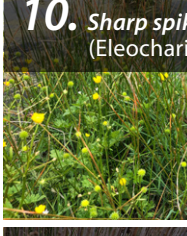
- Plant in dense clumps of 10–15 plants at a 1 m spacing.

9. Giant umbrella sedge (*Cyperus ustulatus*)




- Plant 0.5 m apart slightly above the high tide line.

10. Sharp spike sedge (*Eleocharis acuta*)



- Plant in **dense** clumps of 10–15 plants 1 m apart for 1.5 m of bank.
- Also put single plants through rest of bank.

11. Wīwī/Edgar's rush (*Juncus edgariae*)



- Plant in **dense** clumps of 10–15 plants 1 m apart for 1.5m band where high spring tides can reach, but water isn't too salty.
- Also put single plants through rest of bank.

12. Knobby club rush (*Ficinia nodosa*)



- Plant in **dense** clumps of 10–15 plants 1 m apart for 1.5 m of bank.
- Also put single plants through rest of bank.

Plants rising from water

13. Wīwī/Edgar's rush (*Juncus edgariae*)



14. Oioi/jointed rush (*Apodasmia similis*)



15. Kukaraho or pūrua/marsh club rush (*Bolboschoenus fluviatilis*)



- Plant all in **dense** clumps of 10–15 plants 1 m apart in stream edge.
- Also put single plants through rest of stream edge.

FURTHER READING & RESOURCES:

Hickford, M.J.H., Stevens, J.C.B. & Schiel, D.R. 2018. Nonselective use of vegetation for spawning by the diadromous fish *Galaxias maculatus*. *Restoration Ecology* 26(4): 65–656.

* Not native but very good spawning habitat, and has been in NZ since the mid 1800s.

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



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