Promising results for eelgrass restoration using sand-capping

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This summer, divers planted 80,000 eelgrass shoots at the sand-capped area at Lilla Askerön. A follow-up study now shows that the eelgrass shoots have survived and reproduced to a total of 176,400 shoots. Credit: Eduardo Infantes

This spring, excavators spread tons of sand on the seafloor outside a small island on the Bohus coast in an attempt to improve living conditions for eelgrass. Now, a follow-up study shows that the eelgrass shoots have more than doubled.

In southern Bohuslän, a large number of eelgrass beds disappeared during the '90s. One of the reasons was eutrophication.

Although nutrient emissions have decreased since then, the eelgrass has not returned. Instead, the water has become more turbid due to sediment resuspension when the eelgrass no longer stabilizes the seafloor.

"Today, the environmental conditions are so poor in these areas that it's impossible to re-establish the eelgrass without first taking measures to improve the conditions in the water," says Per Moksnes, researcher at the Department of Marine Sciences.

New method in Sweden

An area where the water easily becomes turbid, is the southern bays at Lilla Askerön outside the island of Tjörn. To reduce the turbidity from the muddy bottoms, and to improve light conditions in the water, the County Administrative Board and the University of Gothenburg had excavators cover one hectare of the seafloor with a ten centimeter thick layer of coarse sand. This method of sand-capping the bottom is new in Sweden, but has been tested successfully in for example Denmark.

This autumn's inventory of the 10,000 square meter planting area showed that the number of eelgrass plants had more than doubled. Credit: Eduardo Infantes

During the summer, divers planted 80,000 eelgrass shoots in the sand. The follow-up study now shows that the eelgrass shoots have survived and reproduced to a total of 176,400 shoots. Also test sites outside the sand-capped area show a good survival rate.

"The sand-capping seems to have improved the light conditions in the bay enough for the eelgrass to be able to grow also outside the sand," says Per Moksnes.

Can be tested in more places

Winter is a critical period for newly planted eelgrass shoots. Only next summer, one can know with certainty whether the eelgrass has been

established or not.

"We keep our fingers crossed that these encouraging results will continue. The method can also be of interest in other areas where we have problems with turbid water," says Anders Olsson, marine biologist at the County Administrative Board.

The restoration is part of a four-year project managed by the County Administrative Board in collaboration with the University of Gothenburg.

In the spring of 2021, a total of 1,800 tonnes of coarse sand was spread in the bay at Lilla Askerön. Credit: Eduardo Infantes

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Facts about eelgrass

Eelgrass is a species of seagrass that can form meadows below the surface. The eelgrass meadows are full of marine life and increase biodiversity. They are also important nursery areas for many fish and crustaceans. They also help reduce eutrophication and climate change by absorbing and storing large amounts of nutrients and carbon in the sediment.

Eelgrass meadows are one of the most productive ecosystems, but they are threatened by eutrophication and overfishing. Other threats come from human impact, such as jetties, dredging and anchoring from boats.

Provided by University of Gothenburg