



Restoring Saltmarsh for Carbon Storage



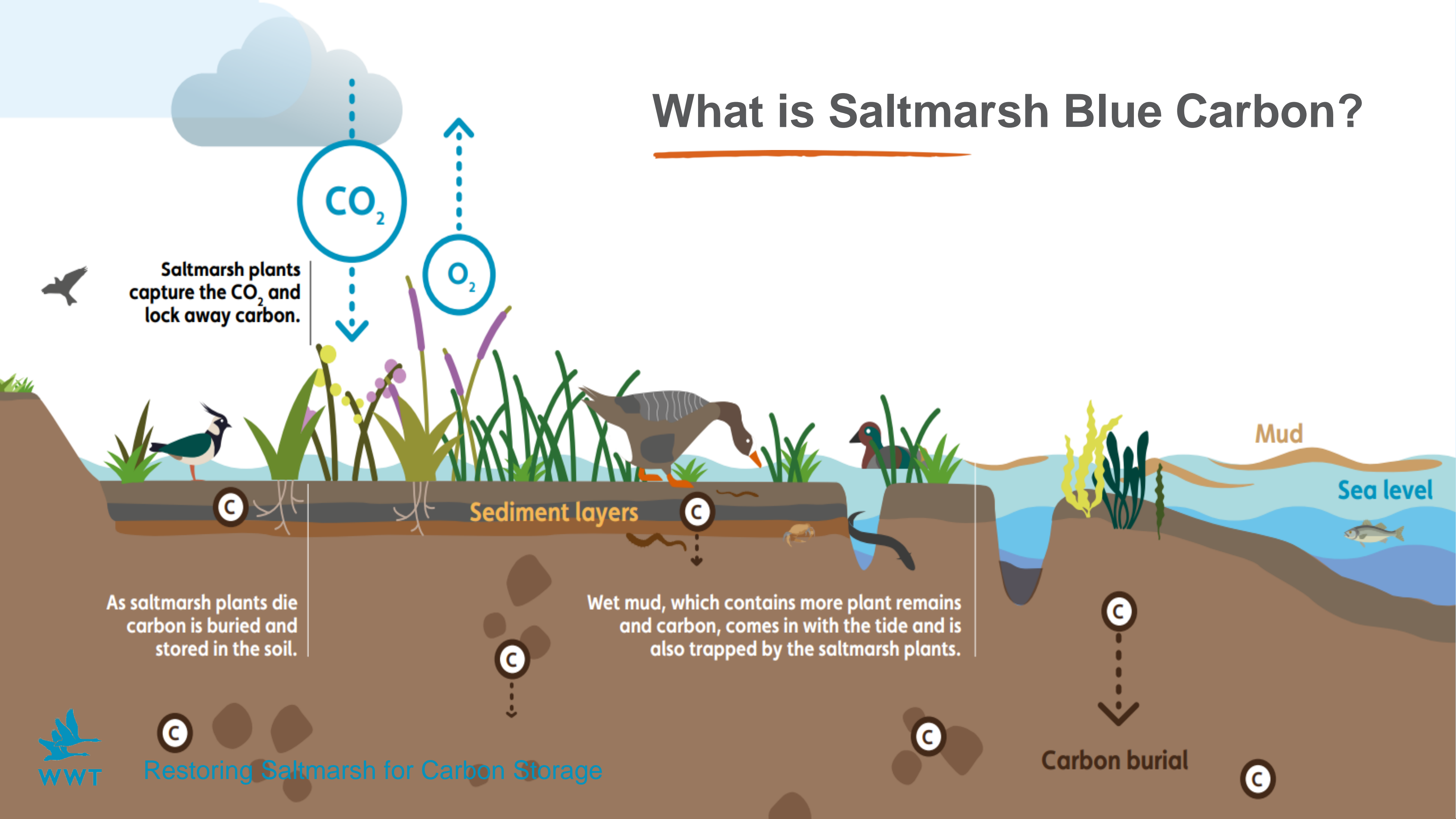
a route map to coastal restoration

Wildfowl & Wetlands Trust

- WWT is the UK's leading wetland conservation charity
- We create, restore and manage wetlands, save wetland wildlife, and inspire communities to value the amazing things wetlands can do for people and nature
- We have a demonstrable track record of working with communities to deliver urban, rural and coastal wetland creation at scale
- We have the experience and capabilities to develop and pursue projects that deliver multiple societal benefits
- We are pioneering the development of saltmarsh creation through understanding long-term investment opportunities



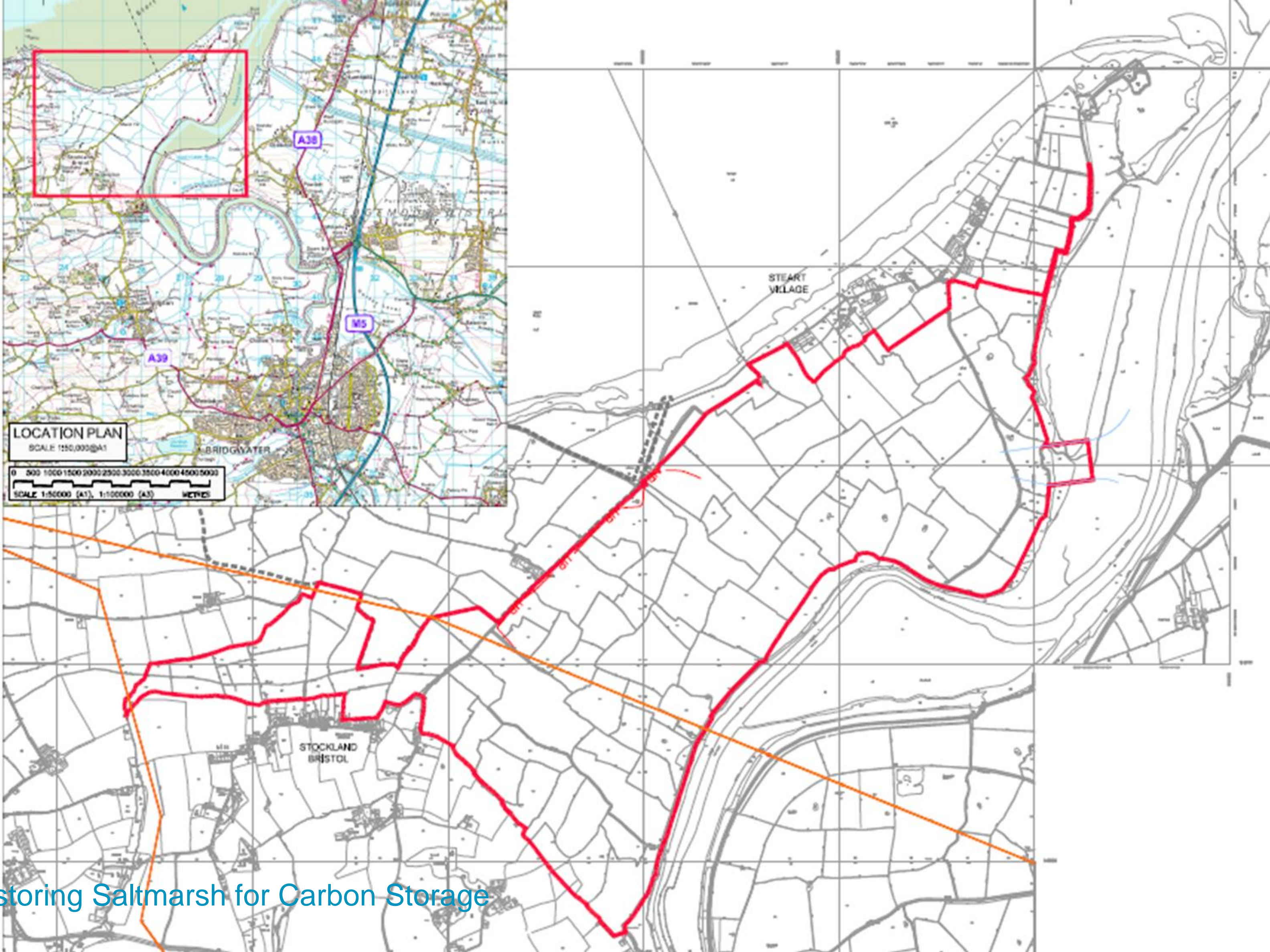
What is Saltmarsh Blue Carbon?



WWT Steart Marshes

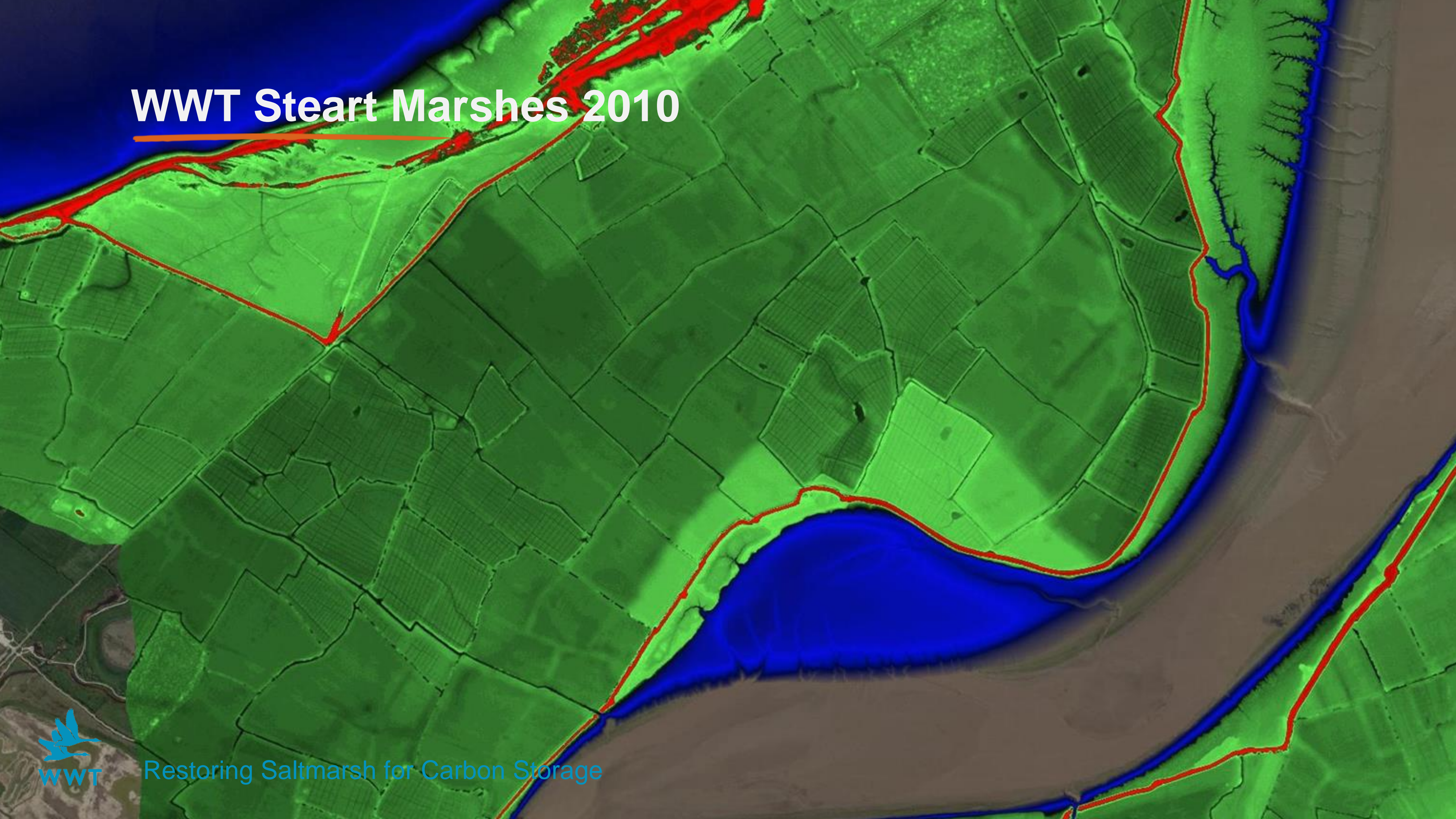


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WWT Steart Marshes 2010



Restoring Saltmarsh for Carbon Storage

WWT Steart Marshes 2014



Restoring Saltmarsh for Carbon Storage

WWT Steart Marshes 2020



Restoring Saltmarsh for Carbon Storage

Proposal

WWT proposes the creation and restoration of a minimum of 22,000 hectares of nature-rich saltmarsh by 2050, and the protection of our existing saltmarsh resource, to maximise the opportunity for blue carbon and co-benefits

- Saltmarshes have traditionally been on the edge of society and large swathes have been lost to development or agriculture over many centuries
- In places there is a reliance on coastal flood defences that are becoming increasingly costly to maintain
- The societal worth of existing and restored saltmarshes needs to be re-evaluated & celebrated



Purpose

Saltmarshes provide multiple benefits, including carbon capture, while boosting biodiversity. We would like to see an increase in healthy saltmarsh in the UK

- Carbon sequestration: existing restored saltmarshes in the UK have been estimated to annually store an average of 13.3 tonnes of CO₂e/ha/yr, compared to 8.2 tonnes in naturally occurring saltmarsh
- Creating habitats: saltmarsh is considered a priority habitat in the UK. Multiple resident and migratory taxa are dependant on them
- Water quality: saltmarshes can play a key role in improving water quality through filtering out pollution
- Reducing flood risk: coastal wetlands can provide natural flood management
- Wellbeing: wetlands improve our mental wellbeing and combat mental illness



Table (2). A 2011 estimate of the monetary value of ecosystem services provided by worldwide coastal marshes (shown in hectares per year or ha⁻¹yr⁻¹)³⁷



£15.27 ha⁻¹yr⁻¹

**Raw materials
(including food provisioning)**

Generates biological productivity and diversity



£7,200 ha⁻¹yr⁻¹

Natural hazard regulation

Attenuates and/or dissipates waves



£1,700–32,200 ha⁻¹

**Regulation of pollution
and water purification**

Provides nutrient and pollution uptake, as well as retention, particle deposition



£2,100–13,900 ha⁻¹

Maintenance of fisheries

Provides sustainable reproductive habitat and nursery grounds, sheltered living space



£26 ha⁻¹yr⁻¹

Organic matter accumulation

Generates biogeochemical activity, sedimentation, biological productivity



£32.80 person⁻¹

Recreation and aesthetics

Provides unique and aesthetic submerged vegetated landscape, suitable habitat for flora and fauna

Potential

WWT has developed indicative maps that identify the potential to create over 300,000 hectares of new saltmarsh across the UK

- The Natural Capital Committee found a strong economic case for the creation of 22,000ha of saltmarsh around the English coastline
- WWT have identified 306,688ha of saltmarsh creation potential across the UK (England: 258,013ha; Wales: 25,762ha; Scotland: 15,591ha; and Northern Ireland: 7,322ha).

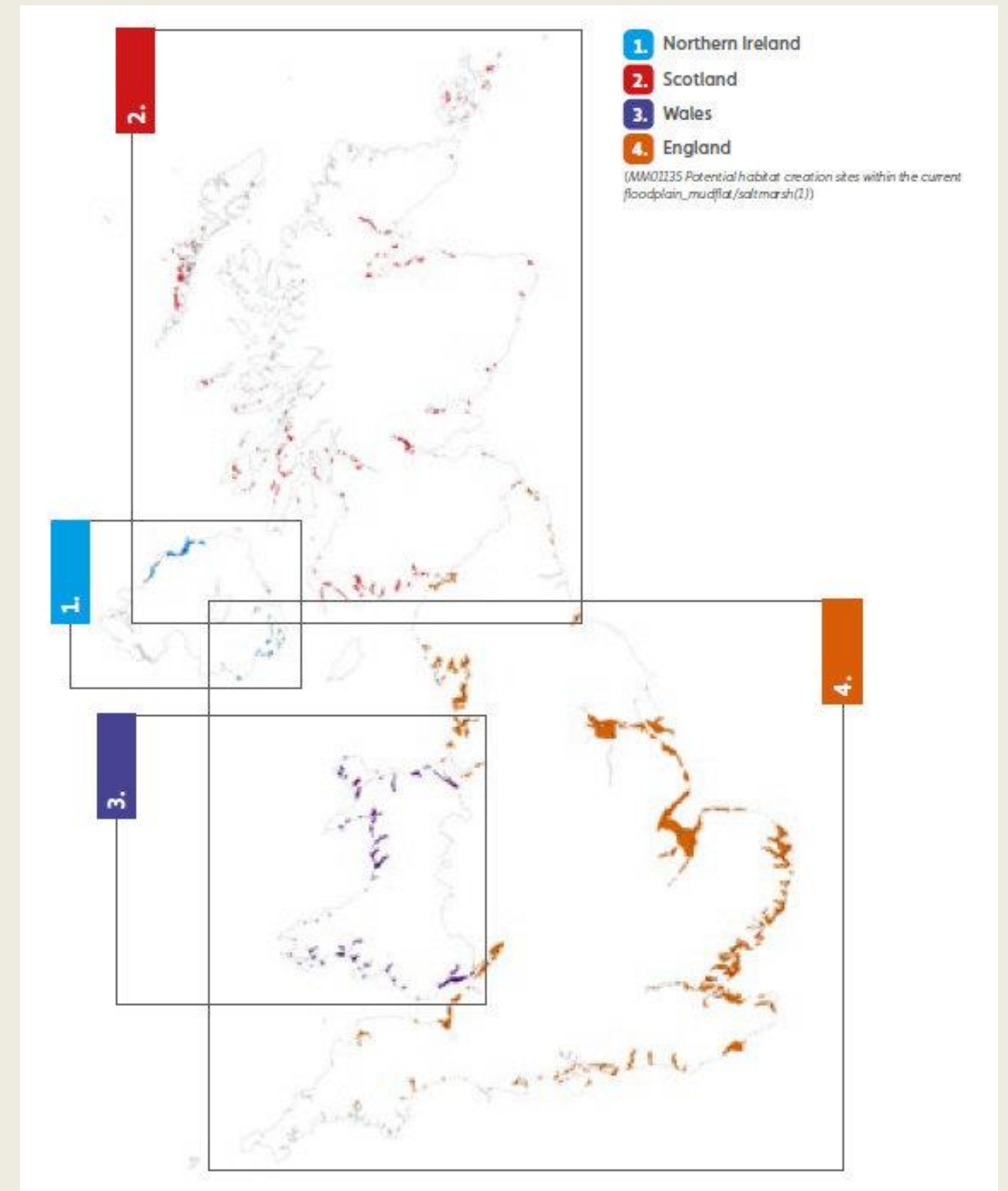
Resource	Extent/opportunity hectares	Carbon burial rate tCO ₂ e ha ⁻¹ yr ⁻¹	Annual value tCO ₂ e ha ⁻¹ yr ⁻¹
Existing UK saltmarsh extent	48,545 ^{41,42,43,44}	8.2 ⁴⁶	394,617
Existing UK coastal realignment	2,252 ⁴⁵	13.3 ⁴⁶	30,590
NCC ambition for saltmarsh creation	22,000	13.3	292,600
Total (estimated)			717,807



Potential

What is the evidence needed to accelerate saltmarsh creation?

- Understanding how much 'additional' carbon is buried by restored saltmarshes
- Understanding carbon sequestration rates and how they change over time
- Better understanding the associated benefits
- Evidence to support community engagement



Process

- The process of delivering at scale will require building capacity through developing evidence, advice and training, while engaging communities on project design and delivery.
- Protection and effective management of existing saltmarsh is also vital to ensure the carbon remains buried
- The process of establishing saltmarshes as a carbon offset will be key to reaching our 22,000 hectare target. However, to ensure this is done effectively it is important to create a transparent, credible and verifiable approach.
- Finalising the Saltmarsh Carbon Code will help achieve this
CEH, WWT, Jacobs, RSPB, Finance Earth, SRUC (2023)
- Development of a Carbon Market with clarity on stacking or bundling benefits



Partnership

No single organisation alone will be able to create saltmarsh for blue carbon.

- To create saltmarsh at the scale required we need the involvement of national and local governments, the investment and know-how of businesses, and a process of co-creation with landowners and local communities
- Government, Private business, Financiers, Economists, Scientists, Communities, Landowners & Managers, Specialist Consultants, Engineers, Ecologists, eNGOs; all needed for delivery, capacity building and stakeholder engagement
- Pilot sites and demonstration of good practice to inform & guide policy



Conclusion

WWT proposes the creation and restoration of a minimum of 22,000 hectares of nature-rich saltmarsh by 2050, and the protection of our existing saltmarsh resource, to maximise this habitat's significant blue carbon storage potential and co-benefits.

- This will require public and private investment, and a blend of the two, to deliver at the scale required. We need to build the capacity of stakeholders to create these habitats, primarily through managed realignment. Engaging with communities to co-create projects at all stages will be crucial to the creation of saltmarshes for carbon and co-benefits that sit at the heart of community life
- By restoring and creating saltmarsh at scale we can increase resilience to climate change, boost biodiversity, reduce flood risks, improve water quality and improve the wellbeing of people who access coastal wetlands



Thank you

