

O44.1**Managed realignment scheme effectiveness of saltmarsh vegetation to attenuate wave energy using remote sensing**

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Abstract

It is evident that climate change is expected to impact humans and the environment, in particular, in coastal regions around the world. Coastal flooding is a common concern in coastal management and planning, for example, in the UK. It is recognised that Natural Flood Management (NFM) is a relatively novel and suitable alternative to deal with coastal flooding which uses processes found in nature, for example, using saltmarshes. This type of coastal wetland is known to provide wave energy dissipation, mainly, by their vegetation. In the UK, managed realignment is the most common technique that uses saltmarshes. The aim of this research is to explore how effective are managed realignment schemes in attenuating waves of coastal flooding based on their vegetation in terms of Leaf Area Index (LAI) and monitor this function over time using remote sensing to enhance coastal management strategies. The objectives are (1) To determine the extent to which Sentinel-2 imagery can be used to retrieve saltmarsh LAI (green and brown LAI) as an indicator of wave attenuation, (2) To determine how much saltmarsh LAI significantly vary from flowering to senescence seasons whether being a stable parameter of wave attenuation and (3) To find out how similar are man-made managed realignments versus natural saltmarshes in terms of LAI and determine the implications of this for future schemes developed for flood control by wave attenuation. Remote sensing techniques are becoming more useful and cost-effective innovations to monitor wetland environments. By doing this assessment of the wetland function of flood control, more scientific evidence will be available to increase awareness and enhance future managed realignments in the UK to deal with coastal flooding in the current climate change context.

Keywords

Flooding, Remote Sensing, Saltmarsh, Wave Attenuation