

Seagrass Restoration Rhizome Project Update

A first of it's kind project in the UK



Seagrass Rhizome Transplantation Update



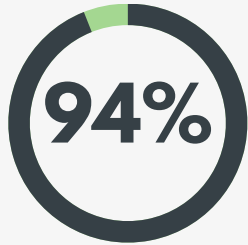
Overview

Seawilding is a pioneering and award-winning Scottish charity located on the shores of Loch Craignish in Argyll. With a core team and the help of community volunteers, Seawilding works to restore degraded marine habitats and in particular the eco-system engineers, native oysters and seagrass.

Seawilding is pioneering seagrass rhizome transplantation in the UK. In a first of its kind project, Seawilding transplanted 10,000 seagrass plants within Loch Craignish in the summer of 2023. Transplanting shoots with rhizome roots systems attached created an instant seagrass meadow.

Why seagrass?

Seagrass beds support a diverse array of species and are a blue carbon resource. They are declining worldwide with an estimated annual decline rate of 7% on average (Waycott et al. 2009). Our own surveys suggest that seagrass in Loch Craignish may have reduced by 94% from its historical extent.



Reduction in seagrass compared with potential historical extent in Loch Craignish

The restoration in action

Between May and July, a total of 10,000 shoots with rhizomes were collected from the healthy seagrass donor bed. The shoots were planted using two different methods, referred to as the 'Bundle' method and the 'Single shoot' method, to assess their relative effectiveness. In the bundle method, a plain steel washer was attached to each rhizome using a wire tie at the intersection point of rhizome and shoot*. The weight is important to hold the rhizome in place and minimise movement while the roots take hold. The rhizomes were then formed into bundles of 10 and tied together with a piece of biodegradable jute string. In the Single shoot method, no additional preparation was needed, and the rhizomes were planted individually by being pushed into the sediment at a density of 10/m².

*the steel washers and ties decompose naturally and have shown to improve sediment quality.



The new seagrass meadow

Aerial view of new seagrass meadow



10,000
Seagrass
shoots
transplanted

1m

The image shows an aerial view of the new seagrass meadow. The bundles show up clearly as darker dots. Over the next few years the seagrass plants are anticipated to expand to fill in the gaps and form a continuous meadow. However the wildlife aren't waiting for that, they are starting to move in already. As soon as the bundles were planted, life started colonising the new seagrass meadow.

Our first follow up surveys indicate a survival rate of 93% for the bundles.

The planted bundles will continue to expand. 1 shoot planted now is anticipated to produce 50 shoots over a 5 year period*



**Based on expansion results observed using this methodology*

Biodiversity enhancement

Before restoration



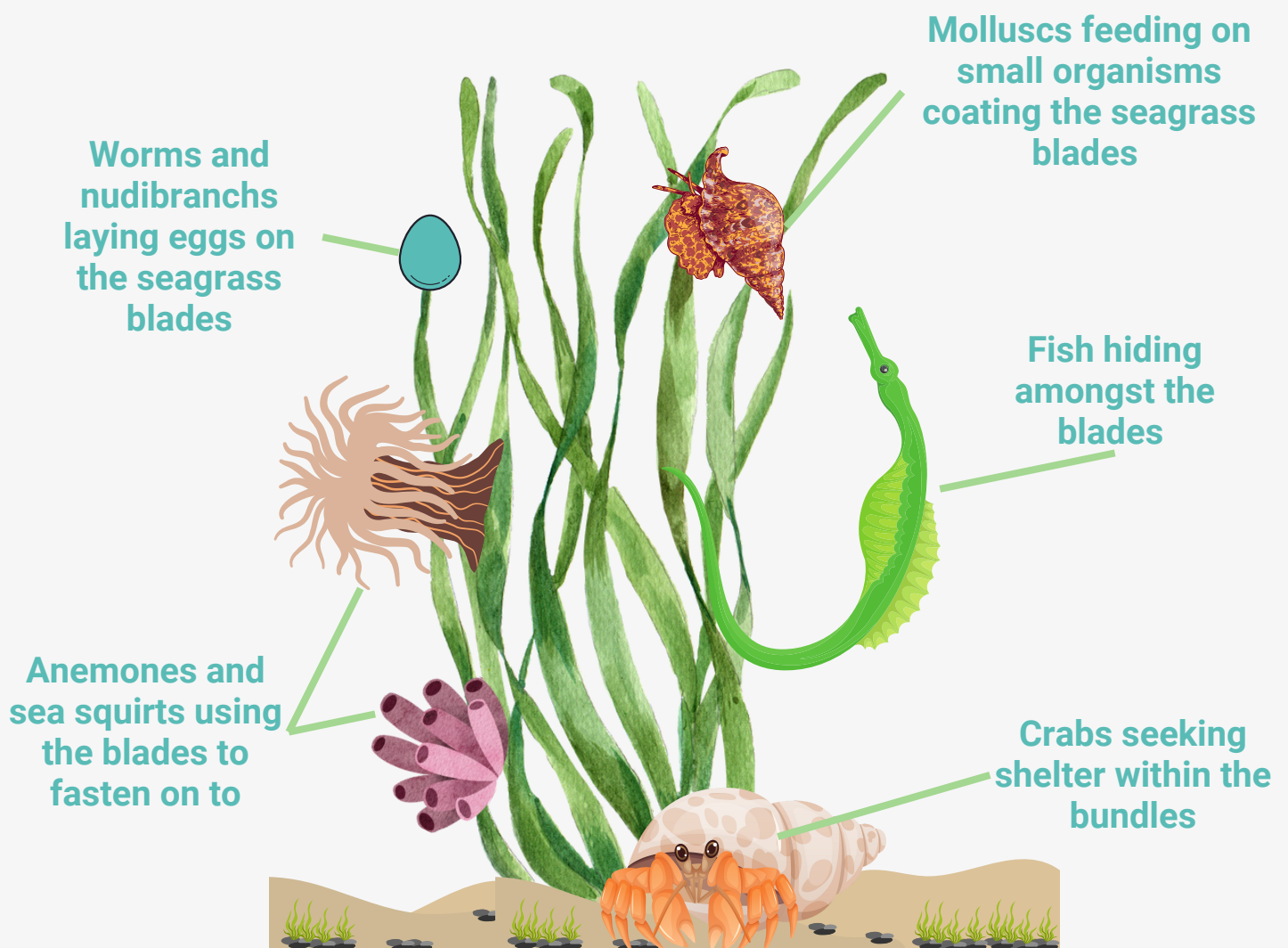
After restoration



Creating a habitat for life

Seagrass is a habitat that many species can really call home. Within the first months of transplanting our seagrass shoots we were able to observe species using the seagrass for a number of critical life stages and functions including reproducing, laying eggs, feeding, seeking shelter and avoiding predators.

What's happening in the new seagrass bed?



Community engagement

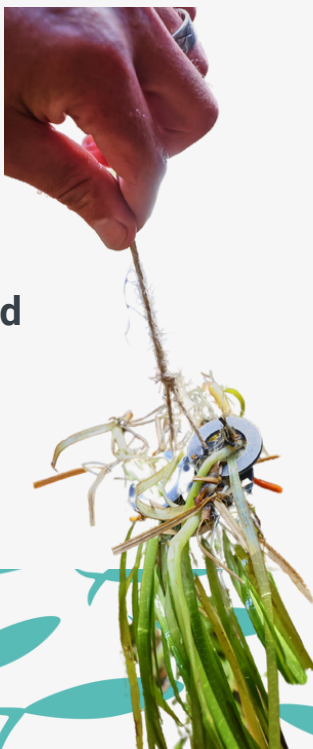
Processing the shoots by attaching the washers has to be accomplished quickly in order to minimise the time that the shoots spend out of the water. Many hands made light work with this as the local community joined in to help with the shoot preparation.



Volunteers in action producing shoot bundles



Completed bundle



The future

It is our ambition to build on these first exciting steps for seagrass restoration in the UK. In partnership with NatureScot, our key goals are to:

Master the rhizome process by:

- Gaining a firm understanding of the environmental conditions, including sediment type and nutrient levels, required for success.
- Determining the optimum percentage of rhizomes which can be harvested.
- Streamlining the process for seed collection and processing.
- Developing a robust methodology that can be rolled out across the UK.

Allowing us to:

- Plant 4 new seagrass beds in Loch Craignish in 2024, (project budget £150,000).
- Continue to expand on this year on year.
- Share successful practice with the restoration community enabling seagrass restoration at scale across the UK.

The 10,000 shoots planted for this project are anticipated to expand to 500,000 shoots over the next 5 years*

**Based on expansion results observed using this methodology*

