

**Developing an estuarine planning support system: a case study for the Humber Estuary, Eastern England**

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Estuaries are important because of their multiple uses and users, making management challenging to strike a balance between the needs of users, their ecological and economic value and the context of multiple legislative drivers. To facilitate integrated, sustainable and successful management we have developed an Estuarine Planning Support System (EPSS) framework using the Humber Estuary, Eastern England, as a case study, integrating the current legislation tools and concepts. This integrated EPSS framework has been developed as a GIS based interactive tool, which improves previous approaches for assessing cumulative impacts as it takes into account legislative drivers, management tools and details of plans/projects specific to the estuary. This accessible tool enables users to assess and address both the current state and the way in which a new development could impact an estuary. Although developed for the Humber Estuary, the EPSS is sufficiently generic to be modified to incorporate other site-specific requirements and legislation. Increasing and changing pressures to estuaries and coastal areas require adaptable and accessible management plans for management. The EPSS allows this by giving a structured process but with sufficient flexibility to allow for regional priorities and project specific information as well as being applicable to other European and international estuaries, and into coastal and open seas for management and planning. The EPSS framework allows for and incorporates the vertical governance structure, horizontal integration of stakeholders, merging of risk assessment and risk management, incorporation of ecosystem services and societal benefits, and fulfilling the Ecosystem Approach.

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