

Potential Uses for UKCP18 Marine Projections

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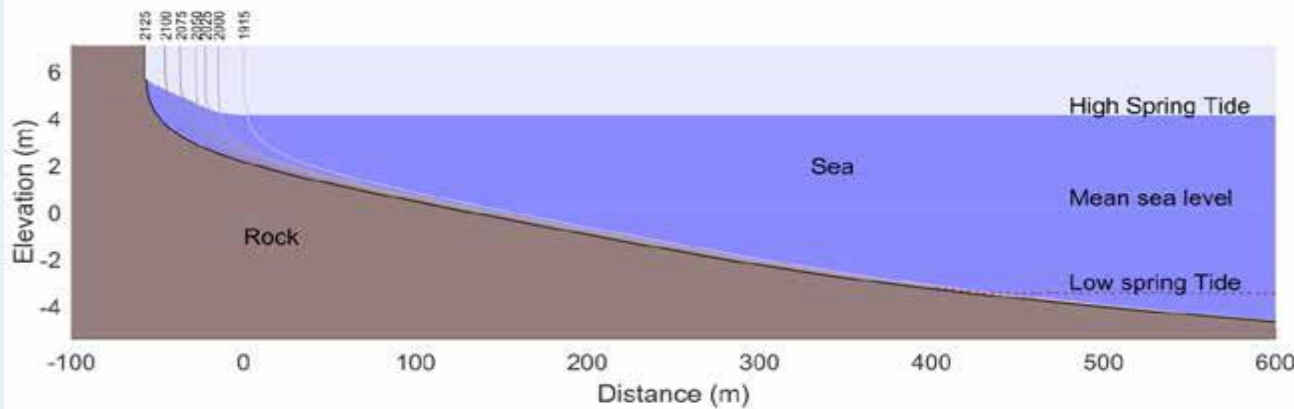
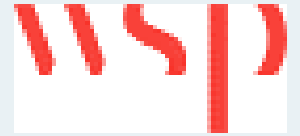
Cefas

UKCP18 Marine Projections

- UK and global sea level rise under RCP2.6, 4.5, 8.5 to 2100
- Storm surge projections under RCP8.5 to 2100
- Potential changes in tide and surge characteristics
- Global and regional wave climate
- Exploratory projections of global sea level rise to 2300



UKCP18 Marine Demonstration Project



- Shoreline management plans are used to manage coastal change at a regional level over different timescales
- Used for planning decisions
- Projections of sea level rise and wave events are important tools in making sure the plans were accurate

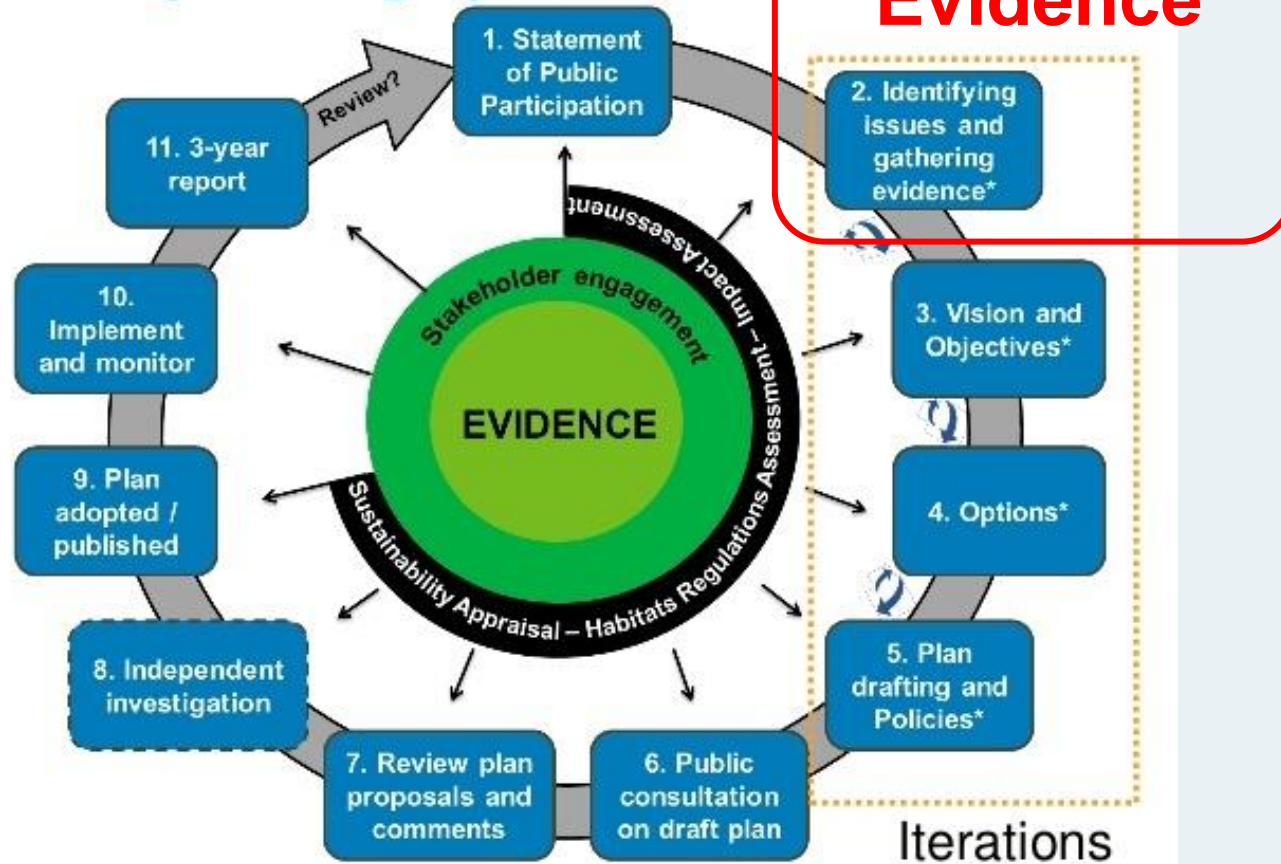
Climate Change Report Cards



- Marine Climate Change Impacts Partnership
- Full report cards:
 - Around 30 topics:
 1. Physical and chemical
 2. Biodiversity
 3. Economy and society
- Special topic issues
- Feed into the National Adaptation Plan and Climate Change Risk Assessment

Marine Planning

Marine planning cycle



- Evidence is a key part of the marine planning process
- Location of resources
- Projections:
 - Location of developments/activities
 - Coastal defence or coastal change
 - Standards for sea level rise or flood risk management
- Impact on social and economic policies

Beneficial Use of Dredged Material



Lodder's Cut Island, marsh habitat creation

- European Waste Framework Directive promotes “re-use” as the optimal management strategy for dredged material
- Habitat creation and helping to achieve biodiversity targets
- Sites must be assessed and identified

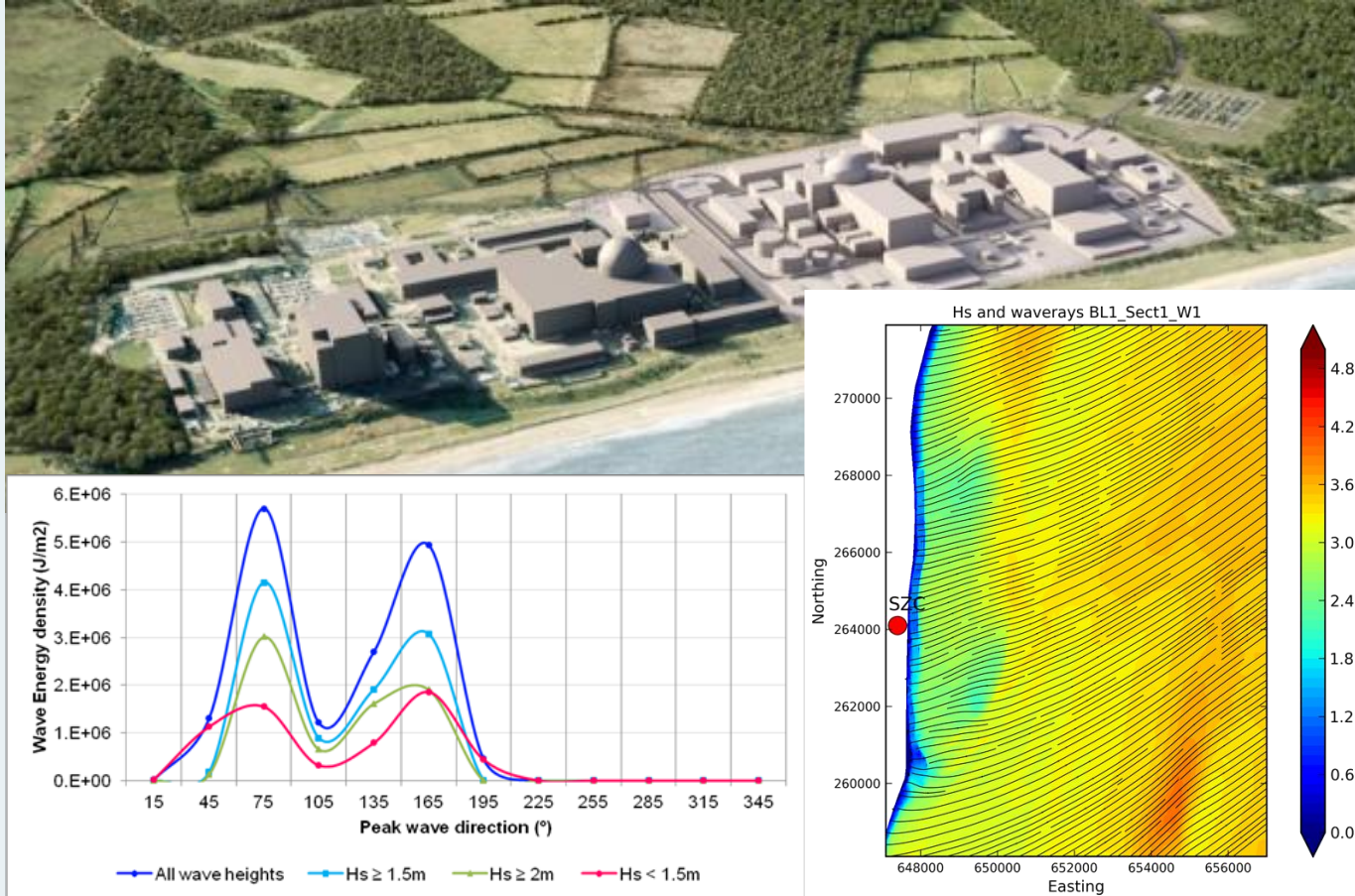
Beneficial Use of Dredged Material



Allfleet's Marsh Managed Realignment site to create saltmarsh habitat.



Flood Risk Assessments



- Nationally important infrastructure projects (NSIPs), e.g. new nuclear builds.
- Assessment of wave direction and climate and changes to storminess
- Potential future erosion

Coastal Vulnerability Modelling

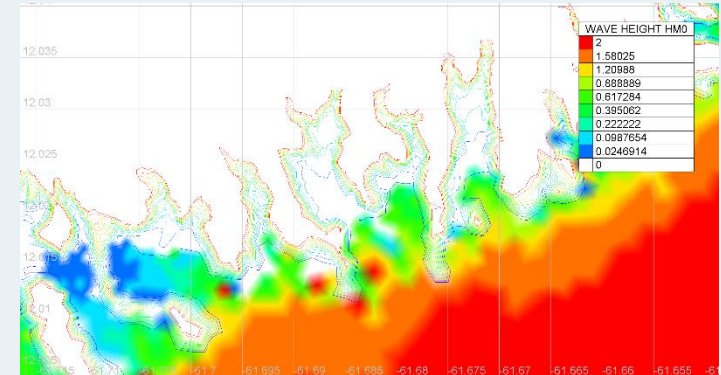


Damage to coastal areas in Grenada from Hurricanes Ivan and Lenny



Coastal Vulnerability Modelling

- Used coupled TELEMAC-TOMAWAC model.
- High-resolution (30 m) wave modelling (offshore to inshore).
- 3 events modelled:
 - Ivan, Lenny, 100 year return period
 - wave heights: observed & reported
 - wave direction: from NOC global model
- 4 sea level rise scenarios based on IPCC predicted range 2046 – 2065 and 2081 – 2100 (IPCC AR5, 2013).



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