



SEA THE VALUE

MARINE BIODIVERSITY BENEFITS
FOR A SUSTAINABLE SOCIETY

Solent Case Study

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www.seathevalue.org



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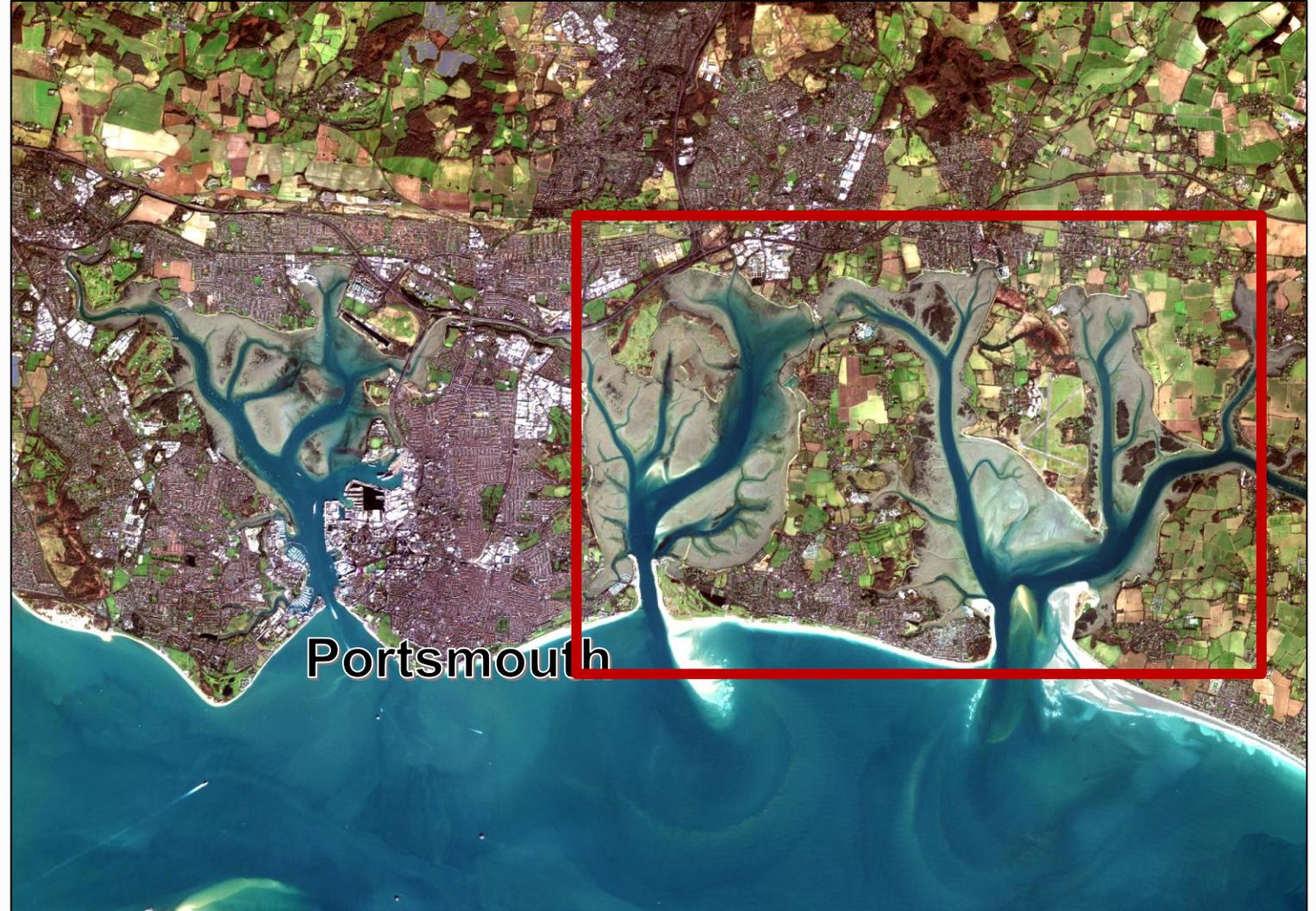
The Team





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WP1

Quantifying linkages between Biodiversity, Natural Capital and Ecosystem Services

**Focus on the role which marine biodiversity plays
in providing the regulating services of climate
regulation and bioremediation of waste**



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Langstone and Chichester Harbours in the Solent have suffered significant declines in key habitats over many decades.

At the same time are some of the most protected areas of coast in the UK (SAC, RAMSAR SITE, SPA, and SSSI (Chichester also is an AONB)).



Langstone Harbour

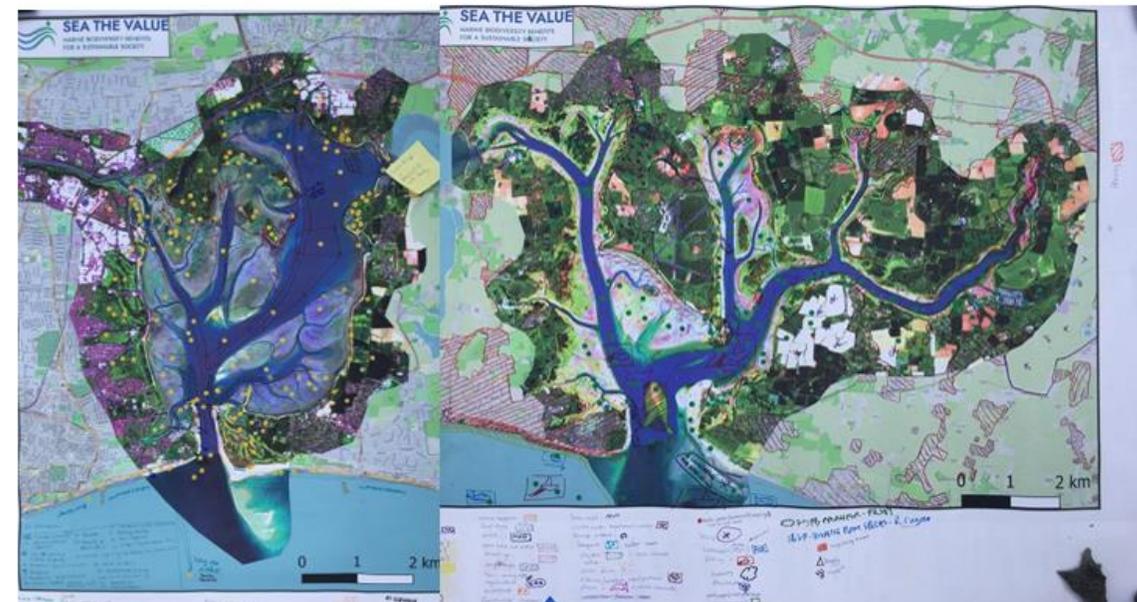


Chichester Harbour



Participatory mapping - Solent

- Mapping carried out over two full day sessions (Workshop 1 and 2), Portsmouth: methodology based on Burdon et al. 2022¹.
- Sentinel 2 maps were provided without annotations
- Stakeholders identified using expert knowledge,
 - a) different features in the satellite imageries.
 - b) different benefits those features provide

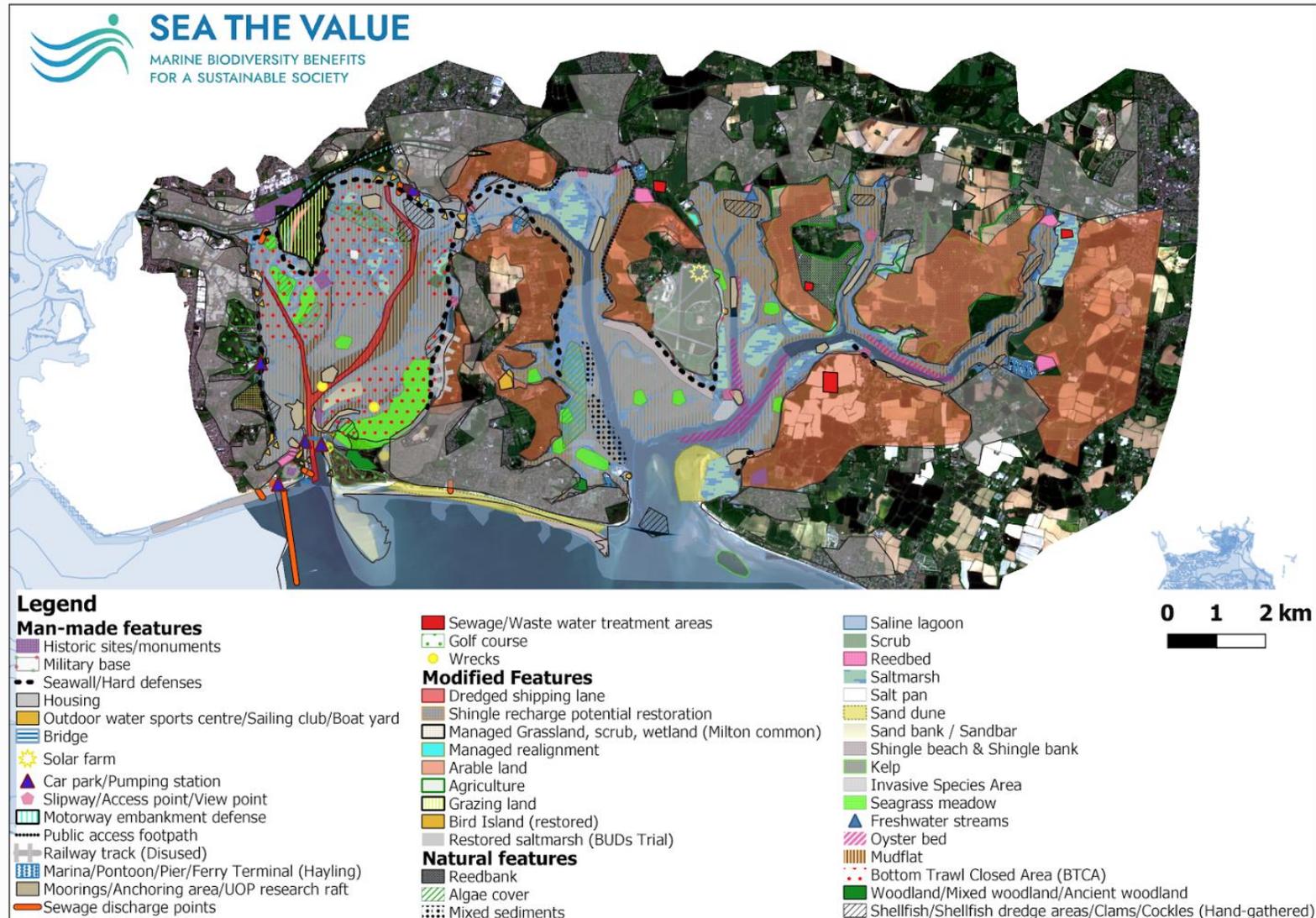


¹ *Burdon, D., Potts, T., Barnard, S., Boyes, S.J. & Lannin, A., 2022. Linking natural capital, benefits and beneficiaries: The role of participatory mapping and logic chains for community engagement. *Environmental Science & Policy*, 134, pp. 85-99. <https://doi.org/10.1016/j.envsci.2022.04.003>



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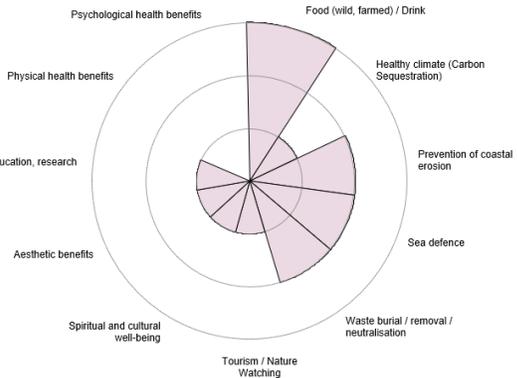
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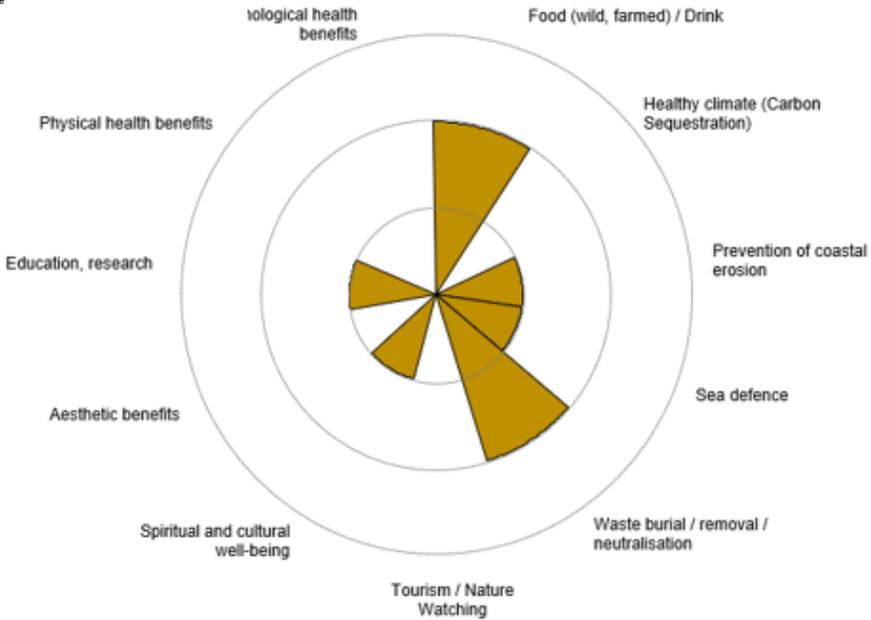
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Relative Importance of Benefits from Native Oyster Beds

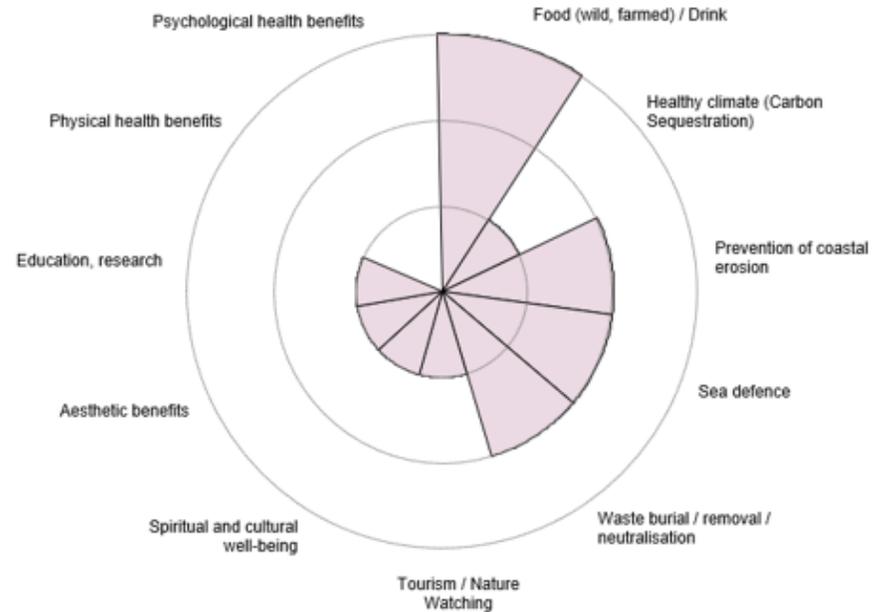


Relative Importance of Benefits from Subtidal Mixed Sediments



Business As Usual Scenario: Relative importance of subtidal mixed sediments in delivering societal benefits.

Relative Importance of Benefits from Native Oyster Beds



Scenario 2 - Native Oyster Restoration: Relative importance of Native oyster reefs in delivering societal benefits.



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- Stakeholders are then able to score how they think different benefits will change from one habitat to another
- In the last workshop on April 16th we will then be looking at which habitats have importance to different beneficiaries and which stakeholders who are reliant/dependant



Output from the trade-off assessment for the 'Oyster Restoration scenario (combined results from 3 tables of 5 or 6 stakeholders). The shaded bars with black dot represent the combined change from the 'Business as Usual' scenario (represented as 0), with the variance of responses across the three tables represented by the dashed line.



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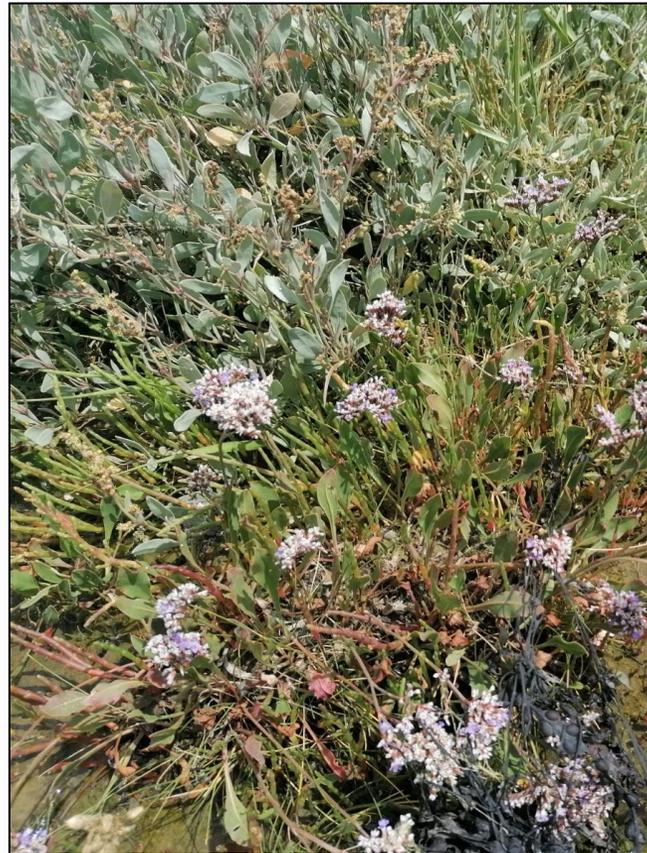
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Three key habitats:

Native oyster reefs



Saltmarsh



© Hayley Craig

Seagrass



© Xavier Rufay



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Seagrass



© Luke Helmer

Native oyster reefs

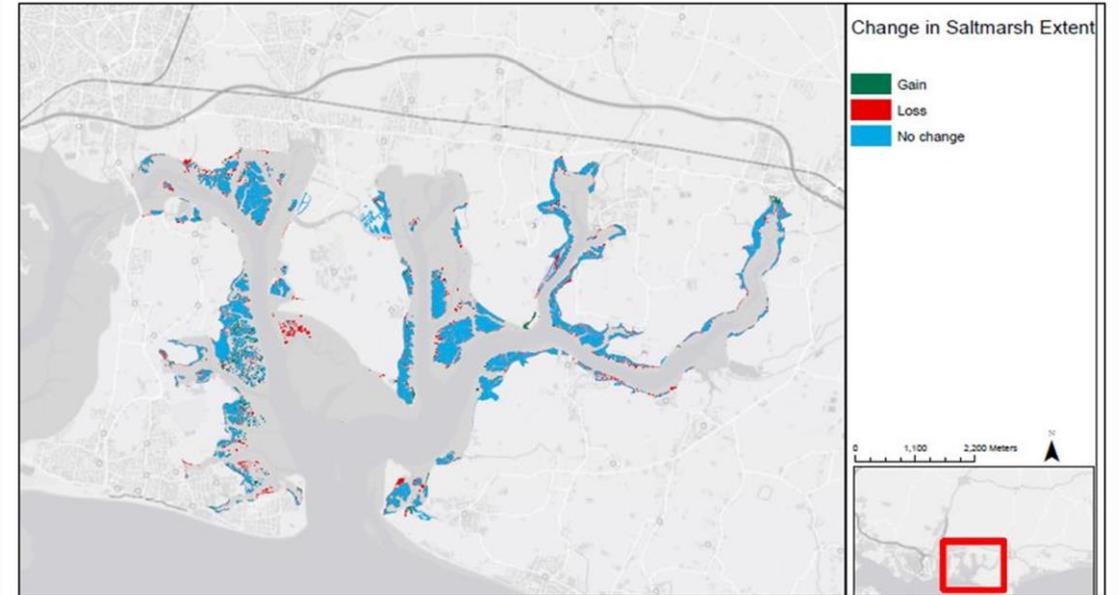


© Luke Helmer

Saltmarsh



Assessing quantity

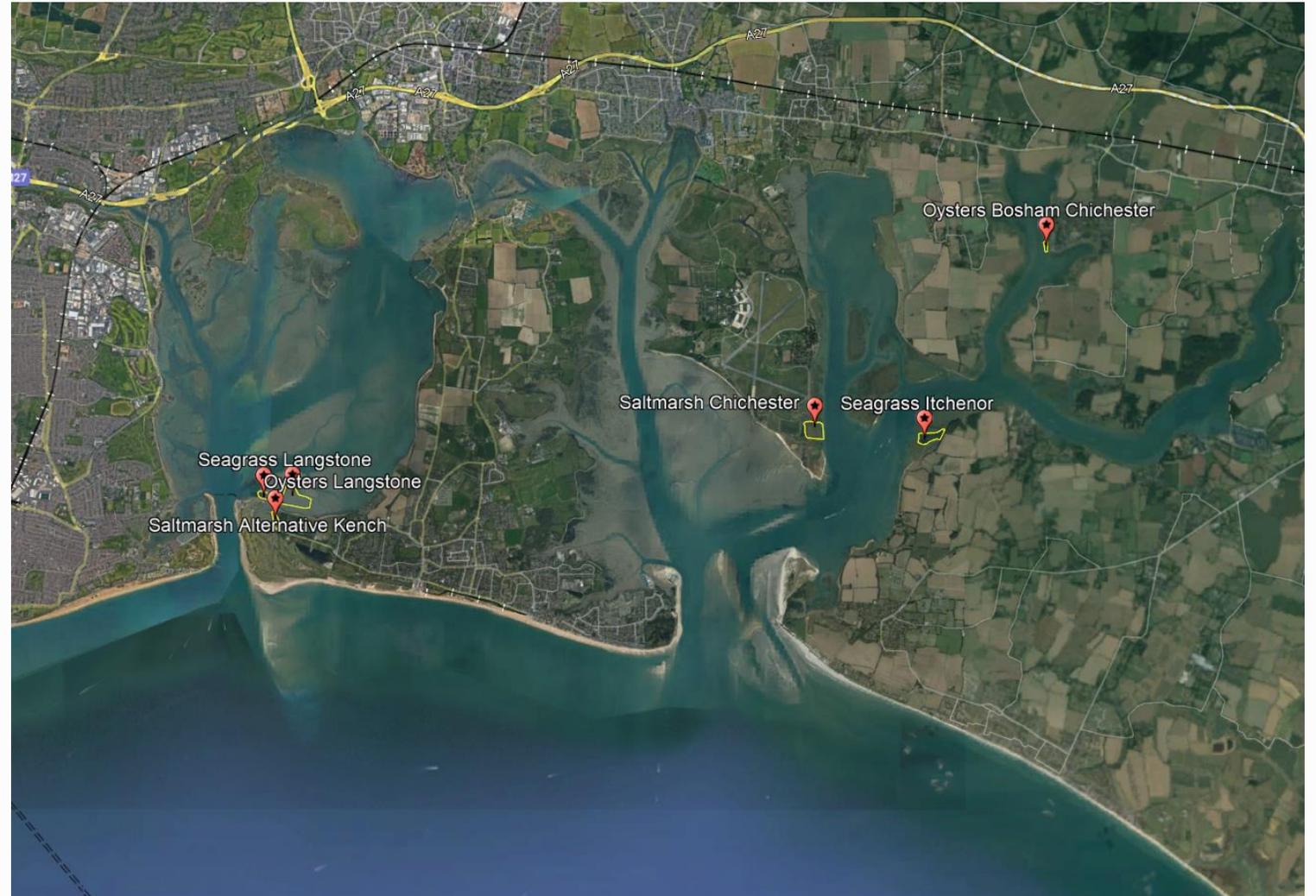




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- All three key habitats in both harbours surveyed
- Sediment analysis
 - Particle size analysis
 - Total organic carbon
 - Ammoniacal nitrogen as NH_3 and NH_4
- Macrofauna
 - Diversity
 - Abundance
- Denitrification





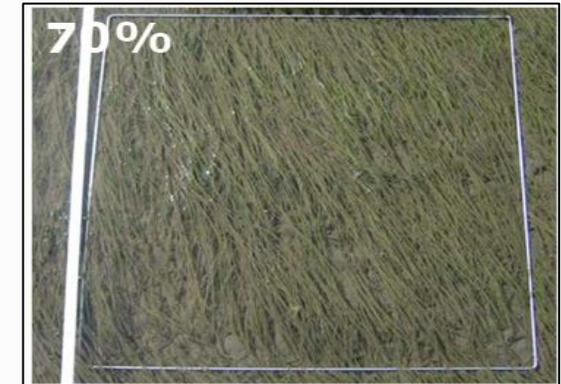
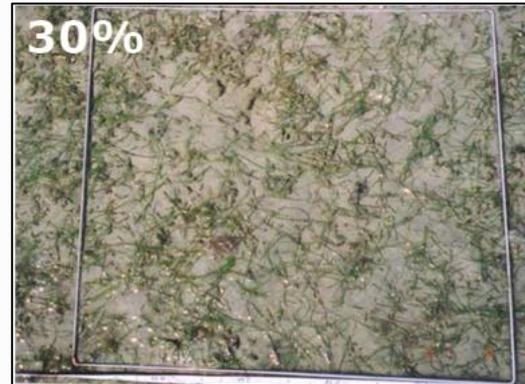
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Assessing quality

Seagrass

Percentage coverage
Shoot density



Native oyster reefs

Presence of *Ostrea edulis*
Presence of only
Crassostrea gigas



Saltmarsh

Species diversity





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Fieldwork is now finished

Currently analysing this data

**Sea the Value project is
continuing until 2025**





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Thank you

