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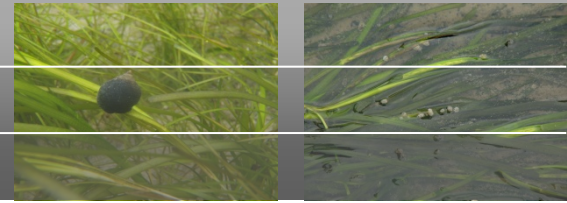
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Eelgrass restoration in the Wadden Sea

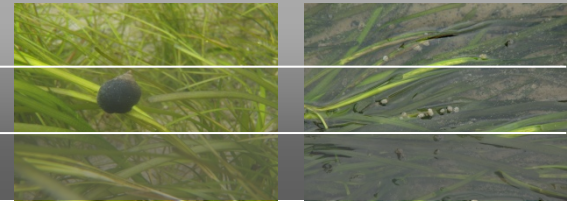
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Eelgrass habitat suitability map



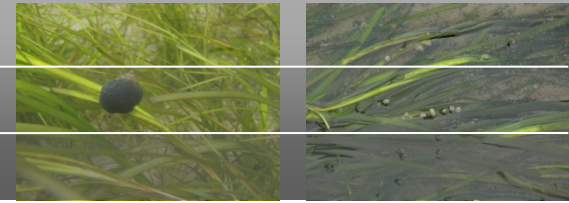
Restoration with volunteers



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More info at the poster



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Eelgrass restoration in the Wadden Sea

Introduction

Eelgrass, *Zostera marina* has nearly disappeared from the Dutch Wadden Sea. In Germany, the intertidal variety of this species has recovered well over the last decade, but not in the Netherlands. Dutch waters score "poor" with respect to Eelgrass under the Water Framework Directive. This project aims to restore Eelgrass in the Dutch Wadden Sea, using a technique developed in the USA. The project is being carried out with help of volunteers of the Dutch NGO, the Waddenvereniging.

Basic Premises

- Probable cause of lack of natural recovery: seed supply limitation
- Restoration needs to be large scale
- Let nature do the work
- Limit the chance of importing invasive exotic species
- Learning by doing



Deployment locations

Mesh bags with seeds were deployed at 3 sites: Balgzand, Schiermonnikoog and Uithuizen. These sites were selected on the basis of habitat suitability models and seed retention models, along with expert judgement.

Donor material

Seed-bearing shoots were collected from the German Wadden island of Sylt, with help from volunteers in late summer 2011 and 2012. Eelgrass was collected from delineated "harvest" areas (H-1-5) while neighbouring control areas (C1-5) were left untouched. H and C sites were compared to assess possible damage.



Method

The shoots were packed in bags with a mesh size of about 2 mm, fine enough to hold the grass, but coarse enough to let the seeds through. The bags had a float and a metal hook.



The bags are deployed in the field on floats connected to a 5 m anchor rope.



Each location was supplied with 180 bags, distributed over 1 ha, in total about 600 kg of eelgrass shoots was collected and sown both years.



Results

The Data - ICT service department of Rijkswaterstaat carried out a survey in July / August 2012 to assess the effect of the first deployment. Cover was assessed in 20x20 m cells. At all three locations significant amounts of eelgrass developed in spring 2012, despite a winter with a lot of storms and a few weeks with severe ice floes. At all three locations eelgrass was observed at distances of >> 100 m away from the deployment area, indicating significant bed-load transport (either due to waves or ice). At all three locations the eelgrass was setting seed in 2012.

Conclusions

- The first stage of the restoration project was successful
- No damage was observed at the donor sites
- In all three areas the habitat appears suitable
- Long term effects remain to be seen
- Eelgrass, originating from northern German seeds, develops "Dutch" morphology in the Dutch Wadden Sea.
- Working with volunteers is very positive for community building

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