

Transect line overlaying lush eelgrass.
PHOTO: Nicolas Winkler

Rewilding Our Shores: The Eelgrass Pilot Project

by **NICOLE TOTH** /// EAC Volunteer

How the project was born

Eelgrass (*Zostera marina*) is a beautiful marine flowering plant that plays an integral role in maintaining healthy ecosystems in Nova Scotia. Whether due to invasive species, run-off or development above or near eelgrass meadows, populations have slowly been disappearing from our coasts. Luckily, this did not go unnoticed by coastal community members and dedicated citizen scientists that first brought this issue to the attention of the Ecology Action Centre (EAC). The EAC sought to address this concern by joining forces with the Future of Marine Ecosystems (FOME) Lab at Dalhousie University. Together, they launched the 'Eelgrass Pilot Restoration Project' in the summer of 2022. Their goal was to widen the breadth of information accessible regarding the best methods for eelgrass restoration in a Nova Scotian context.

TAKE ACTION

Become a citizen scientist! Join us in collecting vital data on eelgrass coverage by getting involved in our sea kayaking program or our iNaturalist Eelgrass monitoring project – visit inaturalist.org/projects/eac-eelgrass-monitoring-project to add your observations.

The benefits of eelgrass

Like any vital member of a healthy ecosystem, eelgrass provides a variety of benefits for marine life, the planet, and us. Dense eelgrass meadows mitigate the impacts of erosion on coastal communities by buffering powerful storm surges. In the same way, blades of eelgrass catch pollutants such as the nutrients in fertilizer and sediment, improving water quality. In addition to producing oxygen, eelgrass also has the ability to draw emissions into the ground by means of an interconnected system of roots and horizontal shoots called rhizomes. If undisturbed, eelgrass can store carbon for centuries.

One of the most prominent ways thriving eelgrass meadows contribute to healthy ecosystems is by acting as nurseries for young fish, shellfish and seabirds, which allows many more to reach adulthood. In this way, the complex habitat and haven eelgrass provides helps to maintain the diversity of fish species in the ocean. Abundant populations of fish and shellfish, including lobster and haddock, are directly linked to the prosperity of many local fisheries and therefore Nova Scotian traditions, history and culture.

Piloting restoration

Despite these necessary functions and the widespread loss of this important species, little eelgrass restoration work has been done in the Maritimes thus far. This positioned eelgrass restoration as the perfect research initiative for the EAC and FOME Lab scientists and volunteers involved in the project. Discerning the best methods for replanting and rebuilding eelgrass meadows was the main focus of their research.

They began by assessing the area intended for restoration, a bay in Port Medway, N.S., by way of snorkeling as well as the use of aerial drone mapping. With this information, they were able to begin the restoration work by carefully harvesting the seeds, sods and shoots intended for replantation, from their donor bed, a lagoon by Cherry Hill beach. At the study site, five different planting methods were implemented: individual seeds, seeds in biodegradable bags, individual shoots, shoots contained in re-purposed scallop nets and sods. For each method, up to 10 replicates were used in order to compare the growth rates between methods and the existing sandy patches of the bay. Come next summer, the team will revisit the site to learn which restoration technique was most successful – a promising step towards future restoration initiatives.

In the field

Aaron Clausen, an EAC intern that was vital to the project, expressed that his motivation stemmed from local community members' engagement and excitement about protecting eelgrass ecosystems. Reflecting on his experience, he reminisced about the variety of challenges that come with working below sea level such as adapting to the tides and the long days in cold, murky waters. However, learning to work with the environment is what allowed Aaron and the team to “tangibly experience the difference they were making, with each seed, sod and shoot planted.” He hopes their efforts will lead to improved eelgrass conservation and an increased perception of eelgrass as a nature-based solution. Both these goals, if made a reality, would go a long way in regard to mitigating the effects of climate change and supporting sustainable fisheries across Nova Scotia.

The knowledge gained from this study will be an important step towards preserving and establishing vibrant eelgrass ecosystems in Nova Scotia. This project has also put a timely spotlight on eelgrass and the numerous ways it works to benefit all of us. This kind of attention is invaluable as was recently demonstrated by the collective effort of those who successfully advocated on behalf of the eelgrass meadows of Owls Head Provincial Park. Raising awareness about the significance of eelgrass has the power to influence policy makers as well as the public. We should all feel equally determined to protect this wondrous species, as the commendable individuals involved in the eelgrass pilot restoration project and the community members who inspired it.



EAC member Aaron Clausen harvesting seeds from eelgrass. PHOTO: Nicolas Winkler



Burlap seed bags ready for planting. PHOTO: Nicolas Winkler

Contributing to conservation

If you want to help protect our eelgrass, the EAC provides two valuable ways to contribute to the province-wide effort of eelgrass mapping. An accessible database of current eelgrass meadows helps researchers, non-profit organizations and community initiatives monitor eelgrass distribution in Nova Scotia. If you are an experienced sea kayaker contact Aaron Clausen at Aaron.Clausen@ecologyaction.ca for the opportunity to collect photographs and data that directly contribute to the mapping of eelgrass. If spending time at your local beach, surf break or coastal trail is more your speed, submit your eelgrass observations to the EAC “eelgrass mapping project” using the free iNaturalist app. Both in the water and out you have the power to increase the amount of accessible information about eelgrass and contribute to long-term and large-scale conservation efforts.

Nicole (she/her) is a Dalhousie University alumni and aspiring writer. She enjoys spending time outdoors climbing, surfing and camping.