

Inanga/Whitebait

Install temporary spawning habitat

National Inanga Spawning Education Programme from



Inanga spawning and egg survival are closely linked to the availability of good quality spawning habitat. If natural riparian vegetation is damaged or still developing, then straw/hay bales make effective temporary spawning habitat for a season.



The basic concept is that when straw bales are placed (long-sides parallel) the crevice between them is:

- accessible to spawning inanga
- shaded from the sun
- moist & cool

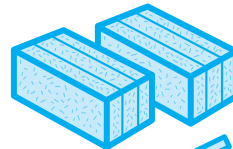
= GREAT TEMPORARY INANGA SPAWNING HABITAT!

Why straw/hay bales? Wheat straw, barley straw or hay bales are good because they are robust, biodegradable, cheap and an effective short-term substitute for native riparian vegetation. Ideally, several bale sets will be installed at multiple sites across the known/suspected spawning area. Seek some specialist advice on your programme before you start if required.

Before you start... it's important to know that you are in the right part of the river and at the right height up the bank for the spring tides. (see Further reading & resources section)

Also ensure you have the permission of the appropriate authorities and landowners for your project before you begin any work whatsoever.

Installation equipment needed:



2x straw/hay bales per set



2x 1.5 m metal stakes (waratahs) per set



2x hi viz stake safety caps per set



3–4 m of 4 mm wire per set



1x site label per set



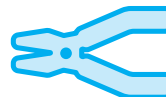
3x 30 cm cable ties per set



1x 45 cm wooden stake per set



mallet/club hammer/post driver for metal stakes



wirecutters/pliers for wire



usual safety gear



willing helpers!

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AQUATIC SCIENCE & VISUAL COMMUNICATION



Installation method:

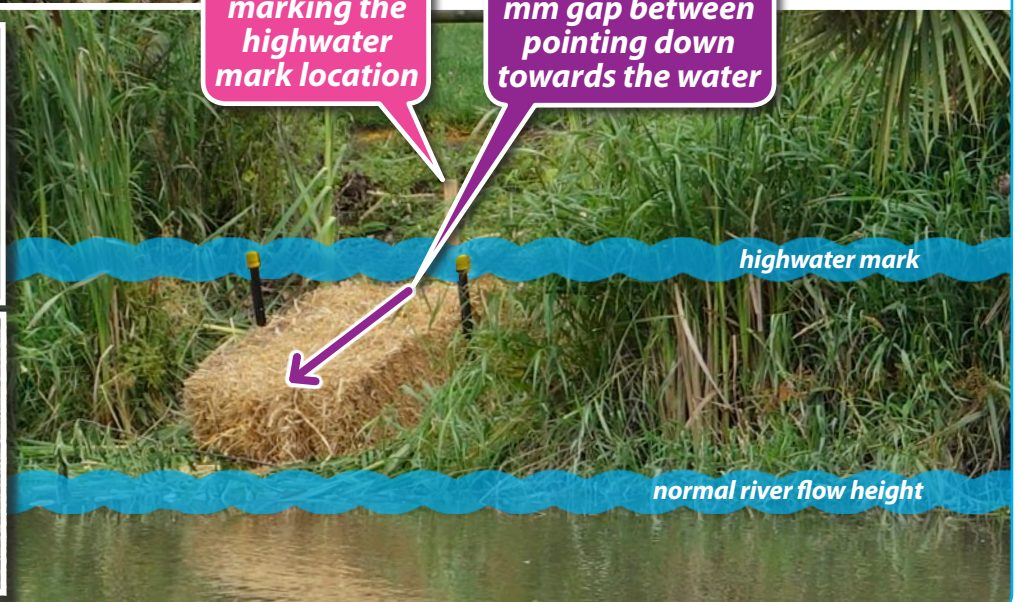
1. Visit the site during several spring high tides and mark the highest point that the water gets to on the bank (**highwater mark**) with the **wooden stake**. Do this over several days as the water level may change a lot from one day to the next.
2. Once all the sites are marked, head out at **low tide** to install the bales. Make sure it is a **couple of weeks before** the spawning spring tide so the bales have time to 'season'.
3. Place the bales onto the bank just below the **highwater mark**, but above the **normal river flow height**. Lay them long sides next to each other, at right angles to the river (gap pointing down). Leave a 50 mm gap between the bales. This way the tide inundates the gap between the bales. *TIP: Always carry bales by holding BOTH twines to stop them falling apart.*
4. Place the metal stakes halfway down the length of the two bales so they are snug on the outside, and hammer in until firmly in place. Try and get a wire hole in the metal stake against each bale, and level with the top of the bale.
5. Cut a piece of wire that is 2.5 times as long as the distance between the two hammered metal stakes.
6. Make a secure loop in one end of the wire and thread the other straight end of the wire through the hole in the metal stake that is level with the top of the bales. Pull through until the loop sits in the middle between the two bales.
7. Bend the wire at the hole in the metal stake so it is firmly in place. Thread the straight end through the opposite metal stake and secure with a solid bend again, then thread it through the initial loop back at the centre.
9. Secure the final piece of wire through the loop back on itself, and push any left over ends safely into the bale.
10. Hammer the metal stakes deeper into the ground to tighten the wires and ensure the bales are firmly held against the ground for the when the spring tides arrive. They shouldn't move when you kick them.
11. Attach the hi viz safety caps & the site label to the top of the metal stakes with cable ties.

metal stakes firmly hammered in halfway down the length of the bales – with safety caps held in place with cable ties



wooden stake marking the highwater mark location

bales side-by-side with the 50 mm gap between pointing down towards the water



highwater mark

normal river flow height