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Developing regional locational guidance for wave and tidal energy in the Shetland Islands



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ABSTRACT

Marine renewables offer potential economic and environmental benefits, however there is a need to ensure that the growth of this emergent industry considers existing features and users of the marine environment. There is a clear role for marine spatial planning to guide its future development. The Shetland Regional Locational Guidance is a sensitivity led approach to identifying the suitability of areas around the Shetland Islands for renewable energy development and associated shore based infrastructure, and is an example of integrated coastal zone management. Working closely with local stakeholders was key to this process, which incorporates economic, environmental, social and cultural uses into one constraint model; constraint levels are set by local and societal values, rather than monetary equivalences. It has been successfully translated into policy within the Shetland Islands' Marine Spatial Plan, which will form supplementary guidance to the Shetland Islands Council's forthcoming Local Development Plan. The policy integrates with GIS data without requiring the creation of 'zones', as was requested by local stakeholders, and allows for updating of the GIS spatial model without requiring changes to the policy wording.

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1. Introduction

1.1. Marine spatial planning and the Shetland Islands' Marine Spatial Plan

Marine spatial planning (MSP) is defined as a 'public process of analysing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that usually have been specified through a political process' [1]. This can be achieved by applying an ecosystem based approach, as endorsed by the European Commission, to

integrated MSP and coastal zone management [2]. Experience has indicated that the place-based nature of the ecosystem approach is an essential element in the planning process, and if not incorporated appropriately can result in a predominantly sectoral approach to policy formulation [3].

The Shetland Islands' Marine Spatial Plan (SMSP) [4] is an integrated approach to marine management which steers away from the traditional sectoral approach that has, until recently, been applied towards marine issues [5]. The SMSP provides a policy framework and baseline spatial data to guide the placement of marine developments within the 12 nautical mile limit (Fig. 1). The policies and spatial data encompass economic, environmental, social and cultural uses and features. The primary focus of the SMSP is to provide more information to public bodies that have responsibilities for marine and coastal planning functions, and to developers. The SMSP informs decision-making, guides priorities, and seeks to achieve a balance between national and local interests [4]. The SMSP is guided by a Steering Group, which comprises of decision-makers, regulators, non-Governmental Organisations (NGOs), local industry and community representatives.

The SMSP provides a proactive approach to marine management, which aims to reduce conflicts and ensure a more equitable situation both across and within different priorities of the marine area. One way of ensuring this approach is by defining and analysing future conditions for ocean space, which is considered to be an integral step in the MSP process [1].

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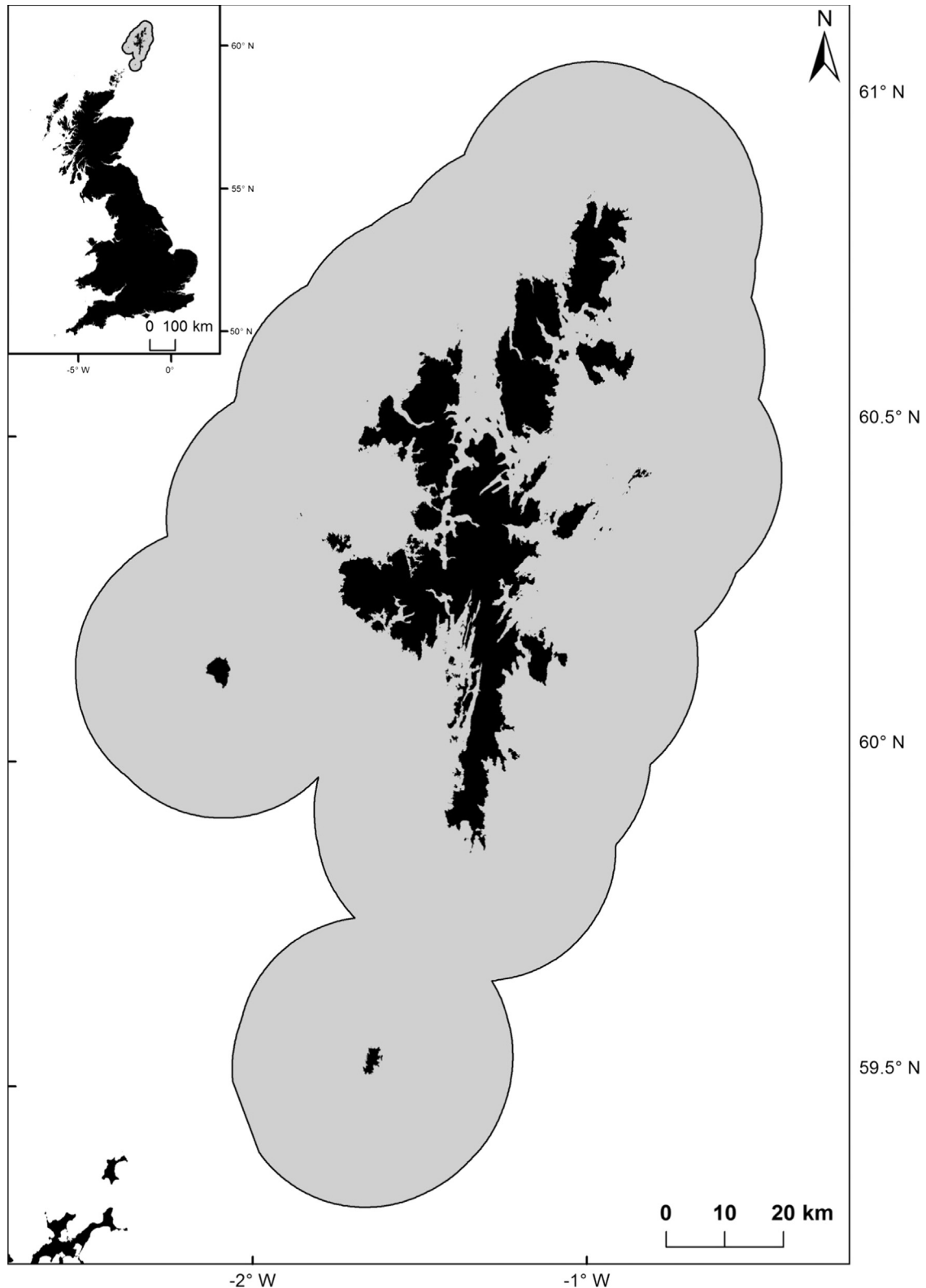


Fig. 1. Location map of the Shetland Islands, the most northerly islands of the United Kingdom. The spatial extent of The Shetland Islands' Marine Spatial Plan (12 nautical miles out from Mean High Water Spring) is marked in grey. Map not to be used for navigation. Contains Ordnance Survey data[©] Crown copyright and database right (2011). Contains UKHO data[©] Crown copyright and database rights.

1.2. Marine renewables

Over the last decade, the marine renewables industry in Scotland has been subject to significant research and development

investment, driven by increasing concerns over climate change and energy security. The Scottish Government has set a target of 30% of total energy demand being met by renewable sources by 2020, to be achieved by renewables satisfying 100% of electricity

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