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SPICOSA

Science and Policy Integration for Coastal System Assessment

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<http://www.spicosa.eu>

The Policy Issue: "The Implications of Increased Leisure and Tourist Use of the Firth of Clyde".

Firth of Clyde Study Site: System Design.

Consultation with stakeholders resulted in a list of potential policy issues related to the Clyde for consideration within the context of SPICOSA. Following discussion on the practicalities of implementation stakeholders were keen for 'increased leisure and tourist use of the Clyde' to be pursued as an issue due to the relative paucity of work being undertaken in this area.

It follows from the aim of the Scottish Government to keep pace with global tourism trends over the next decade and achieve 50% revenue growth with social, economic and environmental stability [1]. In pursuance of this, a study of the potential for development of the sailing industry in the Clyde suggested the estuary could double its berthing capacity for recreational boating by 2015 [2].

Goods and Services.

The main ecosystem goods and services that are relevant to the issue have been identified as follows:

Source (Products extracted from a system with a direct market value - consumptive use): Fisheries/seafood, Navigational/mooring use, Land/sea bed development use, Recreational use, Wildlife resource.

Sink (waste repository): Waste / pollution from boats, Waste / pollution from coastal infrastructure, and Waste / pollution from an increased population.

Service: conditions and processes: Natural processes - e.g. Purification cycling; Stabilization of climate, coastline, water quality, habitat services; Storm buffering; Sediments, contamination and waste dispersion; Biological production (non-marketable); Support to transportation; Support to fishery and aquaculture; Support to recreation; Support to scientific research; Nature conservation.

Existence value (of resource and of users of resource) - intrinsic; information and education; recreational / leisure opportunities; aesthetic value; future opportunities.

The Firth of Clyde SSA, Scotland.



Loch Fyne is a 61km long fjordic sea loch on the west coast of Scotland which opens into the larger Firth of Clyde. It has approximately 200km of coastline and a total catchment area of ~900km², much of which is sparsely populated and primarily used for non-intensive agriculture. The salinities are generally close to that of open sea water due to the loch's large size and volume. It is a popular sailing area, easily accessible from the sailing hub at Largs.

System

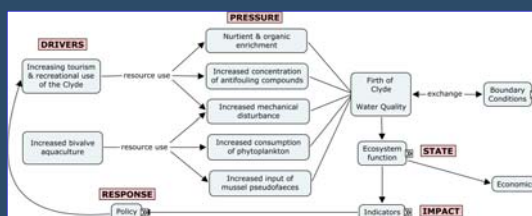
The recreational boating industry, tourism and shellfish aquaculture are significant sectors in the socio-economics of the Firth of Clyde. An increase in recreational boating activity is expected to result in development of additional mooring and step-ashore facilities around the region, resulting in localised direct impacts to the ecosystem. The increased number of boats is also expected to have a negative impact on water quality, particularly through increased nitrogenous waste and leaching of anti-foulant paints. Changes in water quality are likely to have a concomitant impact on the local ecosystem, particularly in regard to phytoplankton and shellfish production, and potentially on the recreational value of the area.

Loch Fyne



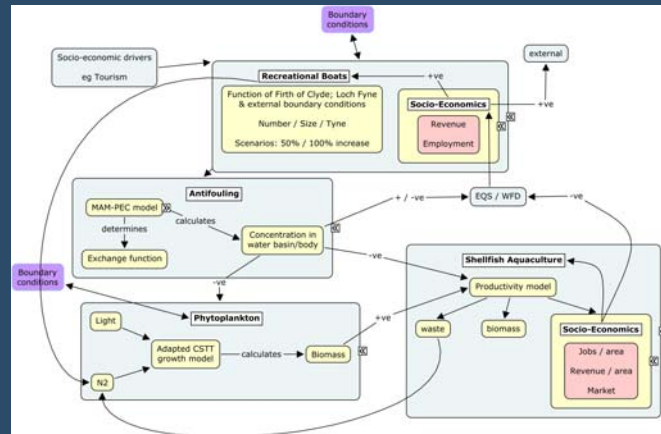
Approach

It is anticipated that the policy issue will be investigated using different approaches at different scales. An observational study at the marina scale will look at the impact of a marina / mooring site on the benthos. A schematic representation of this approach, following the DPSIR framework for organising information about the environment, is illustrated below.

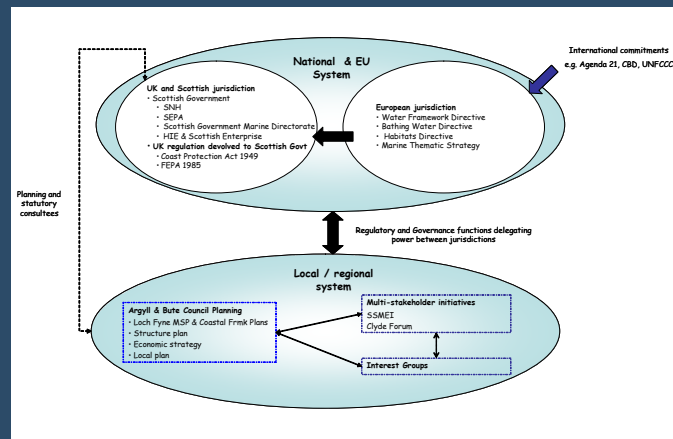


Conceptual model

We aim to construct a numerical model to investigate the leaching of anti-foulants at the zone B (water body) scale, focusing on Loch Fyne; and to construct an economic model at a regional scale. Illustrated below is a conceptual model for the Loch Fyne system.



Institutional and Socio-economic map of Loch Fyne



Stakeholder Partners

Stakeholders actively involved within our SSA include representatives from:

- Firth of Clyde SSMEI (Scottish Sustainable Marine Environment Initiative),
- The Scottish Environmental Protection Agency,
- Marine & Coastal Development Unit- Argyll & Bute Council,
- The Clyde Forum.

In addition we are actively pursuing the involvement of the following stakeholder organisations:

- The British Marine Federation - Scotland,
- The GreenBlue Initiative - Scotland,
- Scottish Enterprise,
- Industry representatives e.g. Largs Yacht Haven

References

1. Scottish Executive (2006) *Tourism Framework for Action 2002:2005*. 35pp.
2. McKenzie Wilson (2006) *Sailing in the Clyde Estuary: The potential for future development. A Market Assessment, Economic Impact Study and Action Plan*. Report for Scottish Enterprise and the Highlands and Islands Enterprise. 81pp.



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The Firth of Clyde study site application is being undertaken by the Scottish Association of Marine Science based at the Dunstaffnage Marine Laboratory, Oban led by Dr. Tavis Potts, and assisted by colleagues from Napier University.