Restoration of Kent's Seagrass

Transforming the Thames

Kent & Medway LNRS Launch

28th November 2025

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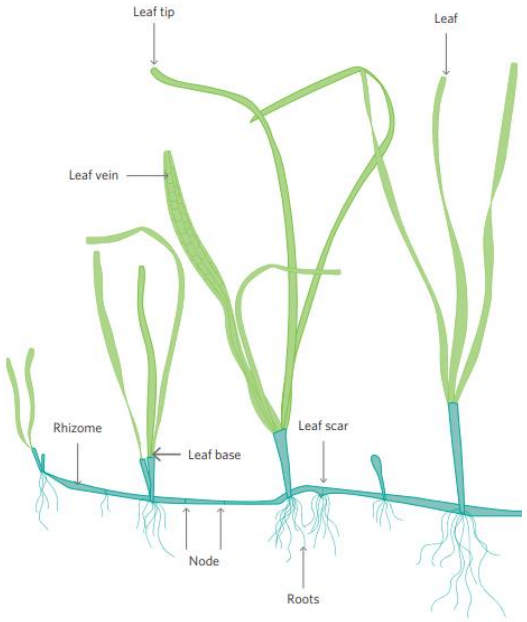
Seagrass

The only flowering plant that is adapted to grow in the sea



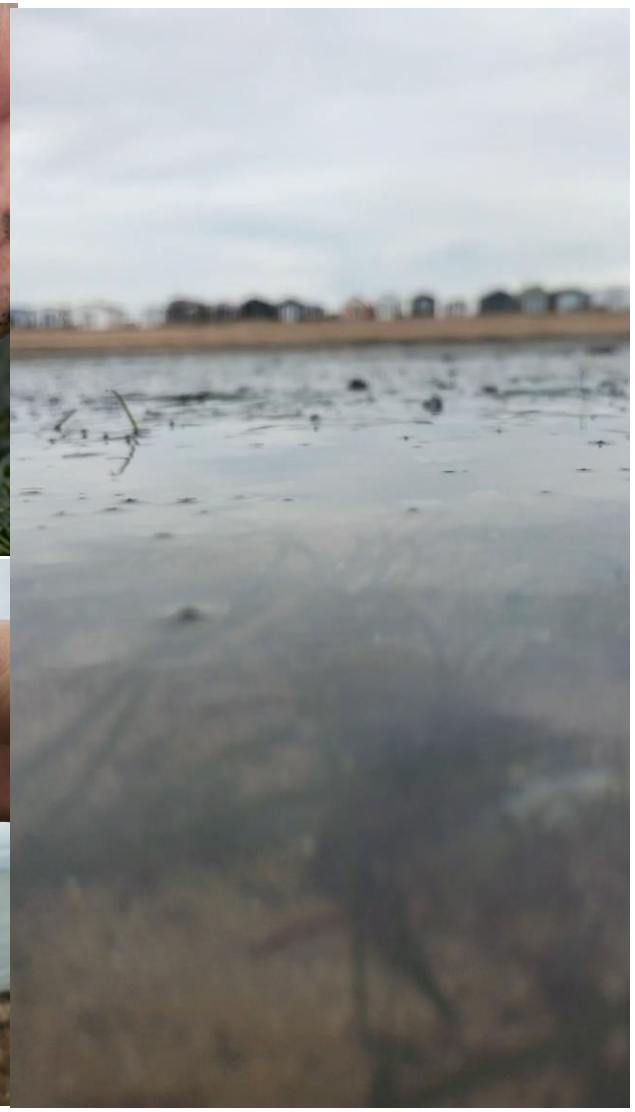
UK Seagrass Species

Zostera marina

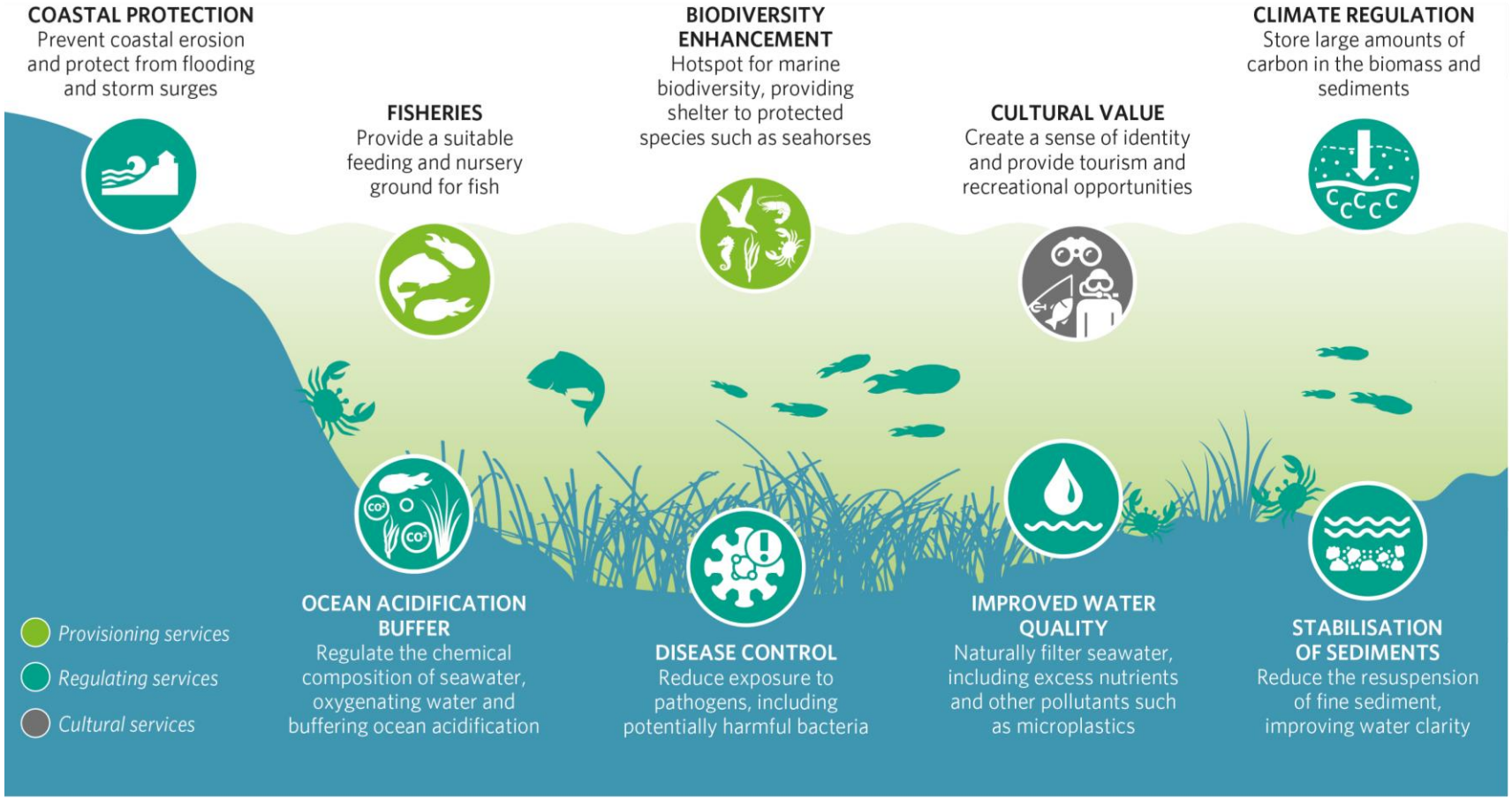
Zostera noltei

Seagrass supports biodiversity



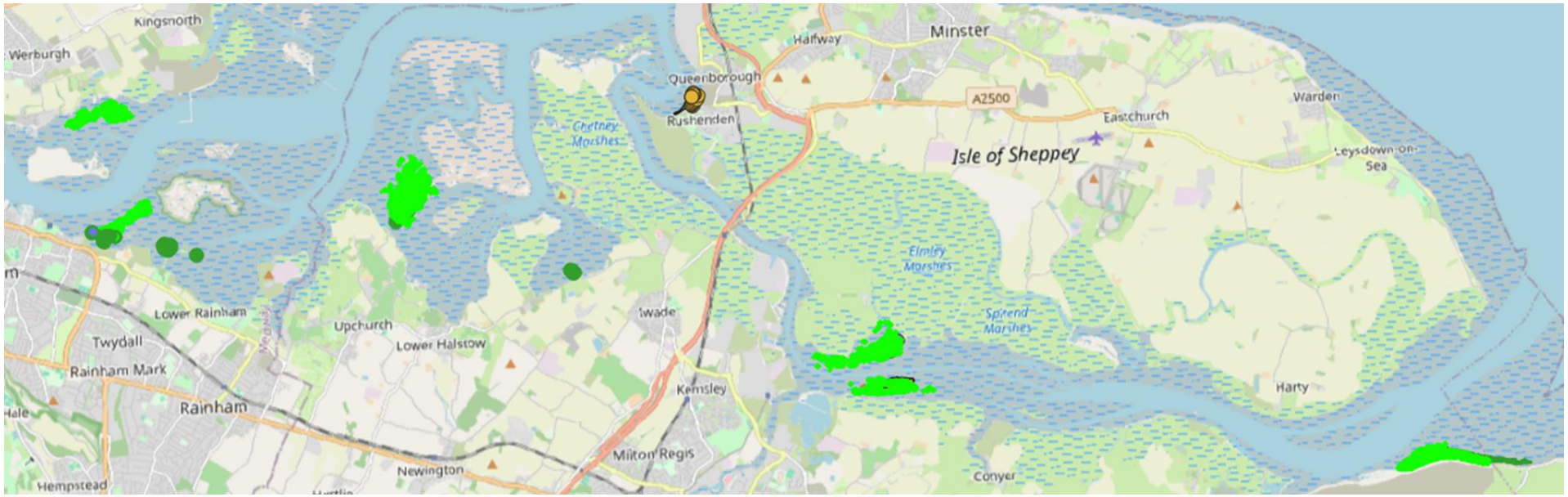




Seagrass Ecosystem Services



Modified from UNEP (2020) and Potouroglou, M., Westerveld, L. and Fylakis, G. (2020).

Where do we find seagrass in Kent?



- Intertidal zone
- Predominately at the top of the shore – light limited
- Across south bank of Thames/Hoo Peninsula, Medway and Swale Estuary
- Mostly very soft mud but also some sandier substrate

What does seagrass in Kent look like?

- Dominated by *Zostera noltii*, patches of *Zostera marina* – annual?
- *Zostera noltii* typically found in ‘hummocks’ (engineered by the seagrass?) and *Zostera marina* in pools
- When *Zostera noltii* grows in meadows at high density it can trap and hold water even at low tide – may reduce desiccation risk
- Varies from <1sqm patches to >250,000sqm (25ha)
- Varies from <5% cover per sqm to 100% cover per sqm

The National Context

- Too few seagrass beds are monitored too infrequently
- Global & local challenge – how to protect what we don't know we have?
- Most up to date mapping exercise suggests **8,493ha of seagrass** (both species, intertidal and subtidal waters) **left in UK – a bit more than the size of Canterbury!**
- Average size of a seagrass record is 2.64 +/- 32.22ha
- In Kent, this habitat endures and some records >25ha in size – something to be proud of ☺
- But current high-confidence estimates – **at least 44% of the UK's seagrass has been lost since 1936, most of it since the 1980s** (Green *et al.*, 2021)
- Need pressure removal – to protect what we still have, to promote natural recovery and to create optimum conditions for any restoration to succeed

Kent LNRS Coastal Measures

Making Space for Nature in Kent and Medway

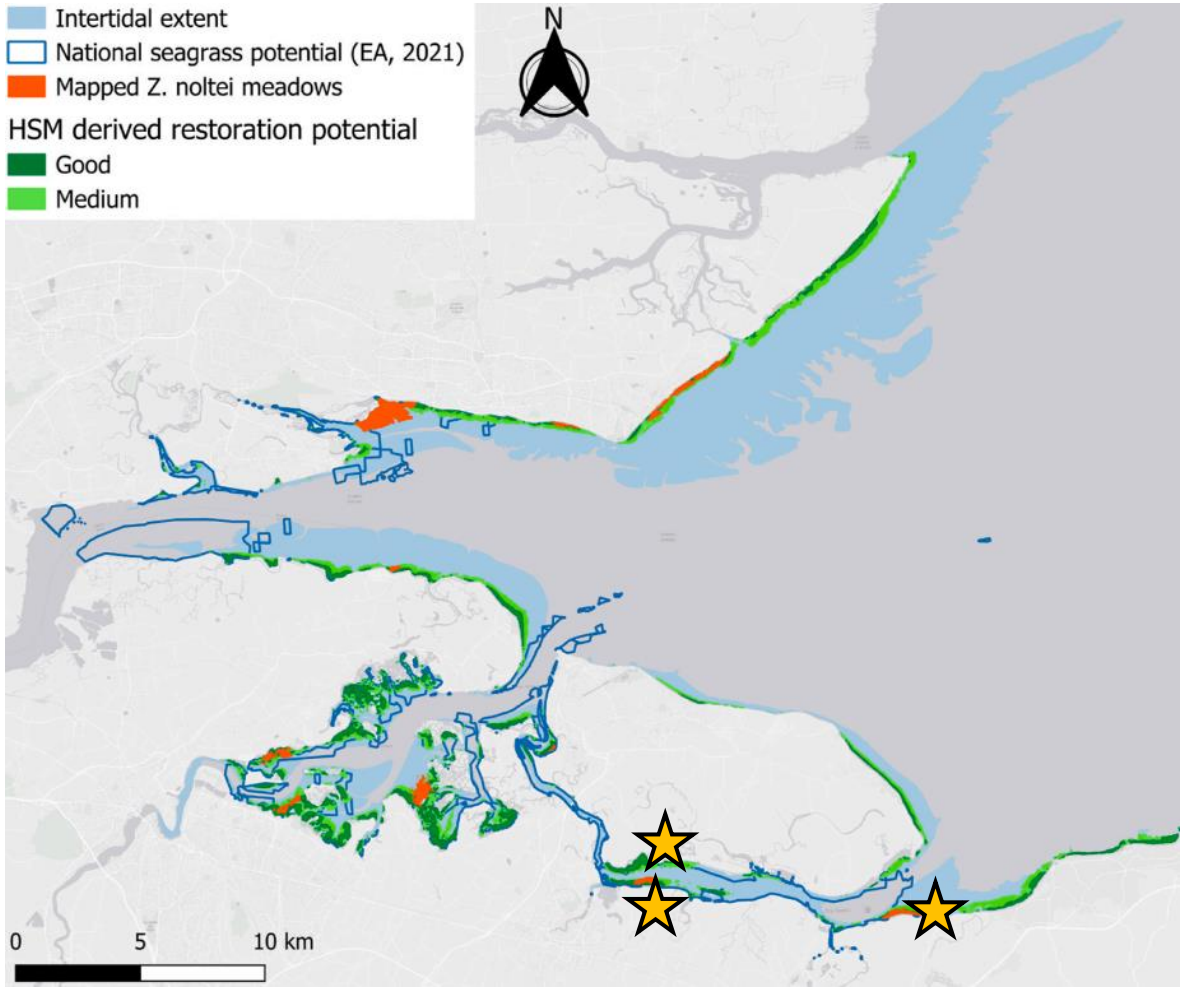
Developing the County's Local Nature Recovery Strategy

- Coastal Measures - CL
- CL1
  - CL1.4 – **Create areas for** saltmarsh restoration, **seagrass regeneration**, and high-tide roosts, and provide breeding areas for seabirds and/or waders
- CL3
  - CL3.1 – **Address threats to seagrass beds** by putting in place management which:
    - **Reduces and addresses pollution sources** that impact seagrass restoration and growth
    - Minimises damage from boat anchors, dredging, fishing and trampling
  - CL3.2 – Increase areas of existing seagrass beds

Seagrass restoration since 2022

- “Snow shoes for mud”
- Mapped >30ha of intertidal seagrass meadows in Kent, found seagrass growing at 5 previously unreported sites
- Identified suitable donor meadow for plant material

Developed a Habitat Suitability Model (Grigg *et al.*, 2025)



First active restoration trials for intertidal seagrass in Medway Swale Estuary in 2023

1. Cores of seagrass plants + sediment

2. Direct Injection Seeding (DIS)

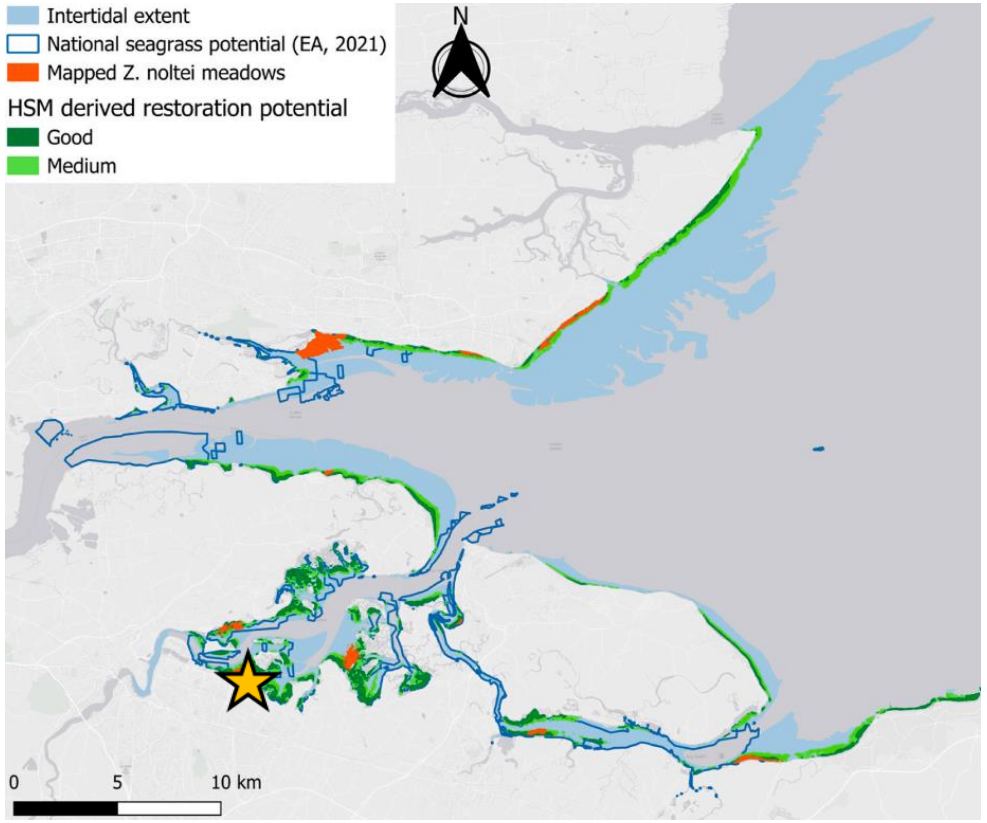
March 2024 – Overwinter survival from 2023 planting

May 2024 – First signs of new season growth

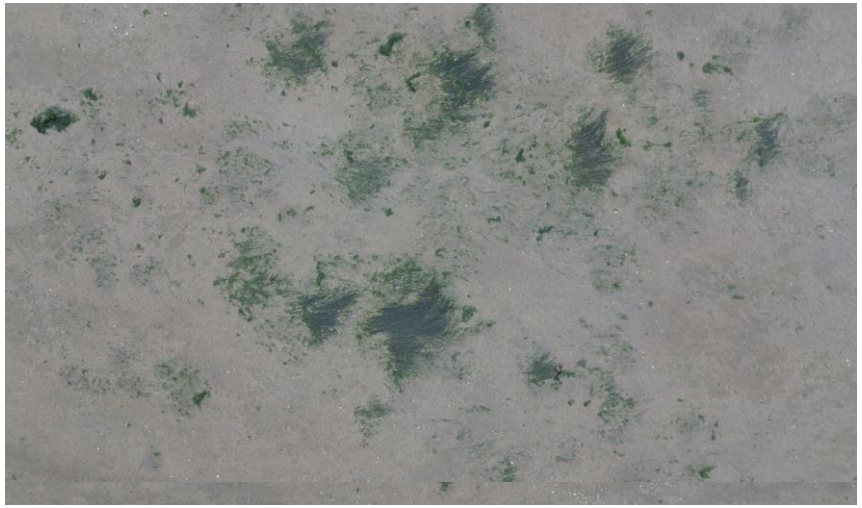
September 2024 – Expansion over summer

It is working…

Medway Estuary Restoration Site – Copperhouse Marshes

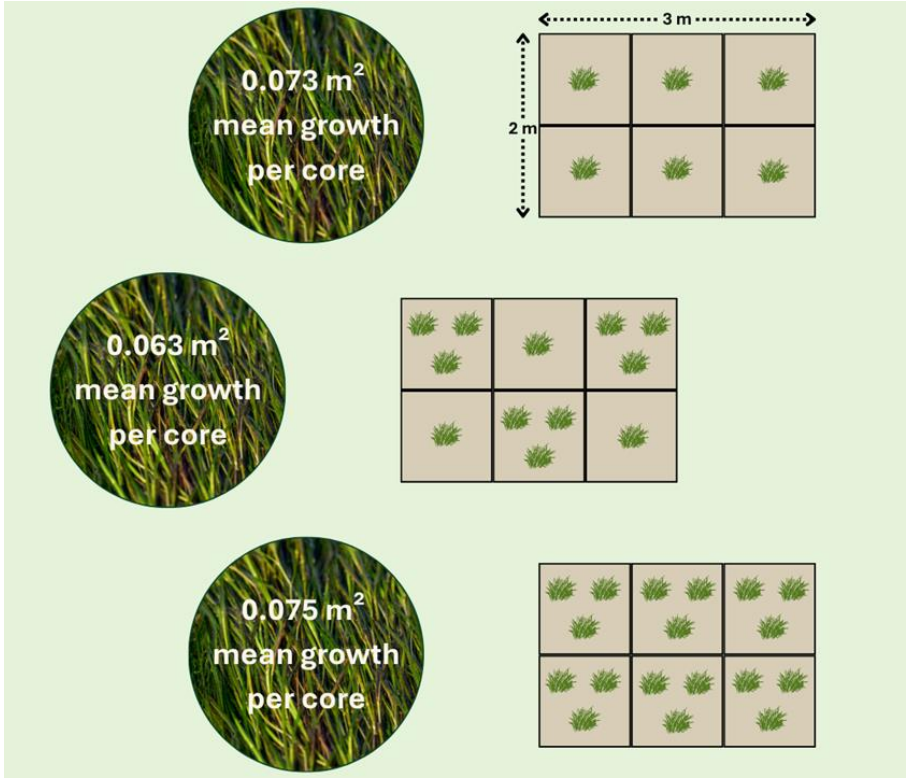


- Method – cores
- Planted in 2024 and 2025
- Developed a drone-based monitoring approach to reduce foot traffic and potential spread limitation



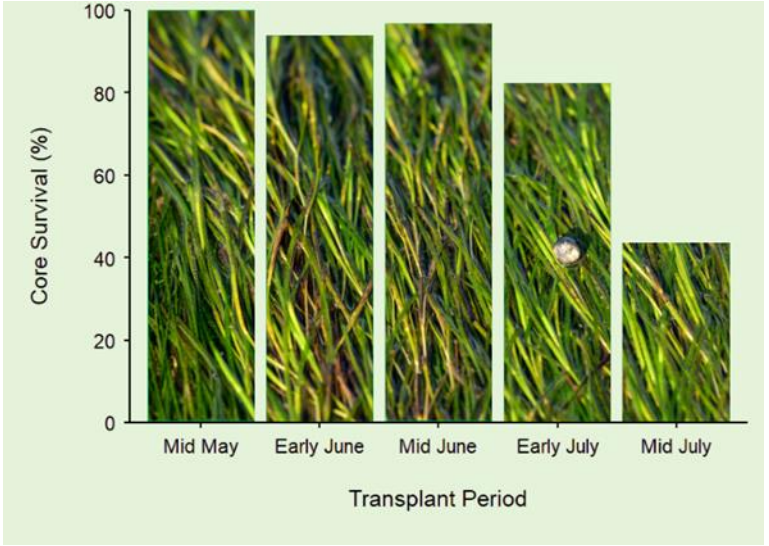
2024 – Configuration Trials

- Setup up trials to understand optimal planting layout – does clustering cores boost growth?
- Drone imaging used to monitor transplant trials one year on
- Clustering cores more densely has not enhanced growth, so far
- Mean growth per core remained relatively consistent across configurations
- Continued monitoring to look at patch size to determine optimal donor spacing

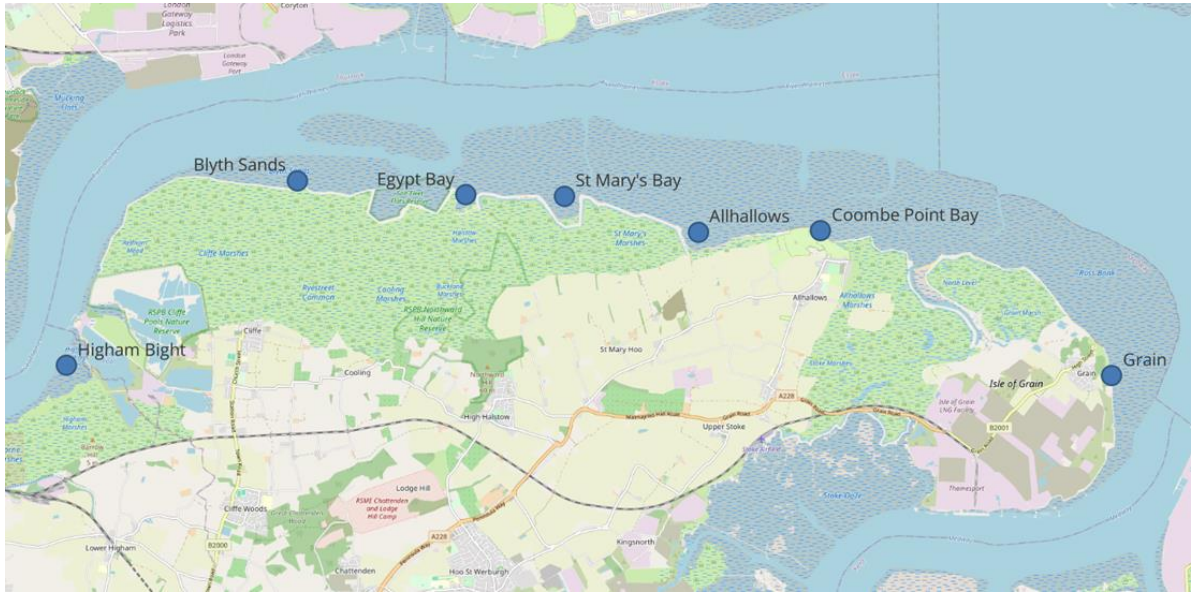


2025 – Seasonal Impacts

- 6 x 100 m^2 plots planted at a density of 1 core per metre
- Staggered planting from May to July 2025
- Growth declined with later planting in months
- **May planting had a 100% survival rate, July had a 43% survival rate**



2026 - Lower Thames Restoration Site



Challenges

- Scaling up
- Pressures such as poor water quality – extreme nutrient enrichment compared to global averages (Jones & Unsworth, 2016, Fox et al., 2023)
- To restore ecological function, we need multi-habitat recovery, at scale, and well-connected
  - This demands strategic spatial planning
  - Transforming the Thames is an opportunity to help deliver local nature recovery in Kent

Macroalgal blooms due to excess nutrients can smother mudflats, seagrass meadows and saltmarsh, creating anoxic conditions where plants and animals can't survive

Seagrass restoration methods are currently all manual and rely on wild donor material

Transforming the Thames

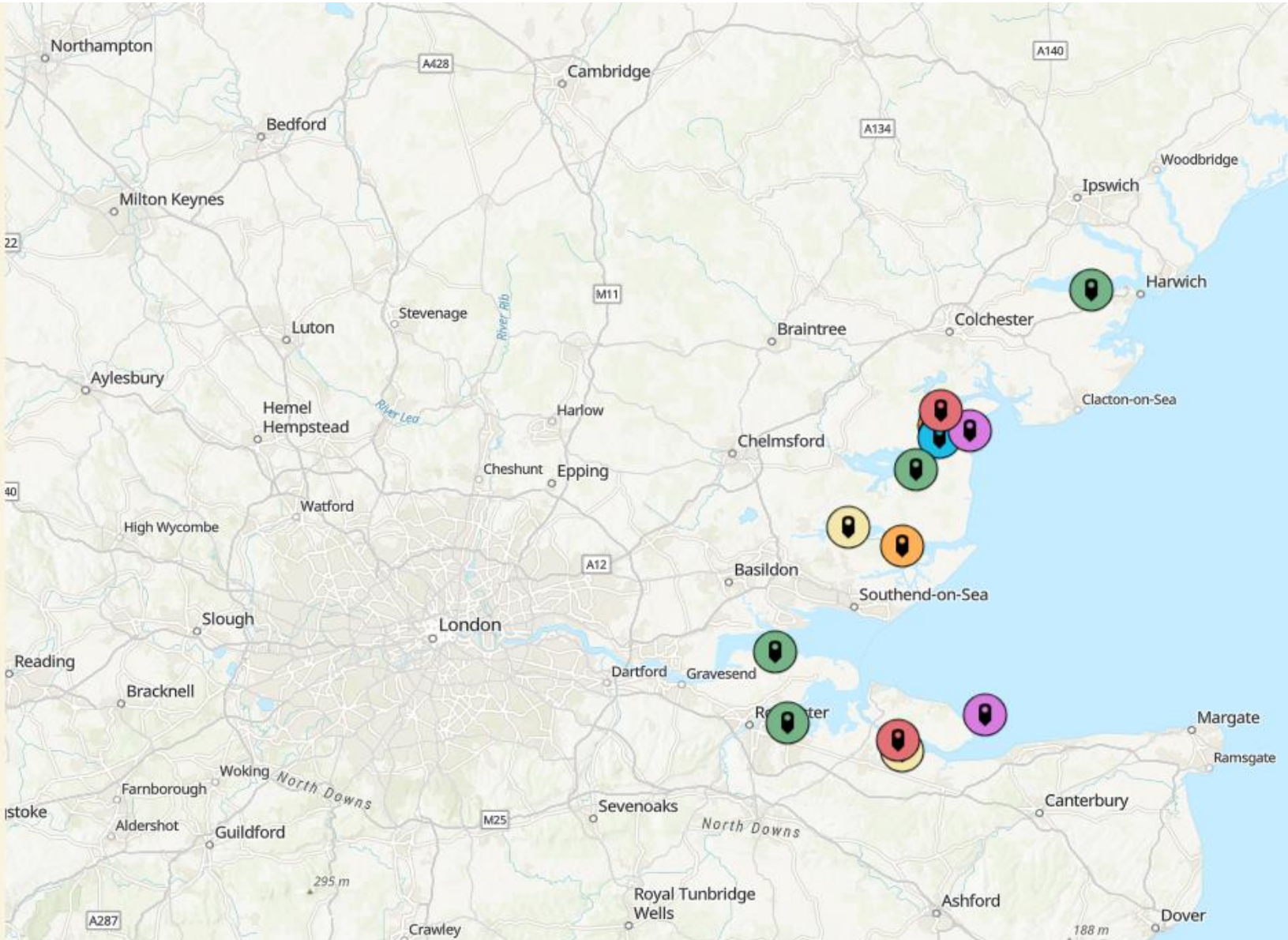
The Thames Estuary will be recovered, reconnected and resilient, an outstanding coastal wetland for nature and communities.

Endangered Landscapes & Seascapes Programme

Restore over 320ha of coastal habitats across 14 sites

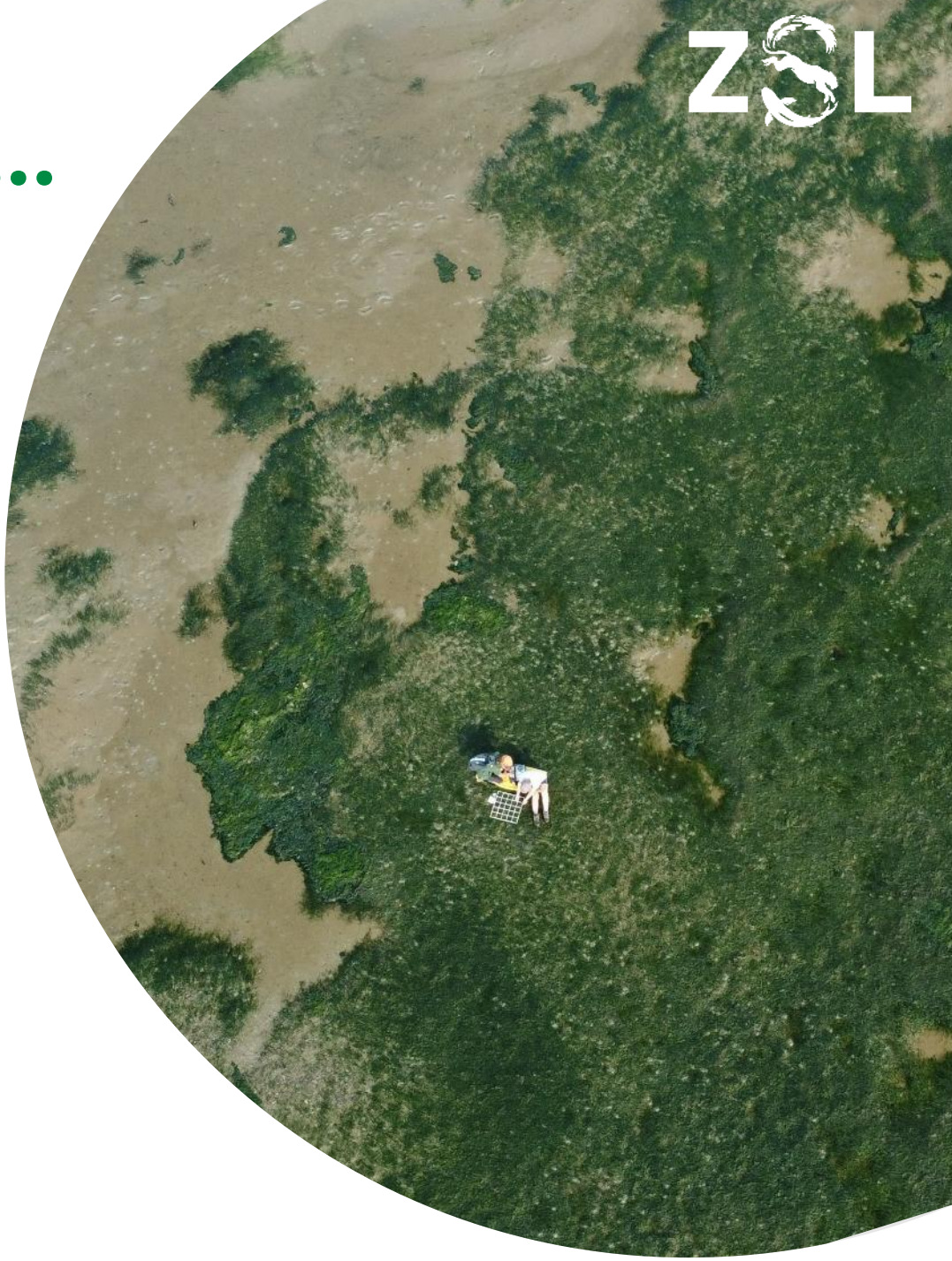
Transforming the Thames five year restoration plan.

- Saltmarsh
- Seagrass
- Native oysters
- Sand and shingle
- Saline lagoons
- Coastal grazing marsh



The plan for the next 5 years…

- **Unite**
  - Build a diverse partnership, connecting communities, industry, and government
- **Restore**
  - Recovery of 6 key habitats
- **Enhance**
  - Reduce pollution and other pressures to secure long-term ecological health
- **Building capacity**
  - Develop expertise and train the next generation of restoration practitioners
- **Enable scale**
  - Expand restoration through coordinated planning, infrastructure, and policy
- **Inspire**
  - Engage stakeholders and communities to foster pride and connection with the estuary



Thank you for listening

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Funders

Endangered Landscapes & Seascapes Programme

The Linbury Trust

Marshall Wace

Ida Davis Foundation

Oak Foundation

Garfield Weston Foundation

Rewilding Britain

Environment Agency

Our Coalition

Kent Wildlife Trust

Adonis Blue Environmental Consultants

Bird Aware Essex Coast

The Crown Estate

Environment Agency

Essex and Suffolk Rivers Trust

Essex County Council

Essex Wildlife Trust

Essex Rivers Hub

Kent & Essex IFCA Inshore Fisheries and Conservation Authority

Kent County Council kent.gov.uk

Medway Swale Estuary Partnership

Natural England

Port of London Authority

Project Seagrass

RSPB

Thames Estuary Partnership

University of Essex

ZSL Zoological Society of London