

# Protecting Cornwall's 'super' sea grass

Ruth Williams, Head of Marine



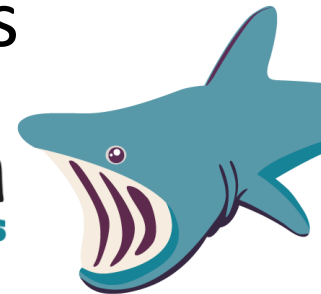
**Cornwall**  
Wildlife Trust

**Creating a Cornwall**  
where nature thrives

# Why 'Super' Seagrass?



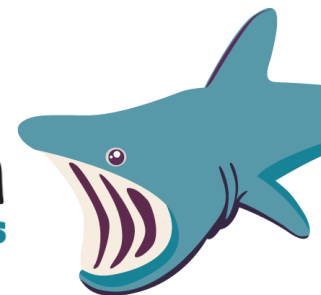
- Seagrass is the only underwater flowering plant
- Nationally rare species
- Incredibly important for biodiversity
- Commercial fish nursery habitat
- Provides coastal and flood protection
- It takes up CO<sub>2</sub> and produces O<sub>2</sub> through photosynthesis
- Climate clout...covers less than 1% of the seafloor, it is responsible for around 15% of the ocean's annual carbon burial.



# The 'not so fun facts' of our 'Super' Seagrass?

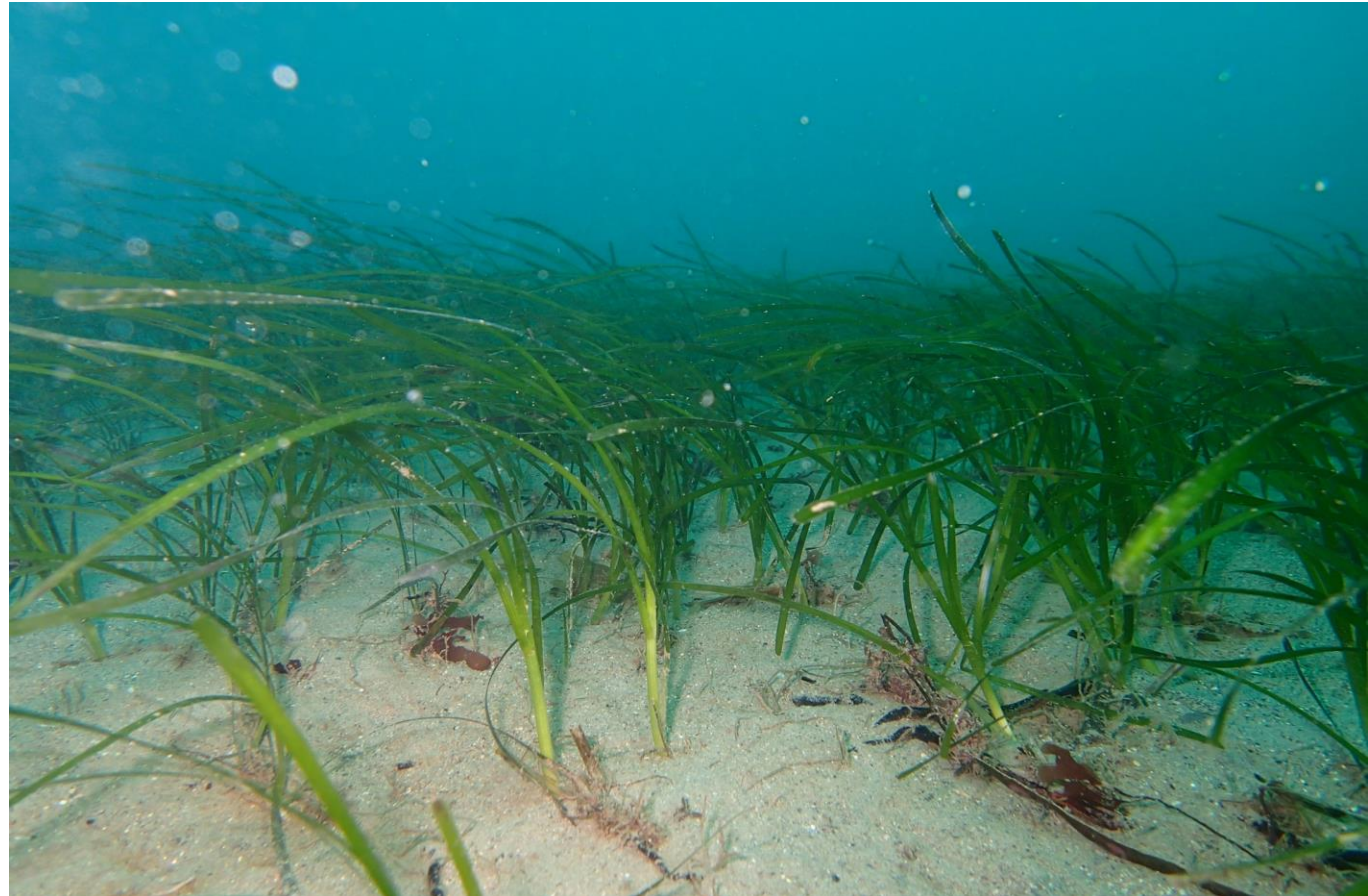


- Seagrass is in global decline, 7% of seagrass habitat is lost globally per year
- In the UK, we have lost up to 90% of our seagrass meadows in the last 100 years.
- Severely affected by a disease in the 1930s.



# Marine Nature Recovery - giving nature the space and time to enable it to recover and thrive.

- Active restoration – eg: re-seed beds (BUT environmental conditions need to be right)
- Passive restoration – remove pressures (eg: no anchor zones / no trawling)



# Seeding Change Together: Restoring Cornwall's Seagrass Meadows



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SEEDING CHANGE TOGETHER

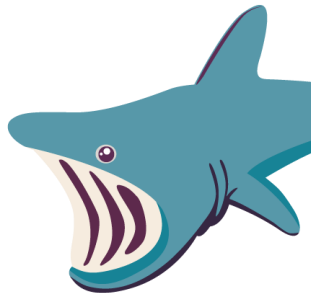


# Species in focus..

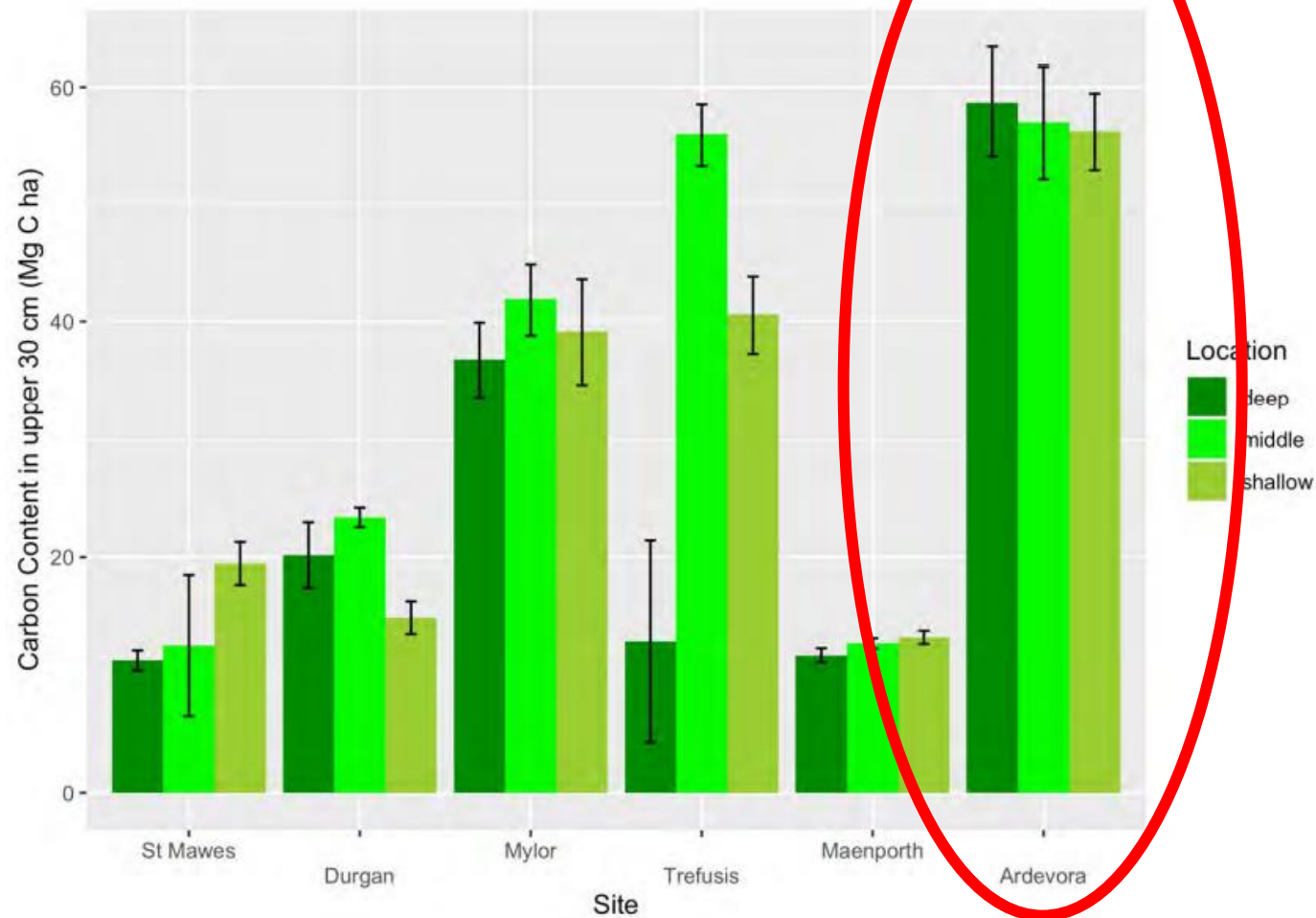
Common Eelgrass  
*Zostera marina*



Dwarf Eelgrass  
*Zostera noltii*







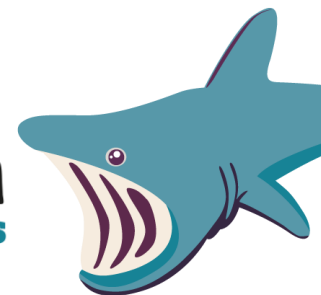
**Figure 6.** Estimated total carbon contained in the upper 30 cm of sediment in the six seagrass beds studied in the Fal and Helford SAC, based on sediment cores collected in June 2021. Bars represent the mean ( $n = 3$ ) carbon content for each location within the bed (deep, middle, or shallow) within the site  $\pm$  sd. *\*The deep core at Trefusis was only 10 cm deep and so is an inaccurate estimate of stocks relative to the others at that site.*



Coastal  
Wildlife

Source: Cornwall Council and University of Exeter Carbon Accounts report

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# Overview of Project and Aims



## Stage One

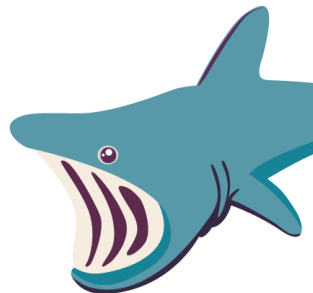
- Feasibility
- Initial Trials

## Stage Two

- Evaluate
- Refine

## Stage Three

- Expand
- Collaborate



# Project Summary and Highlights so far:

**JULY 2022:** The project launched. Licenses and development of trial methodologies.

**SEPTEMBER 2022:** seed collection began for the first year of trials.

**OCTOBER 2022:** conducted trials of in-situ seed storage containers

**NOVEMBER 2022:** seed planting and transplant trials were conducted.

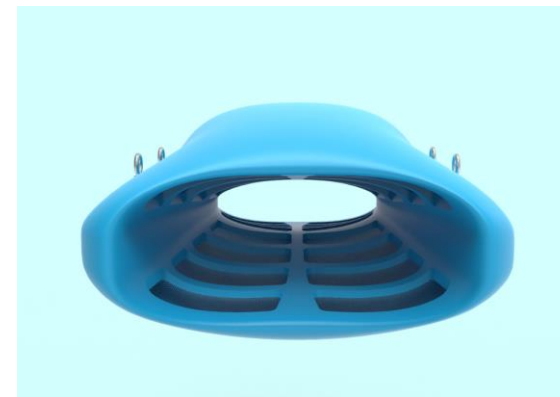
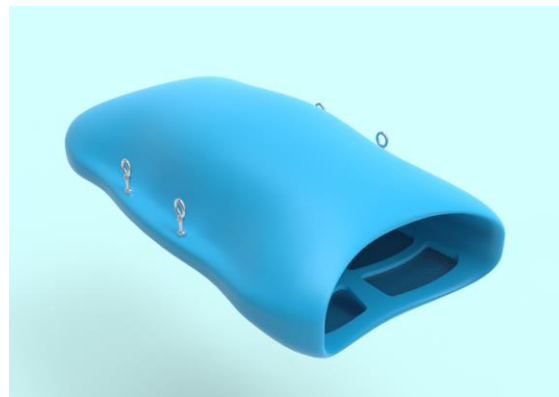
**JUNE 2023:** seedlings began to emerge and grow from the first year of trials!  
Additional seagrass bed discovered within the reserve.

**JULY 2023:** reproductive flowers began to form on the new seagrass.

**SEPTEMBER 2023:** Year two trials have begun.



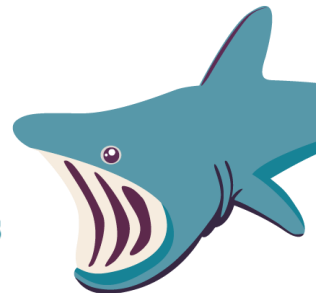
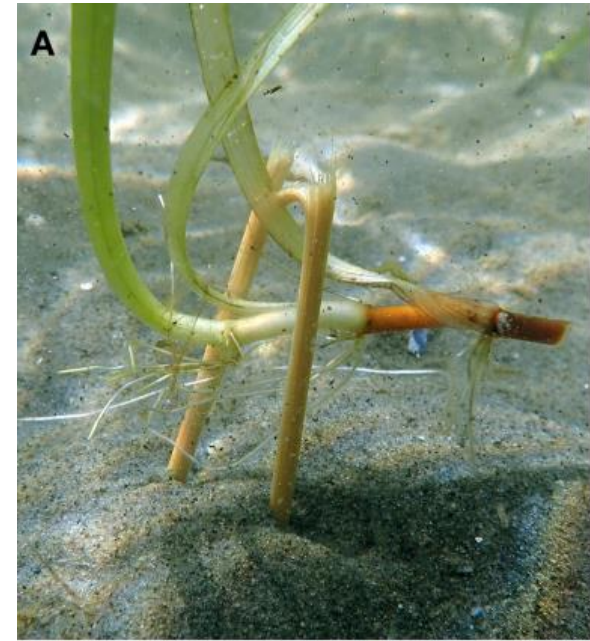
# Trialing in-situ seed storage



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# Transplantation and Seed Planting



# Monitoring

- 🌿 **What monitoring have we put in place?**
  - 🌿 In-situ monitoring on seagrass health and abundance
  - 🌿 Drone surveys – extent, density
  - 🌿 Impact assessments
  - 🌿 Water quality monitoring





Planting the seeds of seagrass restoration | Seasalt Cornwall x Cornwall Wildlife Trust



Share

<https://youtu.be/UPtCBshj9cQ>

SEASALT  
CORNWALL



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SEEDING CHANGE TOGETHER



MORE VIDEOS



0:02 / 1:46



YouTube



# St Austell Bay Blue Carbon Mapping Project

Find out more about local key blue carbon habitats - their true extent and condition - to inform future conservation activity.

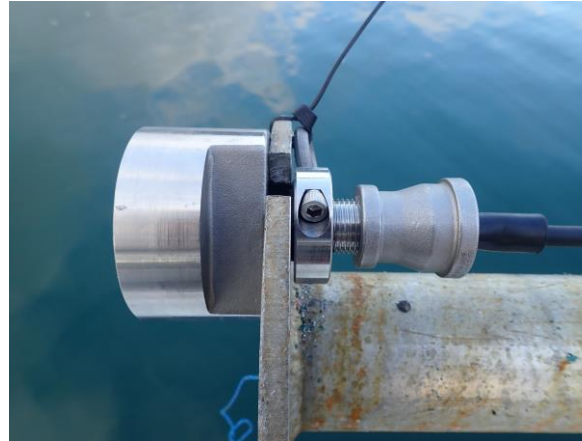
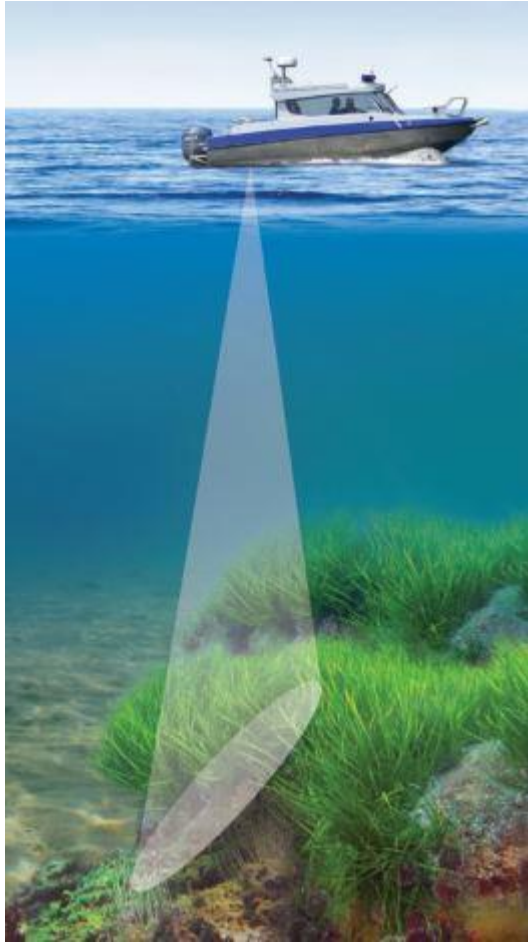
- Mapping existing datasets
- Bioacoustics surveys with IFCA
- Dive surveys for quality and biodiversity



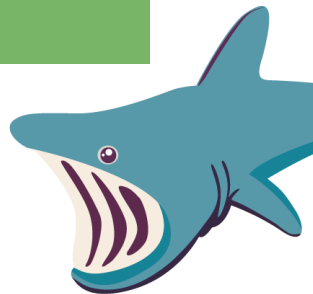




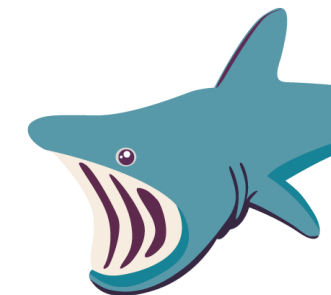
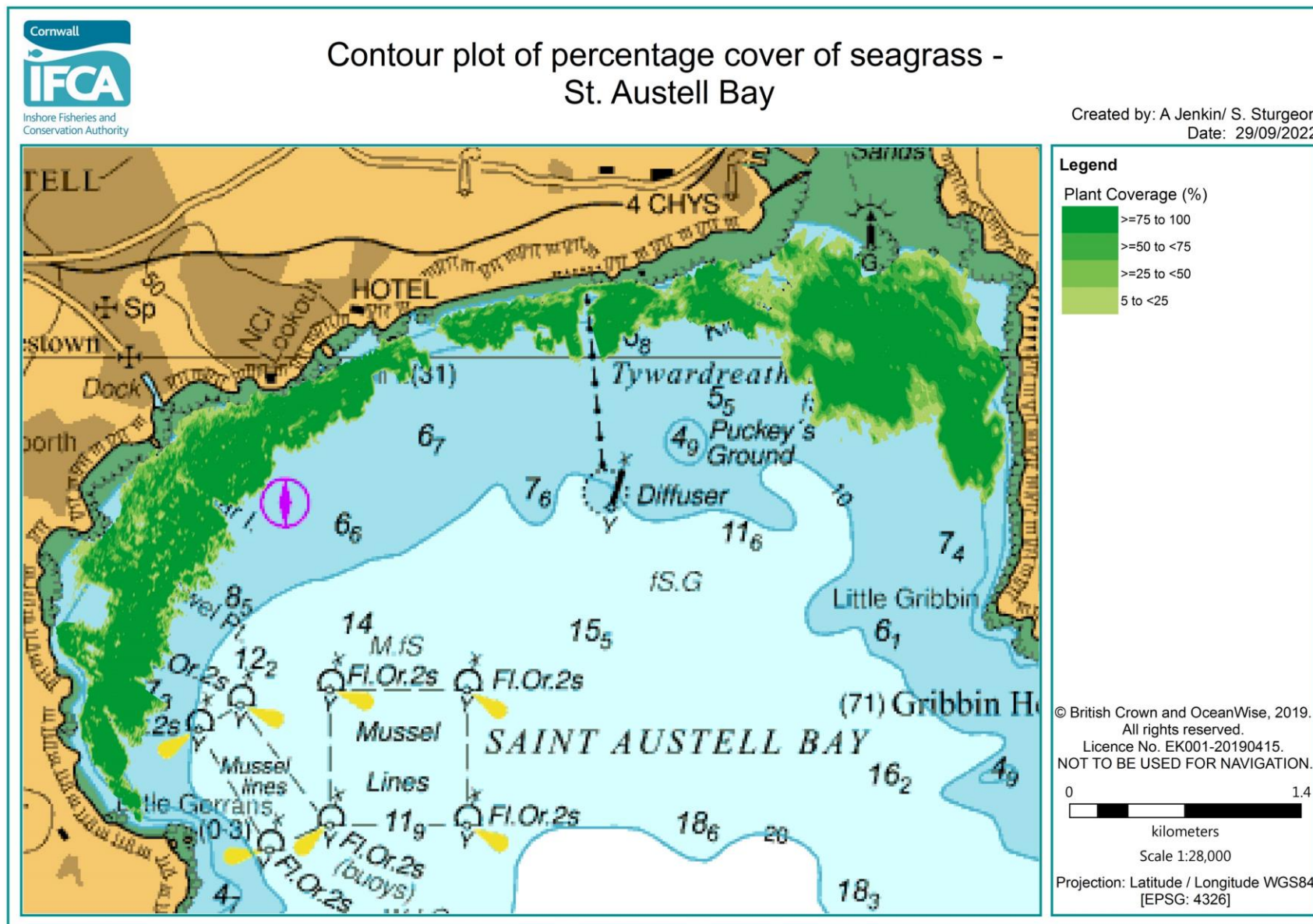
# Mapping sea grass using a non-impacting, acoustic technique



- Complete acoustic surveys in areas of known seagrass
- Verify signal where needed.
- Biosonics Visual Aquatic software to analyse data
- MapInfo Professional Advanced software to create plots



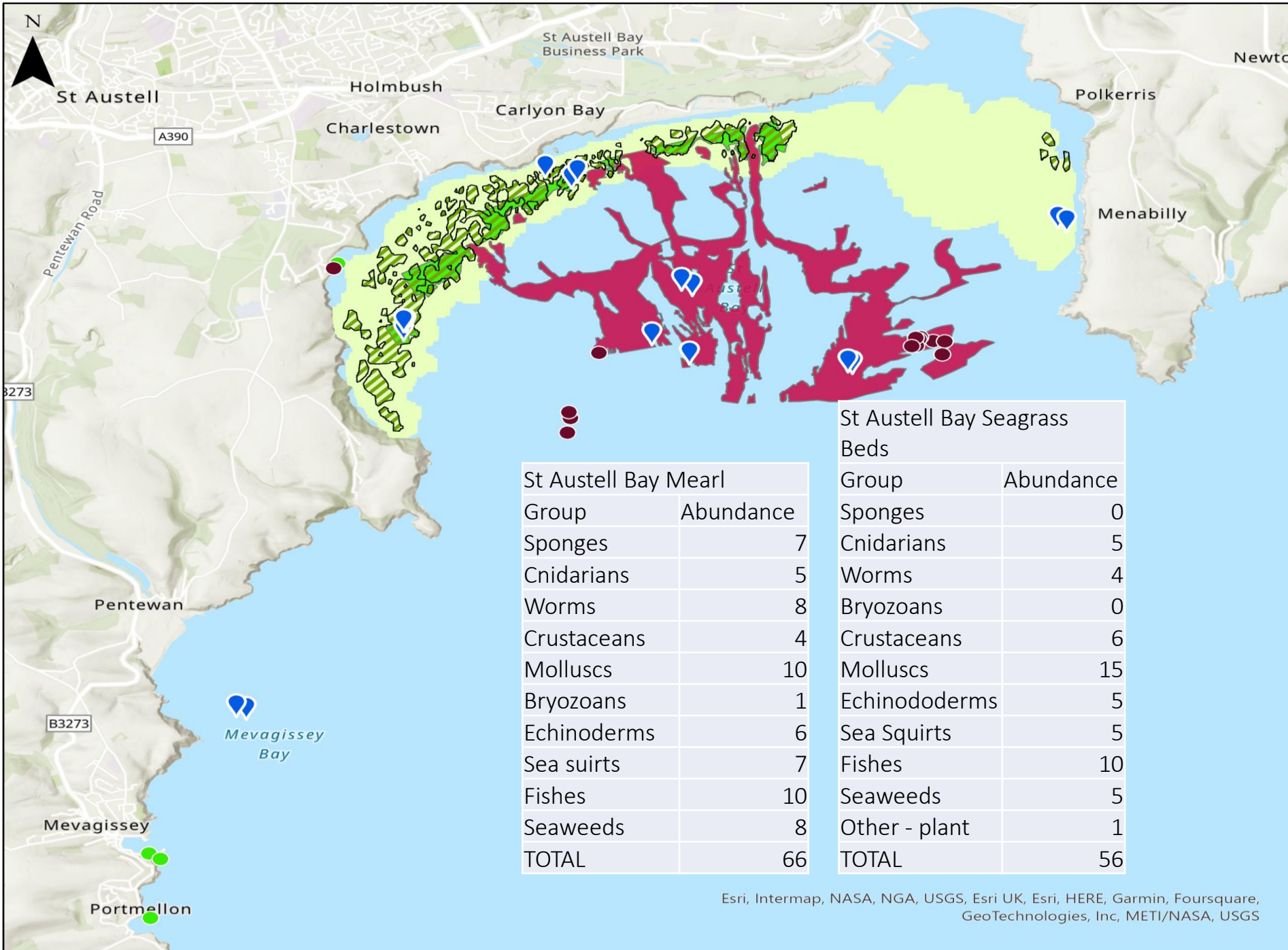
# Mapping sea grass using a non-impacting, acoustic technique



# Dive Surveys

- Look for additional presence of blue carbon habitats.
- Ground truth existing data.
- Assess condition, density, health and biodiversity.
- 4 boats days





-  G7 Seasearch Dives
- Seasearch Species Records + Biotopes**
-  *Zostera* subg. *Zostera marina*
-  Lithothamnion
-  Maerl indet

**2016 IFCA Habitat Classification from Side-Scan Sonar**

-  Maerl
-  Seagrass
-  2022 IFCA Acoustic Seagrass Survey (Gerrans Bay)
-  Environment Agency Seagrass Survey

St Austell Bay Mearl		St Austell Bay Seagrass Beds	
Group	Abundance	Group	Abundance
Sponges	7	Sponges	0
Cnidarians	5	Cnidarians	5
Worms	8	Worms	4
Crustaceans	4	Bryozoans	0
Molluscs	10	Crustaceans	6
Bryozoans	1	Molluscs	15
Echinoderms	6	Echinoderms	5
Sea sirts	7	Sea Squirts	5
Fishes	10	Fishes	10
Seaweeds	8	Seaweeds	5
TOTAL	66	Other - plant	1
		TOTAL	56

Esri, Intermap, NASA, NGA, USGS, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS



An underwater photograph showing a dense bed of seagrass in St Austell Bay, Cornwall. The water is clear and greenish, and the seagrass blades are long and thin, growing from a sandy seabed. A dark rectangular box is overlaid on the image, containing white text.

St Austell Bay has the biggest  
known seagrass bed in Cornwall -  
359 hectares

Report available from our website

# •Future plans.....

- Further mapping, gap filling
- Impact assessments
- management suggestions – statutory and community



Snakelocks anemone  
*Anemonia viridis*



Stalked Jellyfish  
*Calvadosia campanulata*





Sea hare  
*Aplysia punctata*



John Yarrow

Nudibranch  
*Polycera quadrilineata*



Cuttlefish  
*Sepia officinalis*





Brown crab  
*Cancer pagurus*

Bass

*Dicentratus labrax*



An underwater photograph of a plaice, a flatfish species, resting on a sandy seabed. The fish is positioned in the center-right of the frame, facing left. Its body is flat and wide, with a mottled pattern of orange and blue spots on its side. The background is filled with green seagrass and brown seaweed, creating a natural habitat. The water is slightly turbid, giving the scene a greenish tint. The text 'Plaice' and '*Pleuronectes platessa*' is overlaid in the bottom left corner.

Plaice  
*Pleuronectes platessa*



Spiny seahorse  
*Hippocampus guttulatus*

**THANK YOU!**

