Working in partnership for the future of the Severn Estuary

PARTNERIAETH MÔR HAFREN
SEVERN ESTUARY PARTNERSHIP

Celebrating 30 years of SEP!

Severn Estuary Forum 2025

Weston-super-Mare

JBA consulting

THE BRISTOL PORT COMPANY

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GrandPierEvent
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www.slido.com #SEP2025

Welcome to Weston-super-Mare

Cllr Annemieke Waite, North Somerset Council

30 Years of SEP: Where we've been and where we're going

Celebrating Three Decades of Partnership, Progress, and Vision

30 Years of SEP

1995 SEP Established

1998 ASERA Founded

2001 First Severn Estuary Strategy

2009 Marine Act - SEP supports cross border work

2010 Joins Coastal Partnerships Network

2011 SoSER Published

2014 Marine Spatial Planning Input

2016 LFCSS

2017 Revised SE Strategy

2020 LFCSS Campaign Expanded

2023 Severn Vision 2

2023 Governance Review and Recommendations

2024 Launch of the MACC Hub

2025 Launch of the Severn Estuary Biosecurity Plan

2025 Nature Networks 4 Funding Secured

2025 Bird Aware Severn Launches

2026.....

The Present: Partnership in Action

Supporting Management of the MPA

Influencing Policy

Growing our Engagement & Volunteering Opportunities

Maximising Climate Adaptation

Advocating Integration of the SMP

Developing Citizen Science Initiatives

Championing Partnership delivery

Exploring Partnership Expansion

Future Proofing the Severn Estuary (Wales)

Funded by the Nature Networks Fund (round 4)

BUILD THE SEP TEAM

UPDATE THE STATE OF THE SEVERN ESTUARY REPORT

INCREASED FOCUS ON BIOSECURITY

BIRD AWARE SEVERN ACTIVITIES

SOURCE TO SEA

STAKEHOLDER DAYS


Sewage pollution
Plastic pollution
PLASTIC FREE SCHOOLS
POWER TO THE PUPILS


NO DOG WASTE PLEASE
RECYCLE FISHING LINE, COMMERCIAL NET AND ROPE DEBRIS HERE
www.anglers-nire.co.uk
WARNING


This Nurdle Trommel is sponsored by
Viridor

Bird Aware Severn

Creating a coastline where people’s recreation does not impact overwintering birds

Severn Estuary Biosecurity Plan

Language: **English** | Cymraeg

Biosecurity Action Plans – what are the pathways in the Severn Estuary?

There are various routes that marine invasive non-native species can arrive by and spread, and these are termed 'pathways'. During stakeholder workshops held in the Severn Estuary area in 2023 and 2024, key pathways relevant to the Severn Estuary were identified and action plans were developed for each. For some of these pathways, there is already a wealth of information available on relevant actions and how to mitigate spread, which we have linked for users where appropriate. However, for other pathways, there is currently limited guidance on best practice mitigation. Our biosecurity action plans outline the actions that can be taken in the Severn Estuary to address the risks posed by marine invasive non-native species associated with these pathways.

Severn Estuary Action Plans:

The plan has been split into 7 different action plans to make it easier for individual interest groups to identify and implement actions relevant to them. The action plans are:

Recreation

(Photo credit Cardiff Harbour Authority)

Angling

(Photo credit Visit Wales)

Commercial Operations

(Photo credit Associated British Ports)

MACC Hub

Together for Transformative Action

Introducing the MACC Hub

Building resilience and collaboration for 2030

Planning for Sustainable Growth

- Lead regional understanding through the updated State of the Severn Report
- Guide marine and coastal planning with integrated evidence
- Influence cross-border development decisions and policy frameworks

Accelerating Climate Resilience

- Deploy MACC Hub resources to enhance local adaptation strategies
- Promote nature-based solutions
- Embed climate resilience in policy and community decision-making

Broadening Engagement & Literacy

- Advance ocean literacy
- Expand stakeholder participation via SEP Forums and digital outreach
- Promote citizen science through estuary-wide initiatives

Deepening Collaborative Governance

- Coordinate shared delivery across relevant authorities and NGOs
- Build alignment with UK and devolved governments' environmental goals
- Deliver estuary-wide initiatives


What will the estuary look like in 2050?

BE PART OF THE JOURNEY

Join us in shaping the next chapter of the Severn Estuary

www.slido.com #SEP2025

Session One: Protecting the Severn for the Future – How we Manage the Estuary's Natural Heritage

Ffion Mitchell-Langford, Marine Conservation Society

In Awre of River Severn saltmarsh

Clare Dinnis,
Director of Wetland Conservation

WWT
For wetlands. For life.

What makes the Severn special?

Over a four year period, over 18,000[38] tonnes of organic carbon was stored at WWT Steart Marshes.

1M+

This is equivalent to the carbon stored by over one million new trees grown over a 10 year period.

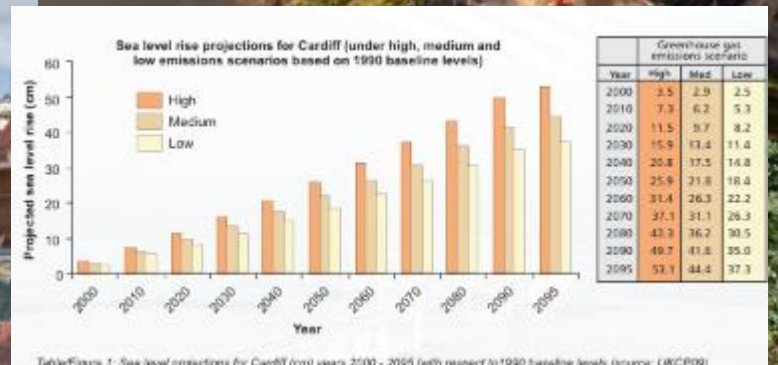
77.9K

Or the greenhouse gas emissions from powering 77,930 UK homes for one year.

32.9K

Or taking 32,900 cars off the road for a year.

An uncertain future



	Greenhouse gas emissions scenario		
Year	High	Med	Low
2000	2.5	2.9	2.5
2010	7.3	6.2	5.3
2020	11.5	9.7	8.2
2030	15.9	13.4	11.4
2040	20.8	17.5	14.8
2050	25.9	21.8	18.4
2060	31.4	26.3	22.2
2070	37.1	31.1	26.3
2080	43.3	36.2	30.5
2090	49.7	41.6	35.0
2095	53.1	44.4	37.3

Table/Figure 1: Sea level projections for Cardiff (mid years 2000 - 2095 (with respect to 1990 baseline levels (source: UKCP09)

Saltmarsh Solutions

Achieving all the (multiple) benefits

Severn Estuary Commission
Comisiwn Aber Afon Hafren

Western Gateway
Porth y Gorllewin

Recommendation 3:
Create a regional plan to enable the better management of the Severn Estuary

Severn Estuary Partnership

Thank you

WWT

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Bathing Water Quality in the Severn Estuary

Richard Acornley

Severn Estuary Forum 3rd July 2025

Environment Agency

Severn Estuary Bathing Waters (English coast only)

Monitoring and classification

Monitoring

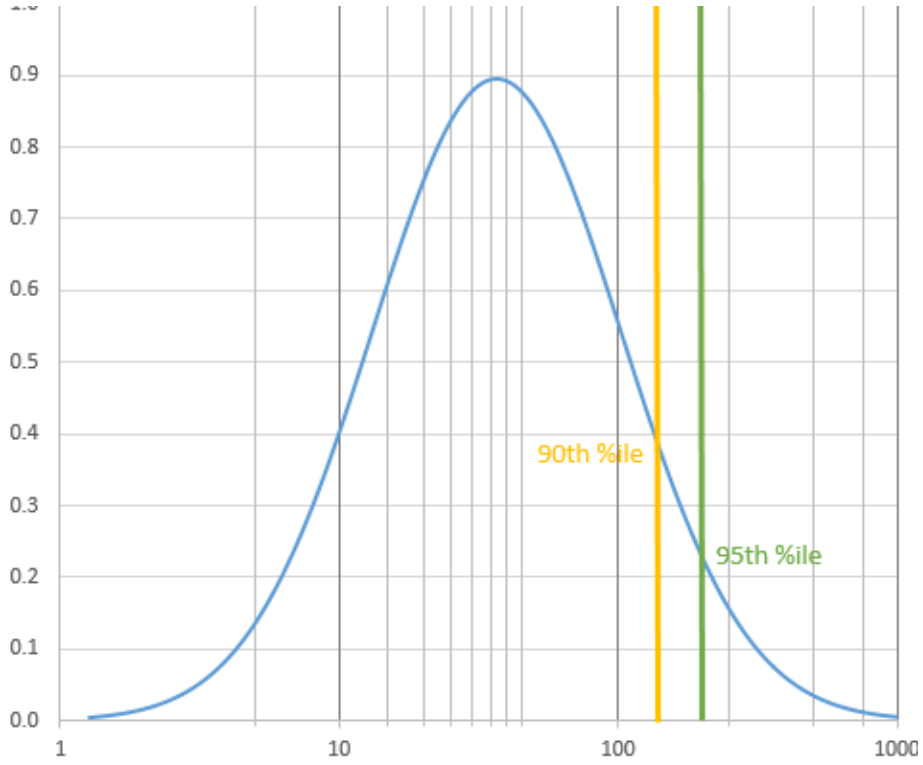
- May to September (bathing season)
- 20 samples per season
- Samples taken at high water springs
- *E. coli* and intestinal enterococci

Classification

- Previous 4 years data
- Percentile evaluation

Environment Agency

Bathing Water Standards



		E. coli	I.E.
Excellent	95 %ile	≤250	≤100
Good	95 %ile	≤500	≤200
Sufficient	90 %ile	≤500	≤185
Poor	Sufficient standard not met		

Environment Agency

Classification history, 2015 to 2024

	2015	2016	2017	2018	2019	2021	2022	2023	2024
Porlock Weir	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Minehead Terminus	Good	Good	Good	Good	Good	Good	Good	Sufficient	Sufficient
Dunster Beach	Good	Good	Good	Sufficient	Sufficient	Sufficient	Poor	Poor	Poor
Blue Anchor West	Good	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	Poor
Burnham Jetty North	Poor	Poor	Poor	Poor	Poor	Not designated			
Berrow	Good	Good	Good	Good	Excellent	Good	Excellent	Good	Good
Brean	Excellent	Excellent	Excellent	Excellent	Excellent	Good	Good	Good	Good
Weston Uphill Slipway	Sufficient	Sufficient	Poor	Sufficient	Poor	Sufficient	Sufficient	Poor	Poor
Weston Main	Good	Sufficient	Sufficient	Poor	Sufficient	Poor	Poor	Poor	Poor
Weston Sand Bay	Good	Good	Good	Good	Sufficient	Sufficient	Poor	Poor	Poor
Clevedon Beach	Good	Good	Good	Good	Good	Good	Good	Good	Good

Step changes:

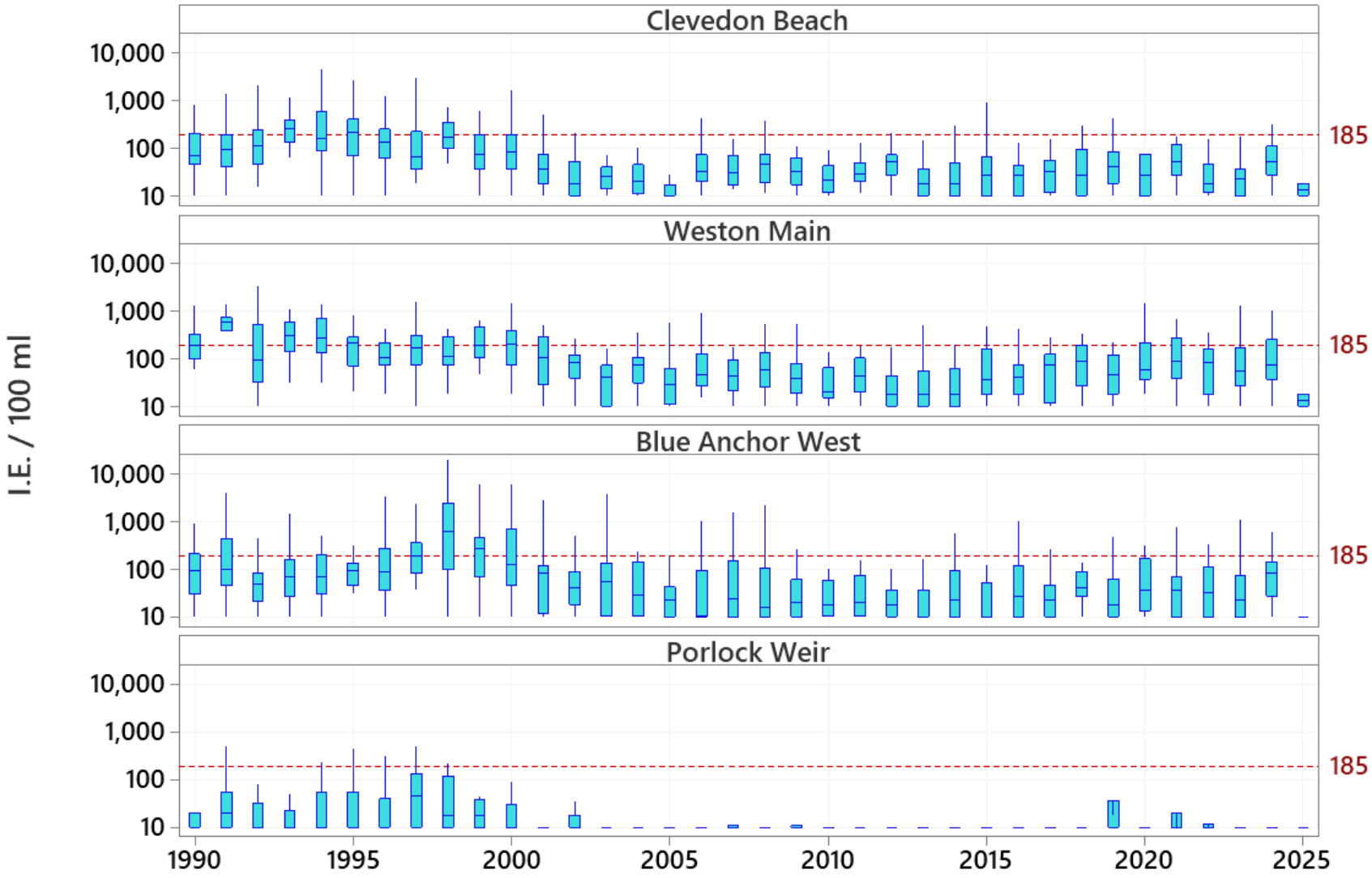
2013 Weston Uphill Slipway following improvements at Weston-super-Mare WRC

2019 Weston Main following work at Tropicana

No classification in 2020

Environment Agency

Intestinal enterococci concentrations,1990-2024



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Wessex Water WWTW effluent inputs

Treatment

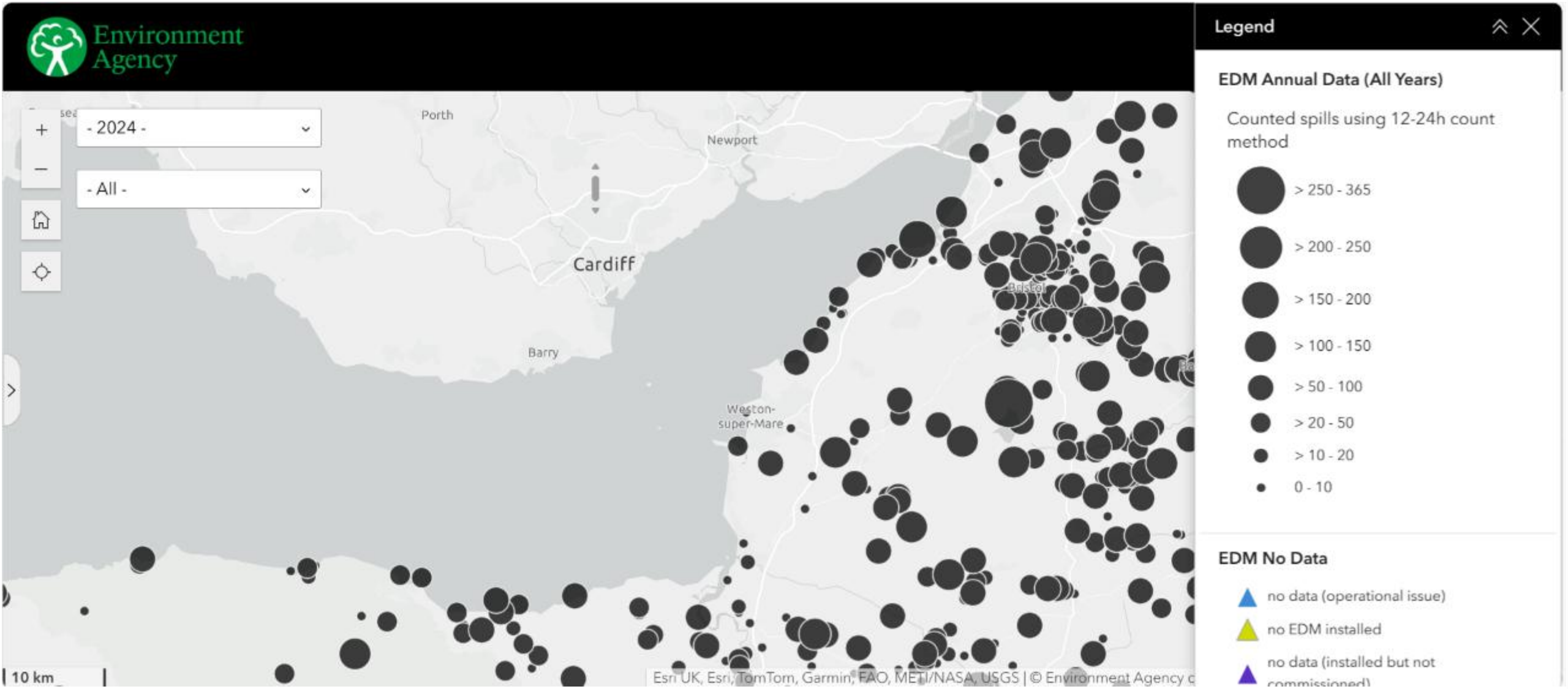
- Biological
- UV disinfection
- Membrane

DWF (m^3/day)

- <1,000
- 1,000 – 10,000
- 10,000 - 100,000
- >100,000

Environment Agency

Storm overflows



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Physical characteristics of the Severn Estuary

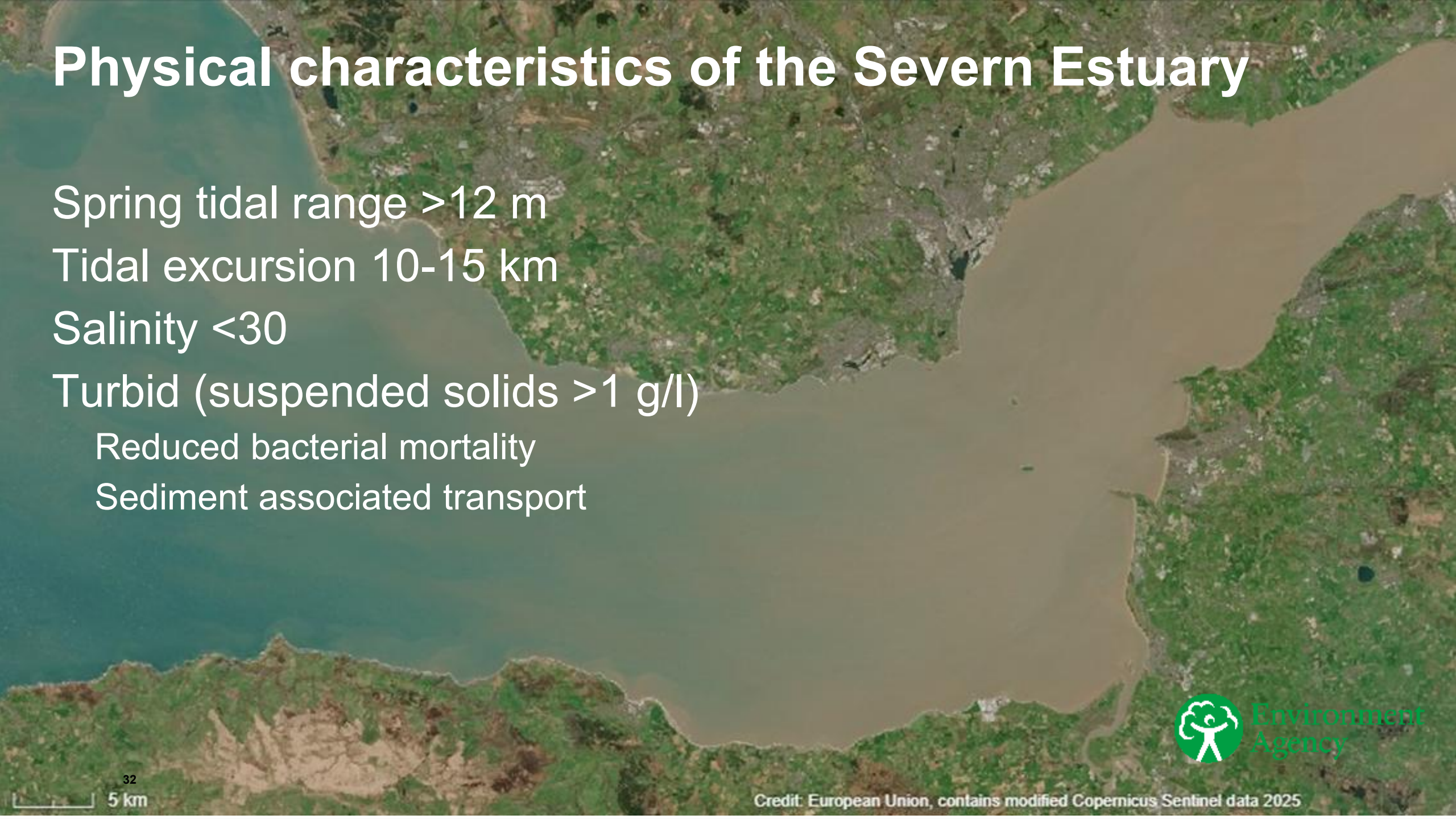
Spring tidal range >12 m

Tidal excursion 10-15 km

Salinity <30

Turbid (suspended solids >1 g/l)

- Reduced bacterial mortality
- Sediment associated transport



Credit: European Union, contains modified Copernicus Sentinel data 2025

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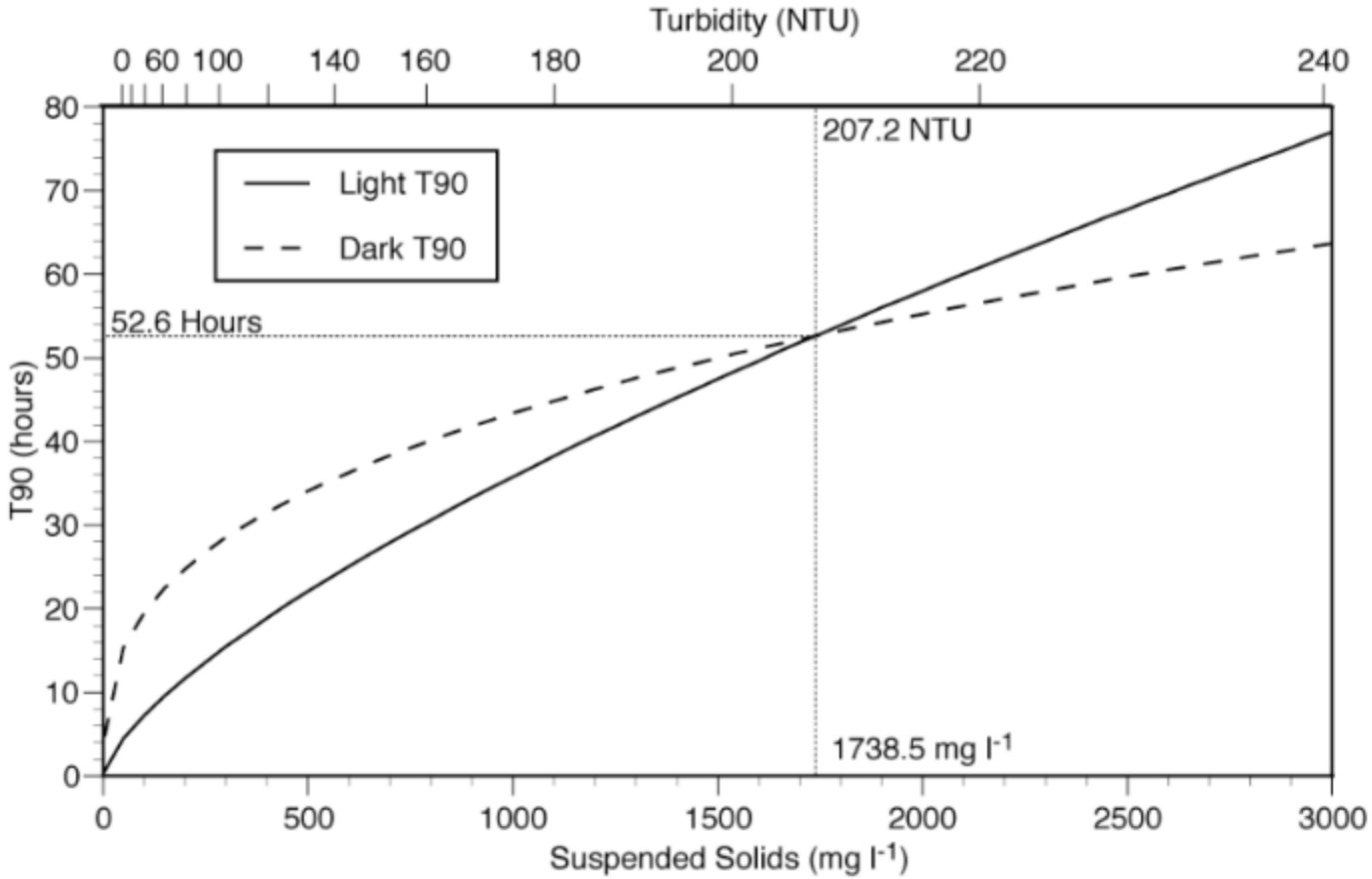
Relationships between T90 and suspended solids



Source: Stapleton, C.M. et al. (2007). Fate and Transport of Particles in Estuaries. Volume I

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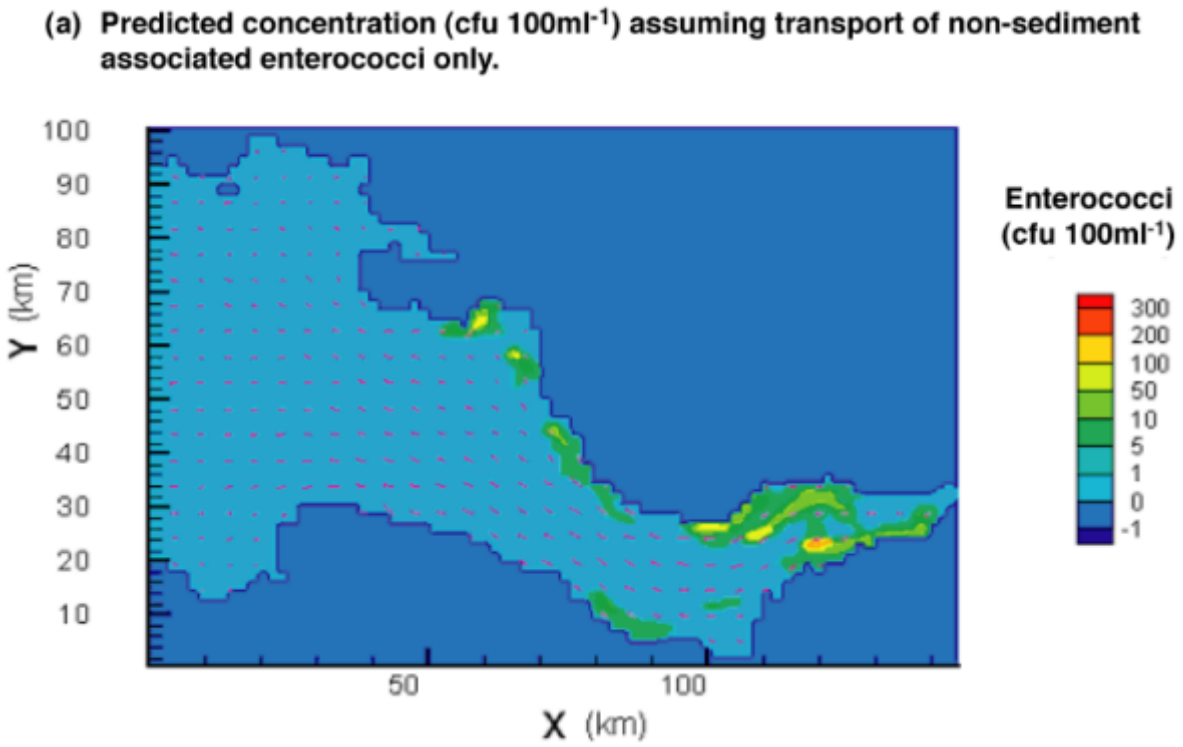
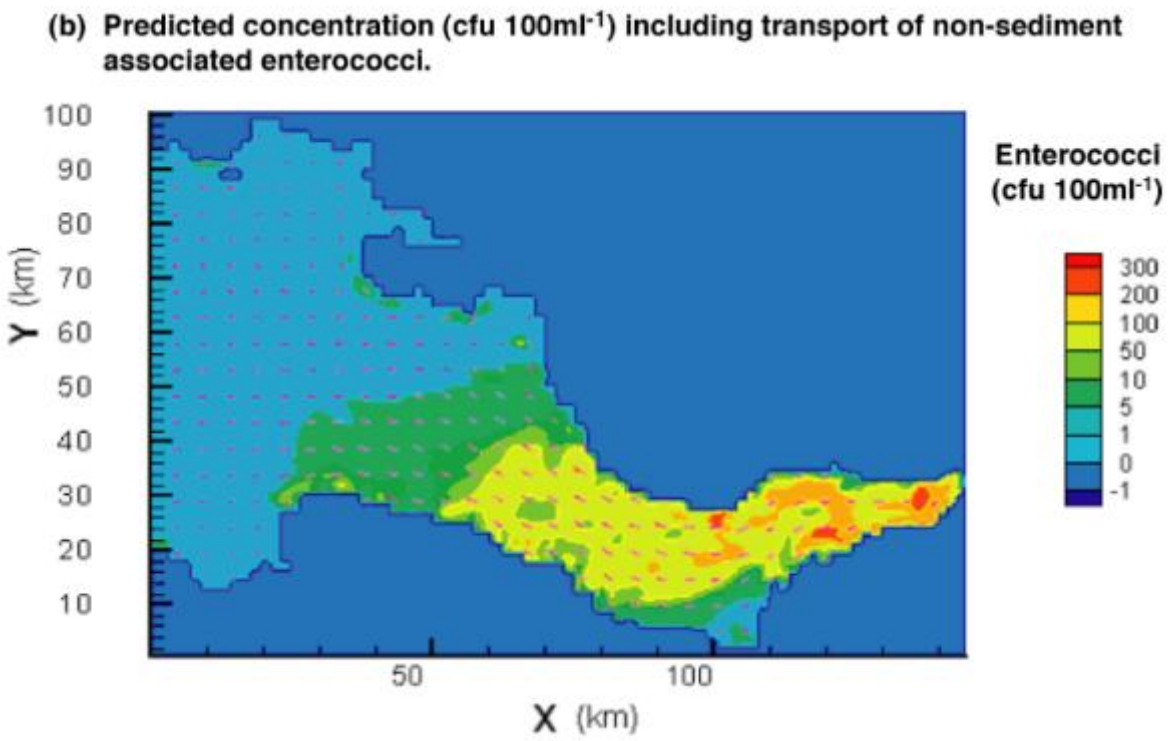
Sediment transport and enterococci concentrations





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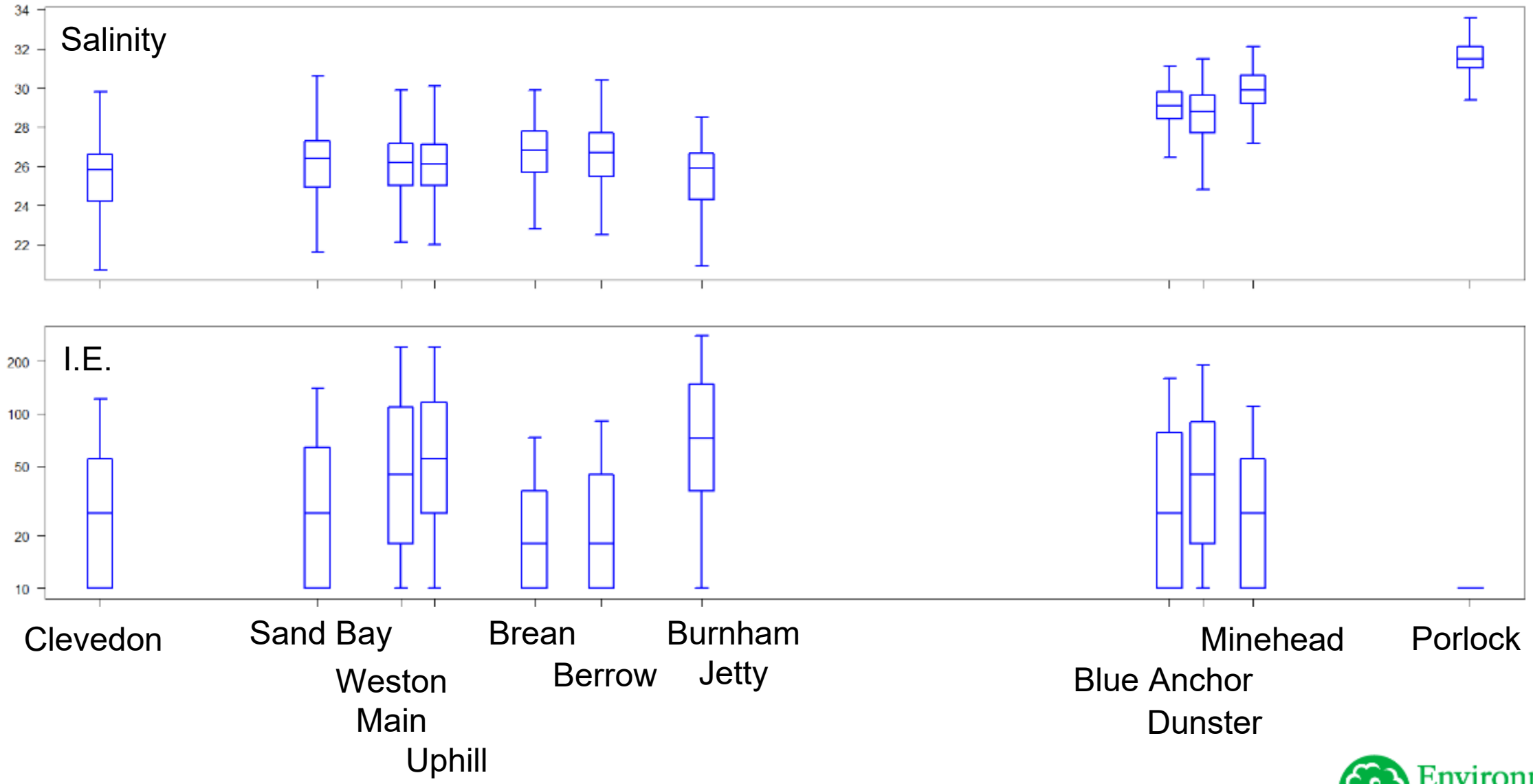
Salinity and I.E. variation along Severn Estuary coast



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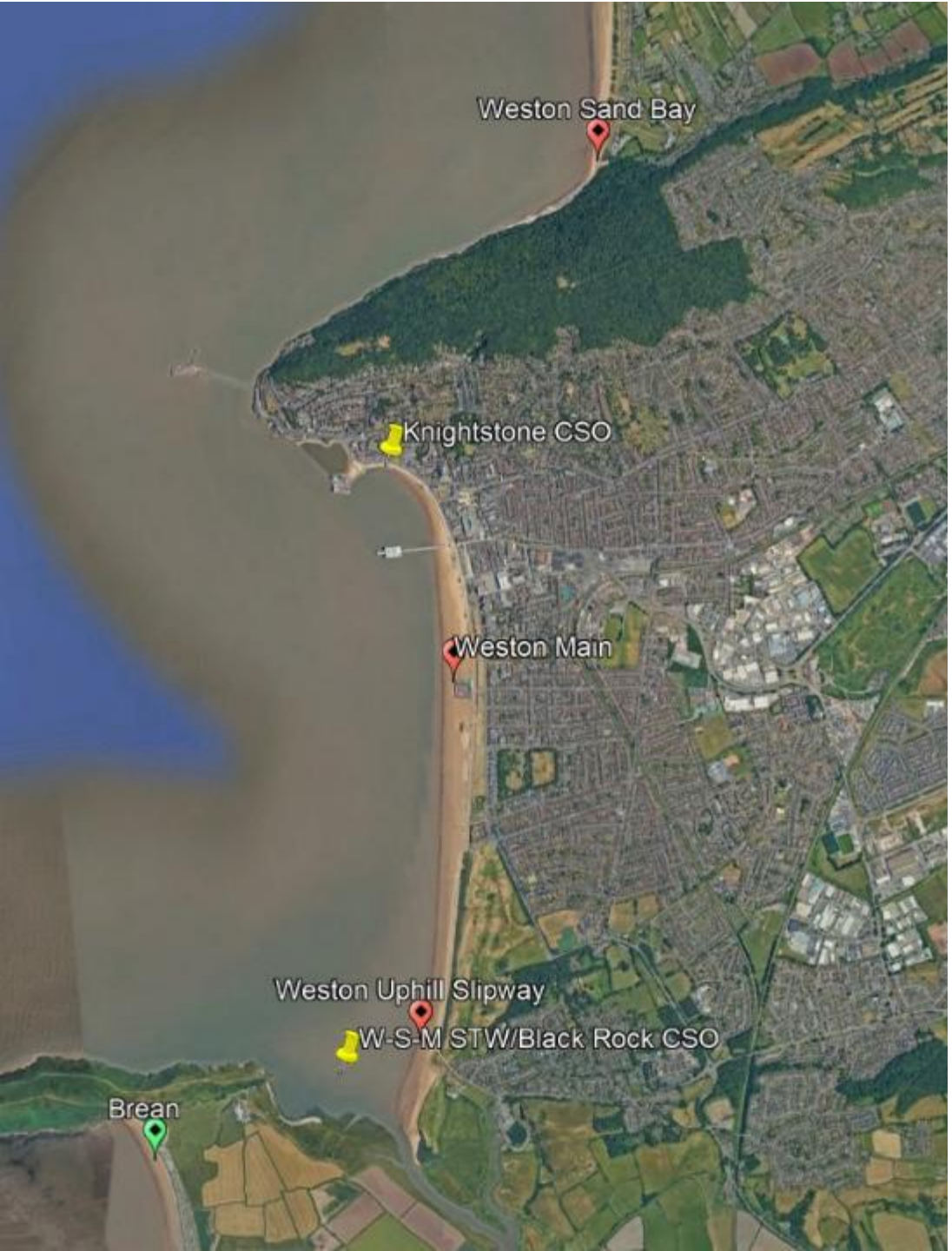


Weston-super-Mare bathing water profile

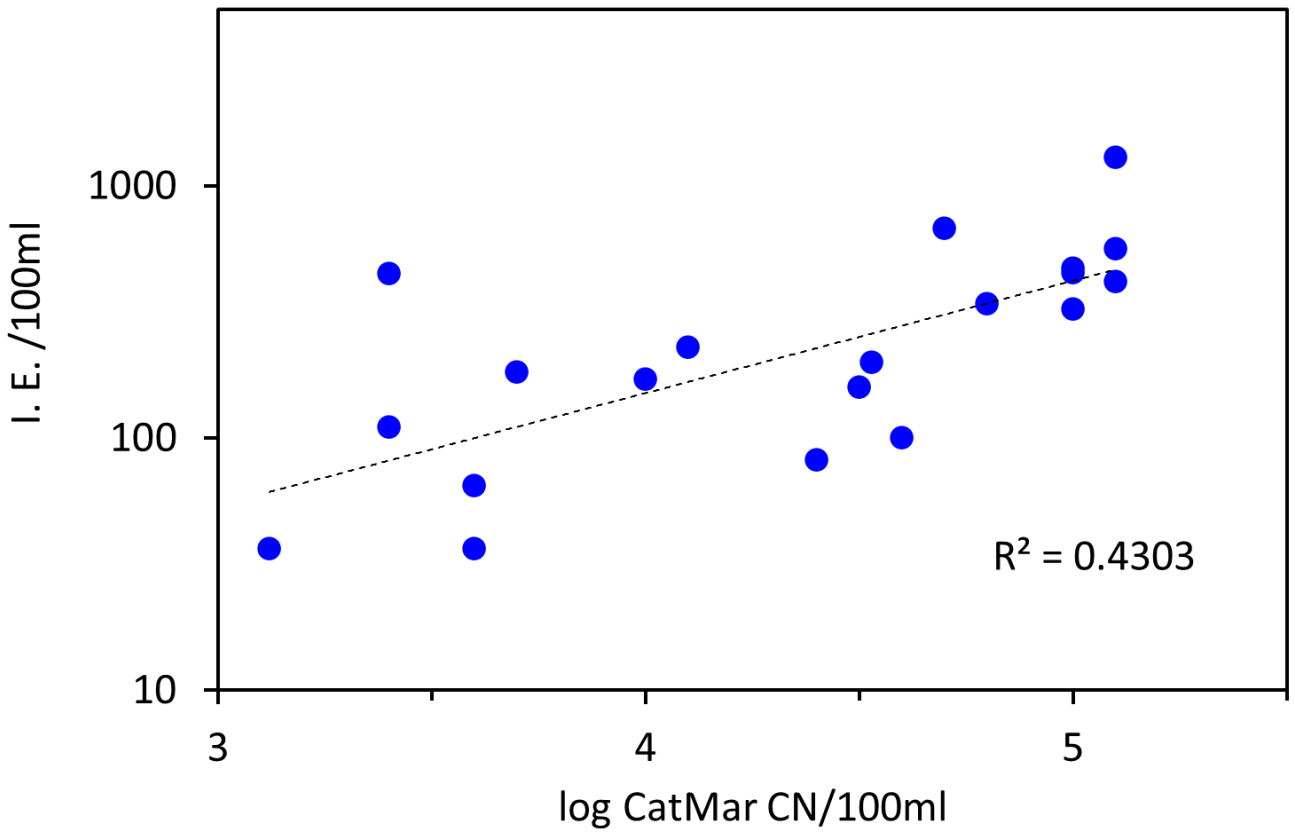
Pollution sources

- Weston super Mare STW
- Storm overflows
- Other sewage discharges
- River Axe
- Uphill Great Rhyne
- Misconnections
- Agriculture
- Birds
- Donkeys!

Environment Agency

Microbial source tracking

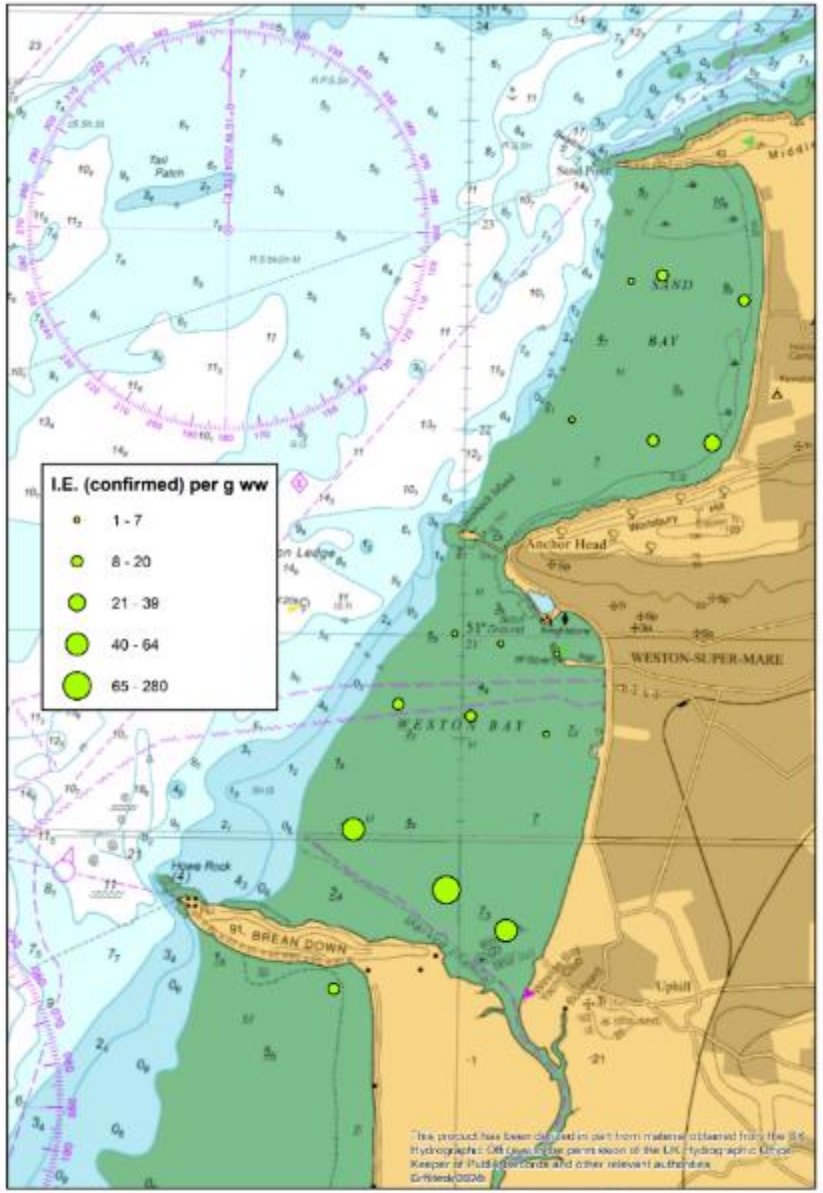
- Bacteroidetes
  - Human
  - Ruminant
  - Horse
- Catellicoccus
  - Seabird (gulls)
- Mitochondrial DNA
  - Dog
  - Pig

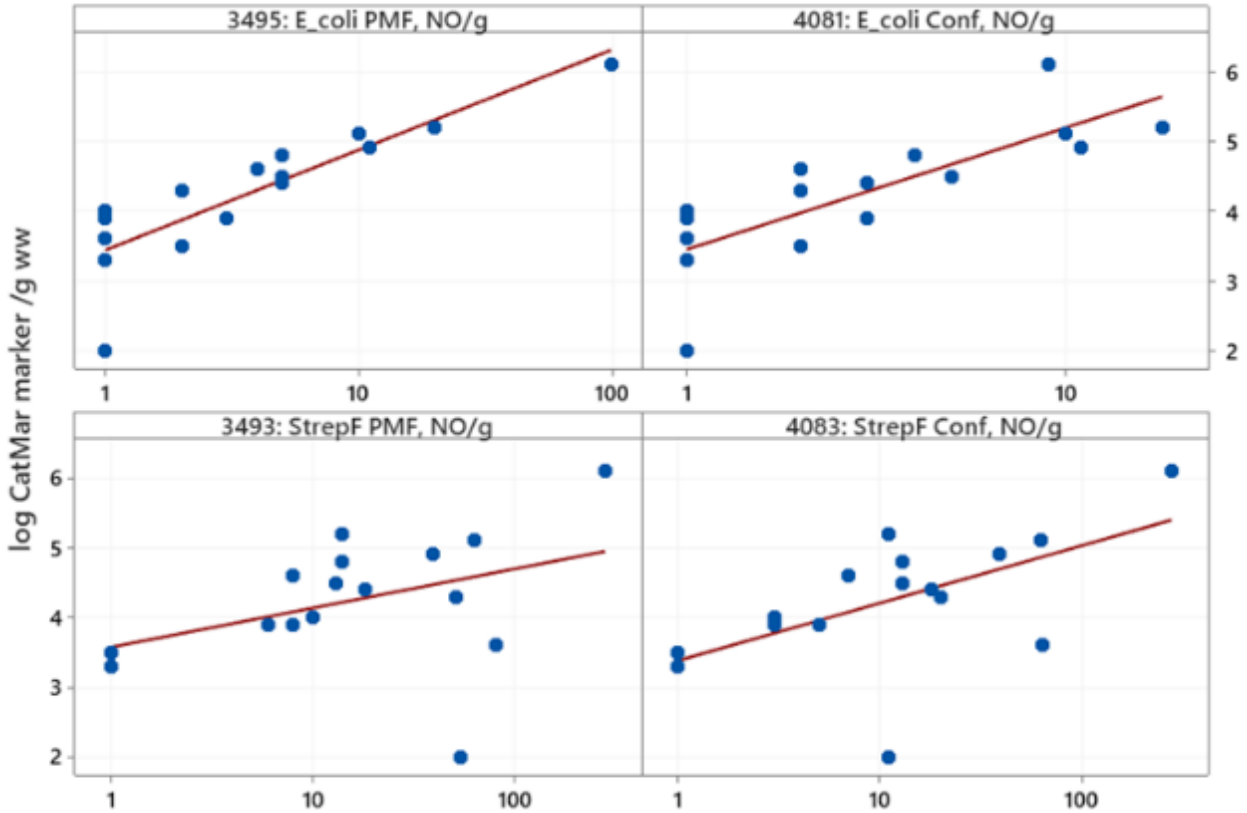


Relationship between seabird marker and intestinal enterococci concentrations in water at Weston Main bathing water

Environment Agency

Intertidal sediment bacteriological survey





Relationship between seabird marker and FIO concentration

Environment Agency

Bathing Water Reg Reforms

- Remove automatic designation after five years Poor
- Consideration of water quality and value for money before designation of new bathing waters
- Increase flexibility of bathing season date

Environment Agency

Questions?

Environment Agency

Facilitating Accelerated Nature Networks for Seagrass (FANNS)

Emma Fox, Senior Science Officer: South and West Wales Lead

Project Seagrass

03/07/2025

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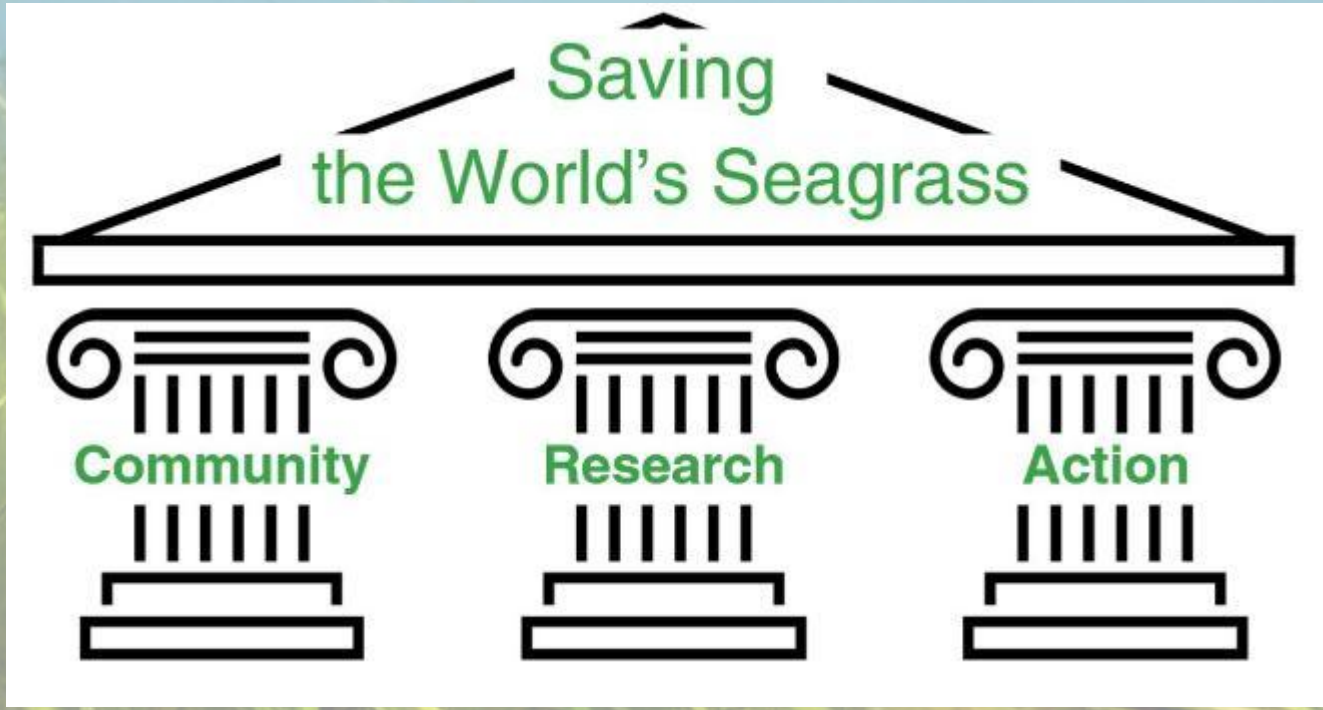
Who are Project Seagrass?

Project Seagrass is a global facing marine conservation organisation securing a future for seagrass through community, research and action.



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South and West Wales 2024 – 2026

Facilitating Accelerated Nature Networks for Seagrass (FANNS)

Output 1: Developing & providing a supply of seagrass plants

Output 2, 3 & 4: **Restoration across the three Special Areas of Conservation (SAC).**

Output 5: Community Engagement

Output 6: Management of seagrass meadows

Output 7: Providing opportunities for fishers

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Restoration across the three Special Areas of Conservation (SAC).

1. Milford Haven – Pembrokeshire SAC
2. Llanelli – Carmarthenshire Bay and Estuaries SAC
3. Cardiff – Severn Estuary SAC

Initial Questions…

Is the environment suitable?

What method is most suitable?

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Developing and providing a supply of seagrass plants

- 1500 transplants from the Seagrass Nursery into the field; four different methods

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Developing and providing a supply of seagrass plants

Transplant methods:

1) Bare-root
   a. Metal Pins
   b. Bamboo Mossing Pins
2) Sediment intact
   a. Hemp Bags
   b. Coir Pots
3) Growth Conditions
   a. Inside Polytunnel
   b. Outside Ponds

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Restoration across the three Special Areas of Conservation (SAC): Dale, Pembrokeshire SAC

1. Dale first seagrass project (2 ha) of seagrass
2. Supplementary planting, exploring the most suitable transplant method
3. 2024 – 2025 - 600 transplants:
   a. Subtidal (divers and freedivers), metal pins
   b. Intertidal hemp bags vs bamboo mossing pins

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Restoration across the three Special Areas of Conservation (SAC): Llanelli, Carmarthenshire Bay and Estuaries SAC

1. Focusing on dwarf eelgrass (*Zostera noltii*) restoration
2. 2024 – transplanted 75 cores of *Z.noltii* (trailing planting density)
3. Seen an increase of 200 % of the transplanted cores
4. May 2025 we transplanted another 72 cores.

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Restoration across the three Special Areas of Conservation (SAC): Cardiff (Splott Beach), Severn Estuary SAC

Why here?

- 3 existing patches of seagrass (25 year old records of these)
- Habitat Suitability Modelling suggests high suitability

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Restoration across the three Special Areas of Conservation (SAC): Cardiff (Splott Beach), Severn Estuary SAC

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Restoration across the three Special Areas of Conservation (SAC): Cardiff, Severn Estuary

1. May 2024: Transplanted 75 Zostera noltii cores and planted 60,000 Zostera marina seeds
2. Unfortunately, we lost a significant number of the cores, and we saw no germination success from the seeds.

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Restoration across the three Special Areas of Conservation (SAC): Cardiff, Severn Estuary

- Restoration opportunities are everywhere, but it is difficult, and often necessitates a rethink
- So, back to the drawing board!

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Restoration across the three Special Areas of Conservation (SAC): Cardiff, Severn Estuary

1. March 2025
2. Replanted 3,000 seeds (trailing earlier in the season)
3. Planted out 450 mature plants from the nursery into the field. Planting methods include:
    1. Hemp Bag
    2. Coir Pot
    3. Indoor vs Outdoor plants

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Pending monitoring results – TBC in July!

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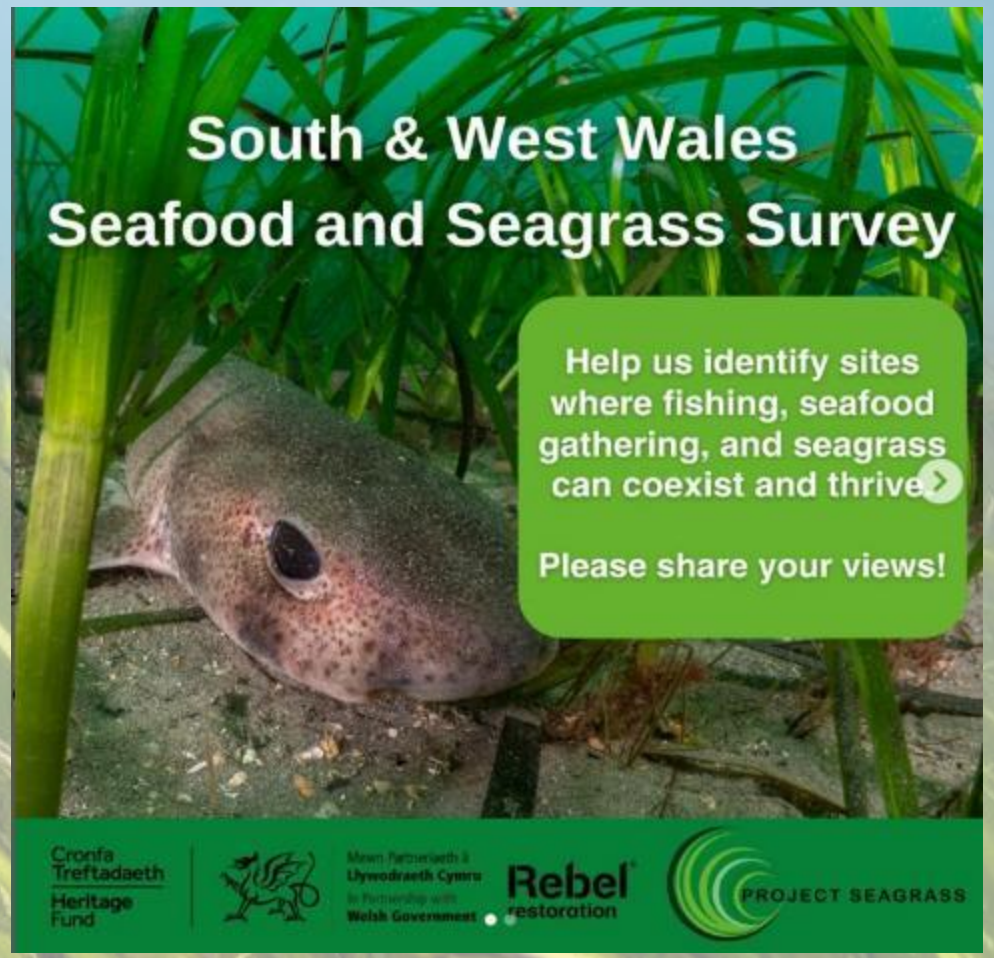
Future Site Selection in the Severn Estuary…

- Habitat Suitability Modelling,
- Mapping,
- Site Assessments,
- Local Ecological Knowledge – Community workshop
- Fishers Survey,
- Please do get in touch with any of your own thoughts and ideas regarding sites!



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Want to get involved? SeagrassSpotter!

SeagrassSpotter

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Thank you, any questions?

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Audience Q&A