

## Crustaceans, Habitat And Sediment Movement

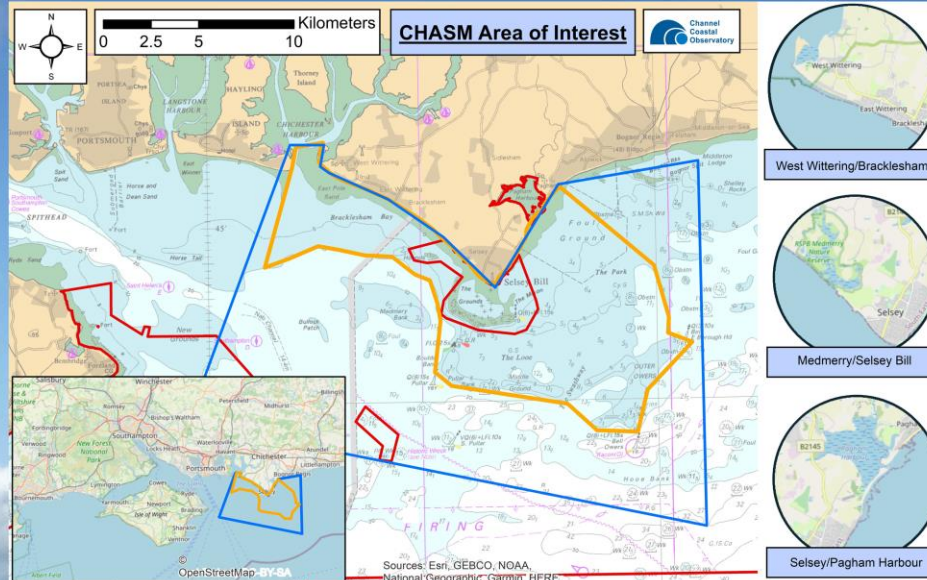
### Fishing has been a part of Selsey Bill, West Sussex and the surrounding areas since the Bronze Age.

Local fishermen tell of changes to the fishing grounds in recent years. Catches are smaller, and large influxes of sediment have been seen.

### Project Aims

- To determine the potential impacts on the fishing grounds
- Consider mitigation work to facilitate future sustainability
- Develop support and understanding from local coastal communities, visitors and managers through partnership and education
- Develop close links to other related projects in the area

First steps were to understand the context of change in the local area., based on existing data and observations from coastal users.



The CHASM area of Interest (in blue) showing the Fishing Grounds (yellow) and Marine Protected Areas (Red)



### Key Observations and Next Steps

The area of interest is dynamic, and has a history of management intervention dating back to at least the 1950s. Declines in species populations are long term, but appear to be accelerating.

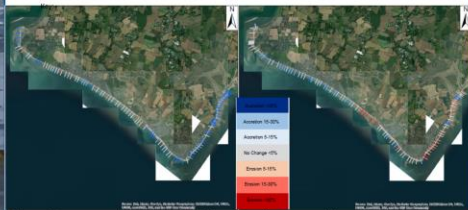
Direction of change in cross-sectional area of the beaches may coincide with the key 2013/14 period, subject to extreme storms and the breaching of the Medmerry Managed Realignment Scheme, but shows a typical seasonal pattern.

Wave climates shows non-significant increases in wave height, period and bi-modality. Sea level is increasing, and sea surface temperature appears to be increasing.

Relating physical changes to changes in fisheries is complex, and more work is needed, in particular to understand:

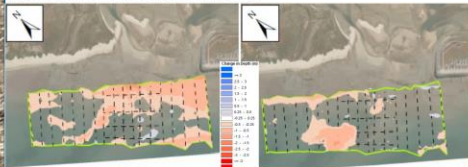
- Wider sediment movement and changes
- Water quality
- Inputs from wider land and marine sources
- Crustacean health, and
- Changes to fishing efforts

### Topographic and Bathymetric Change

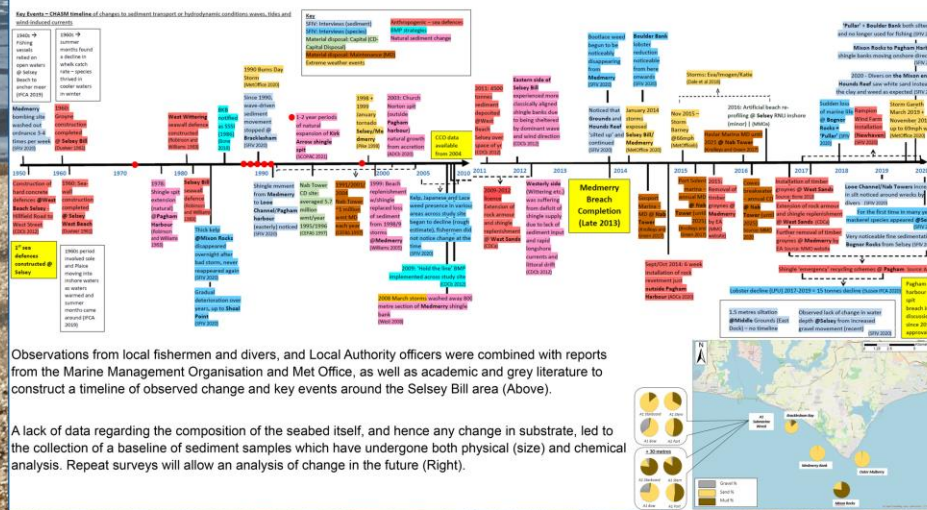


Change in cross-sectional area of profile survey lines around the coast. Left: Change measured between 2004 and 2013; Right: Change measured between 2014 and 2019. Not the different duration of each change analysis. Blue indicates accretion, and red indicates erosion.

Bathymetry collection was localised to selected areas. Illustrated here is the change in depth measured across the Medmerry Managed Realignment breach area, between Left: 2004 and 2014; and Right: 2014 and 2018.



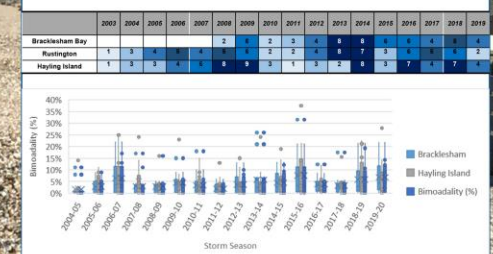
### Timeline of Observations and Sediment Baseline



Observations from local fishermen and divers, and Local Authority offices were combined with reports from the Marine Management Organisation and Met Office, as well as academic and grey literature to construct a timeline of observed change and key events around the Selsey Bill area (Above).

A lack of data regarding the composition of the seabed itself, and hence any change in substrate, led to the collection of a baseline of sediment samples which have undergone both physical (size) and chemical analysis. Repeat surveys will allow an analysis of change in the future (Right).

### Wave Climate and Water Temperature



Incidences of storms (top) and bimodality (middle), and changes to sea surface temperature (below) as observed from wave buoys in the local area.

