Report of attendance at the World Seagrass Conference Naples June 17th to June 21st, 2024, attended for the 17th June only.

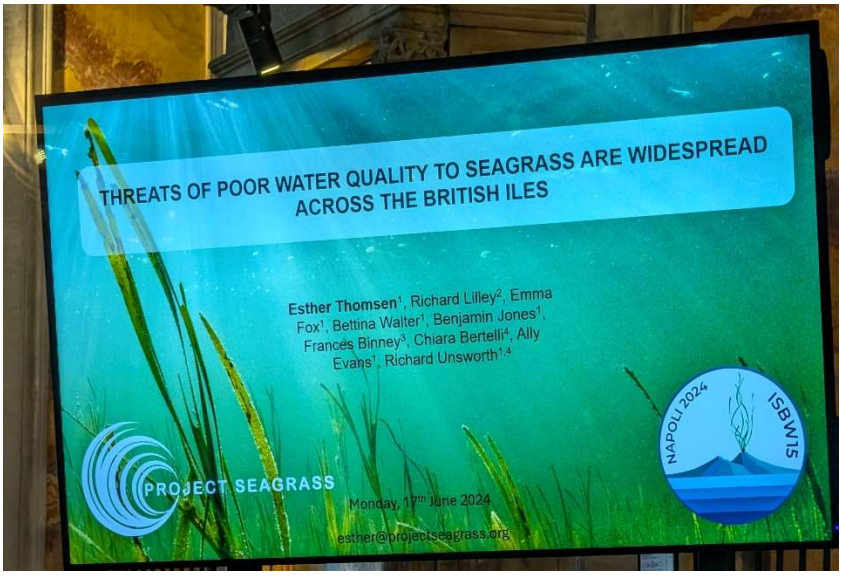
I was delighted to be able to attend the World Seagrass Conference this year, especially since I am the WWF Senedd Seagrass Champion and the President of the World Seagrass Association is currently Benjamin Jones from Project Seagrass based in Bridgend.

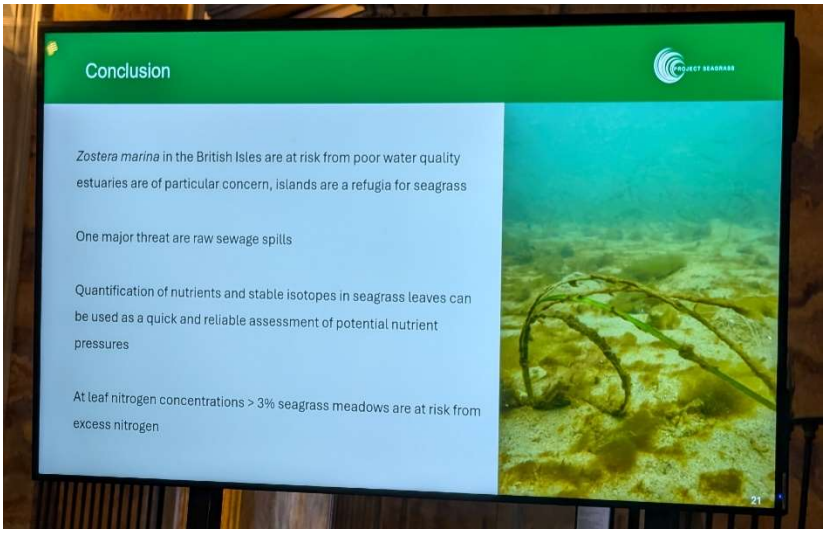
I would like to note that my presence representing Senedd Cymru did not go unnoticed, and the organisers were delighted that a parliamentarian had shown interest in the significance of seagrass restoration.

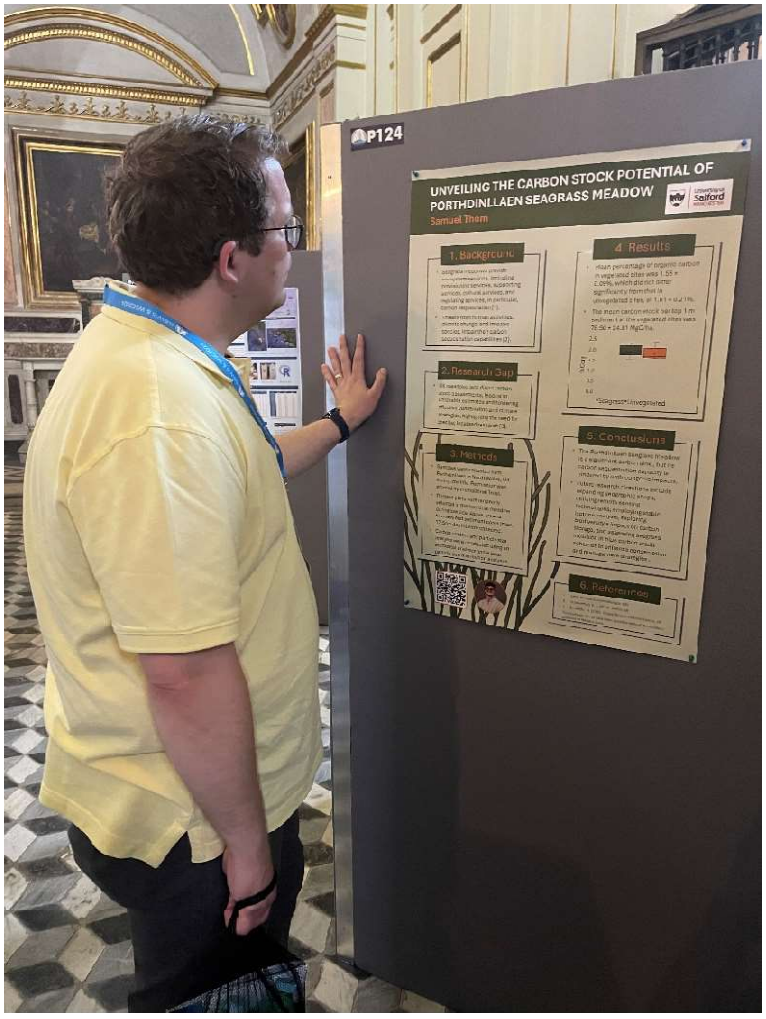
The conference received unprecedented support, with 486 participants from 48 countries, which shows the increased interest that has recently been taken in the restoration of seagrass populations.

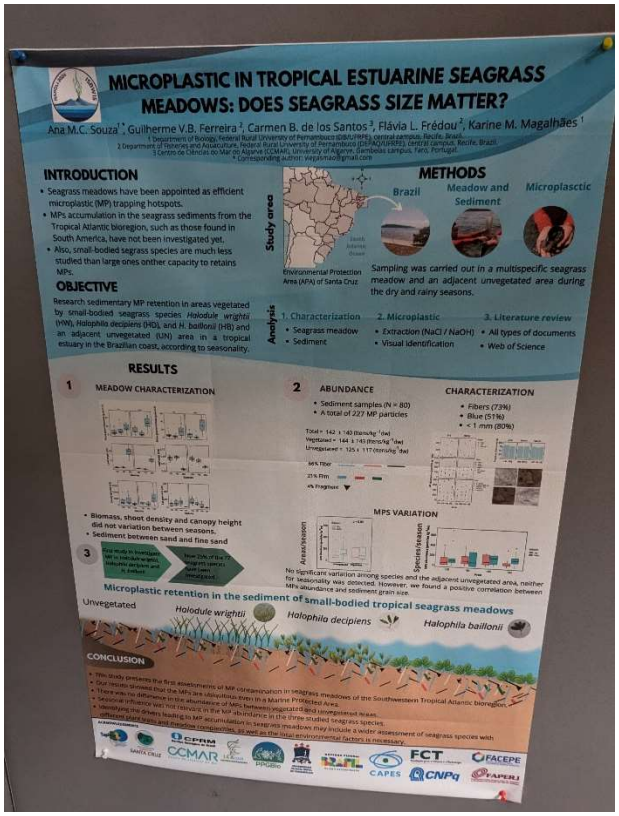
My attendance allowed me to network with several groups from around the world as well as learn a great deal more about seagrass. There were several presentations from seagrass scientists based in Wales, the UK and Ireland and it was a pleasure to be able to support the Welsh seagrass community on behalf of Senedd Cymru.

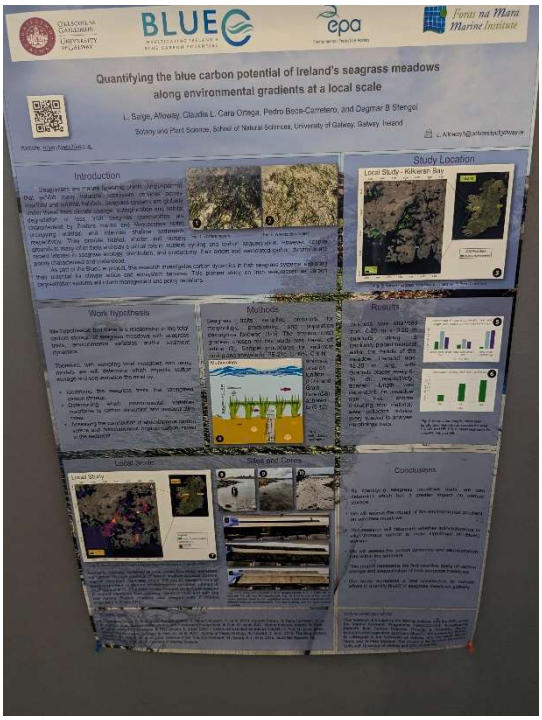
Below are images from one of the Welsh presentations and posters from Welsh delegates.




Conclusion
Zostera marina in the British Isles are at risk from poor water quality estuaries are of particular concern, islands are a refugia for seagrass
One major threat are raw sewage spills
Quantification of nutrients and stable isotopes in seagrass leaves can be used as a quick and reliable assessment of potential nutrient pressures
At leaf nitrogen concentrations > 3% seagrass meadows are at risk from excess nitrogen
21


P124
UNVEILING THE CARBON STOCK POTENTIAL OF PORTHDINLLAEN SEAGRASS MEADOW
Samuel Thom
1. Background
2. Research Gap
3. Methods
4. Results
5. Conclusions
6. References


MICROPLASTIC IN TROPICAL ESTUARINE SEAGRASS MEADOWS: DOES SEAGRASS SIZE MATTER?
Ana M.C. Souza [1*], Guilherme V.B. Ferreira [2], Carmen B. de los Santos [3], Flávia L. Frédou [2], Karine M. Magalhães [1]
INTRODUCTION
Seagrass meadows have been appointed as efficient microplastic (MP) trapping hotspots.
MPs accumulation in the seagrass sediments from the Tropical Atlantic bioregion, such as those found in South America, have not been investigated yet.
Also, small-bodied segrass species are much less studied than large ones onther capacity to retains MPs.
OBJECTIVE
Research sedimentary MP retention in areas vegetated by small-bodied seagrass species Halodule wrightii (HW), Halophila decipiens (HD), and H. baillonii (HB) and an adjacent unvegetated (UN) area in a tropical estuary in the Brazilian coast, according to seasonality.
METHODS
Study area
Brazil
Meadow and Sediment
Microplasctic
Environmental Protection Area (APA) of Santa Cruz
Sampling was carried out in a multispecific seagrass meadow and an adjacent unvegetated area during the dry and rainy seasons.
Analysis
1. Characterization
Seagrass meadow
Sediment
2. Microplastic
Extraction (NaCl / NaOH)
Visual identification
3. Literature review
All types of documents
Web of Science
RESULTS
1 MEADOW CHARACTERIZATION
Biomass, shoot density and canopy height did not variation between seasons.
Sediment between sand and fine sand
2 ABUNDANCE
Sediment samples (N = 80)
A total of 227 MP particles
CHARACTERIZATION
Fibers (73%)
Blue (51%)
< 1 mm (80%)
MPS VARIATION
No significant variation among species and the adjacent unvegetated area, neither for seasonality was detected. However, we found a positive correlation between MPs abundance and sediment grain size.
3
Microplastic retention in the sediment of small-bodied tropical seagrass meadows
Unvegetated
Halodule wrightii
Halophila decipiens
Halophila baillonii
CONCLUSION
This study presents the first assessments of MP contamination in seagrass meadows of the Southwestern Tropical Atlantic bioregion.
Our results showed that the MPs are ubiquitous even in a Marine Protected Area.
There was no difference in the abundance of MPs between vegetated and unvegetated areas.
Seasonal influence was not noticed in the MP abundance in the three studied seagrass species.
Although plant traits and shoot complexities do well as the local environmental factors is necessary.
CAPES
CNPq
FACEPE
FAPERJ


BLUE
epa
Quantifying the blue carbon potential of Ireland's seagrass meadows along environmental gradients at a local scale
Introduction
Study Location
Local Study - Kilkieran Bay
Work hypothesis
Methods
Results
Local Study
Sites and Cores
Conclusions

The importance of seagrass and understanding its contribution to climate change

Seagrasses have a significant global role in supporting food security, mitigating climate change, enriching biodiversity, purifying water, protecting coastlines and controlling diseases. In May 2022, the General Assembly of the United Nations proclaimed 1 March as World Seagrass Day.

Seagrass has been shown to be 40% more efficient at carbon capture than trees and accounts for 20% of carbon sinking. The UK has lost 92% of its seagrass meadows since the Second World War which has largely been due to dredging and poor water quality. Loss of seagrass meadows also results in a loss of biodiversity, because not only does seagrass provide shelter for marine life but it also reduces noise pollution by acting as an underwater dampener which improves the quality of the area for animal reproduction. I believe that it is imperative that we do everything possible from a policy point of view to learn about seagrass and how best to help restoration.

At the conference, I learnt more about seagrass in a Welsh/UK context. Firstly, there is only one seagrass species found in Wales, Zostera Marina, and because of this, there is no genetic diversity among the seagrass colonies in Wales. This means that if seagrass is destroyed due to environmental factors another species will not simply repopulate the available habitat. Investigations are underway to see if it is possible to genetically modify seagrass genomes so that they can become more thermal resistant and greater adaptability to pathogens.

I also learned that the UK water has 75% higher nitrogen content than the global average and this is contributing significantly to stopping seagrass meadows from flourishing.

Of particular note were presentations given regarding Seagrass restoration in the coastal waters around Virginia in the USA, which has been a global success story through the work of scientists from the Virginia Institute of Marine Science (VIMS) who found a small patch of eelgrass and figured out how to restore it in this system. There was also discussion around The University of Virginia's Long Term Ecological Research program which has developed a methodology that is being used to quantify the amount of carbon that is being sequestered in seagrass beds. This has great potential in allowing seagrass to qualify for carbon credits which will generate considerable income for further restoration.

There were notable presentations of much interest around how seagrasses trap microplastics and the development of restoration techniques in UK waters.

Further work

The information I learnt from attending this conference certainly informs my contributions to policy and to questions to the Cabinet secretary regarding the marine environment, especially since seagrass restoration is part of the Welsh Government's forward work programme.

Since this conference, I have arranged for follow-up meetings with people I have met at the conference to discuss what legislative changes are needed to help seagrass restoration in Wales. I have also expanded this work to now include seaweed and the potential for seaweed farming in Wales.