Demonstrating the 'Ecosystem Approach'

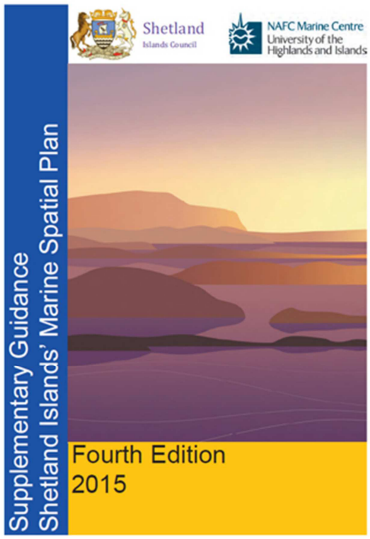
Shetland Islands' Marine Spatial Plan

The ecosystem approach to environmental management (Box 1) considers the whole landscape, including its environment, economy and society, to benefit both people and nature. This is one of a set of case studies that illustrates the ecosystem approach, its advantages, and challenges.

Shetland Islands' Marine Spatial Plan

Between 2006 and 2010, Shetland was one of four pilot areas for marine spatial planning under the Scottish Sustainable Marine Environment Initiative. Since 2010, the Shetland Islands' Marine Spatial Plan ('The Plan') has been developed at the NAFC Marine Centre in Scalloway, Shetland. The plan has now been adopted as Supplementary Guidance under the Shetland Local Development Plan. In the future, marine planning in Shetland will continue through delegated authority under the Marine (Scotland) Act 2010.

The Plan seeks to adopt the ecosystem approach. The UK Marine Policy Statement (2011) refers to this as "an approach which ensures the collective pressure of human activities is kept within the levels compatible with the achievement of good environmental status; that does not compromise the capacity of marine ecosystems to respond to human induced changes; and that enables the sustainable use of marine goods and services". (UK Government 2011: 4). So how does the current edition of the Plan, published in 2015, take an ecosystem approach?



Involving people

Each version of the Plan was a collaborative process, with input from a public consultation and an advisory group. The heads of the Shetland Islands Council and Shetland's 11 community councils sat on a local advisory group, along with industry and community representatives, non-government organisations and public body officials. All major decisions on the Plan were made jointly within the advisory group, including decisions about the use of zonation for marine development.

To involve the wider community, the marine planning team asked community councils which of the uses for the marine environment they valued, and what challenges they could identify. They also spoke to recreational clubs

Box 1: An 'Ecosystem Approach'

"The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way."

- Convention on Biological Diversity

The *ecosystem approach* is a way of managing natural resources. The environment around us is seen as one whole unit, comprising ecosystems and the way nature functions, and the people that live there. The ecosystem approach has twelve principles[1], summarised as:

- *Involving people*
- *Valuing nature's services*
- *Understanding how nature works*

The ecosystem approach takes account of whole units, beyond administrative boundaries. What constitutes a 'unit' will vary, but will depend largely on ecosystem functioning; for example a river basin, the range of a population of a species, or whole woodland area.

The vision is that we will all play a part in our local environment to take care of nature, and the people that live within it.

(e.g. sailing and kayaking) and other community members, asking them what they enjoy about the marine environment.

In applying the Plan, community and stakeholder involvement has been paramount. The application process for marine developments requires consultation with local communities, conservation groups, and any interested parties and pre-application discussion is strongly encouraged. The Plan recognises that "the marine environment not only provides economic benefits but can also directly contribute to the quality of life and well-being of coastal communities. The [Plan] will enhance this benefit by safeguarding equitable access for those who want to use and enjoy the coast and seas" (SMSP 2015: 113).

- **Advantages:** Asking for input raises awareness of the Plan and of the collaborative effort taken to produce it, and involving people has allowed the advisory group to gain greater awareness of community needs. Stakeholder involvement helps to ensure equal consideration to sometimes competing interests of natural heritage, history, community concerns and economy. Local people also help to correct mapping errors or locate marine features, allowing the Plan to benefit from local knowledge.
- **Challenges:** Involving people is a very time-consuming process, and includes managing stakeholder expectations and balancing different interests. This is particularly apparent where legislative requirements prioritise specific interests or where developments are considered to be of national importance. It may also be difficult to get broad stakeholder acceptance of methods for valuing nature, as some aspects of nature are not valued by all, or valued differently. This is true for beautiful views, some wildlife, and for some of the less tangible benefits that nature provides.

Valuing nature's services

Two-thirds of Shetland's economy is derived from the marine environment through fishing, aquaculture, tourism, and energy, and the health of Shetland's marine environment can be directly related to economic interests. For example, water quality is good, but it is not all 'A-rated', which affects shellfish harvesting during some parts of the year. The success of the shellfish industry is directly related to water quality, so there is an economic benefit to maintaining clean, safe and healthy seas.

Eshaness Coast (SSSI), Shetland. Photo: SNH

A healthy marine environment is also important to a successful tourism industry, which is worth £18-20m to the Shetland economy every year. As a result, "it is the general intention of Shetland Islands Council to conserve the character of the coast and to protect it, and its surroundings, from development which may be detrimental to this character" (SMSP 2015: 151).

Involving people has also allowed a great variety of values to be considered. What local people value in the marine environment has been recorded and mapped. Marine developments may not cause any "adverse social impact on the local community" (SMSP 2015: 113), so in considering what the community values, these services are protected.

- **Advantages:** Protecting the natural environment as a recreational resource is good for communities. We can value the variety of benefits that nature provides, including space for recreational activities, fitness opportunities, mental health benefits, and outdoor learning. Valuing these things can also ultimately save money trying to artificially provide recreational or fitness spaces.
- **Challenges:** It is difficult to compare commercial and non-commercial value if it is necessary to prioritise one over the other, particularly in sparsely populated areas where the number of people deriving the value may be small. Until stakeholders are more comfortable with ecosystem services concepts and terminology, to the extent that they can be applied fully within the planning process, it is more challenging to integrate less tangible benefits from nature with policy development.

Understanding how nature works

The Plan governs the Scottish Marine Region for the Shetland Isles, which covers the whole of Shetland. This allows decision-makers to consider an appropriate scale of the islands and their surrounding waters as a whole.

The Plan is structured and worded to ensure that policies for a 'Clean & Safe' and 'Healthy & Diverse' marine environment are followed **before** making 'Productive' use of Shetland's waters. This reflects a useful framework for an ecosystem approach, emphasising that that clean and healthy seas are a requirement for the waters to remain productive, taking account of nature's limits.

We do not know where everything is in the marine environment; studying and mapping key ecosystem components and processes in the seas is difficult and costly. The oceans are dynamic and highly variable, with complex ecology. For example, given the links between fishing for one species and the wellbeing of another, it is difficult to consider cumulative effects of multiple pressures, or to link ecological effects.

As a result, the Plan is flexible to take account of the natural dynamics of the changing seas. There are some spatial limitations on certain activities, but no further 'zoning' has been pursued. Rather than specifying areas that would be suitable or unsuitable for marine developments, data and information is mapped as supporting information to the Plan, allowing decision-makers to make use of the most recent understanding of environmental sensitivities and vulnerabilities. This is the case for marine renewable energy. In the future we may be able to definitively map where marine renewables are appropriate. Currently, however, the more flexible, case-based approach better caters to our evolving industries, and the dynamism of the marine environment. Both for sectors like fisheries, whose spatial range varies from year to year, and for emerging industries where environmental impacts are poorly understood, this flexibility is important.

- **Advantages:** Making ecosystem functioning paramount makes it clear that the seas need to be clean for them to be productive. This lets the Plan protect both natural and economic interests. Flexible plans and a case-based approach allow decisions to take account of new understanding.
- **Challenges:** Marine development and activities are complex, with many policies to be followed. In addition, many aspects of marine ecology are not well understood and/or function on a much broader scale than the Plan area. So it is challenging to fully account for these complexities.

An ecosystem approach

Though there are always challenges, the Shetland Islands Marine Spatial Plan is clearly modelled on an ecosystem approach. The strong focus on involving people supports progress on other aspects of the ecosystem approach, helping to protect different uses and values of the seas around Shetland, recognising the importance of Shetland's unique natural environment to local people. The structure of the Plan emphasises that a healthy environment is a prerequisite for the many different uses and services that people require.

MORE INFORMATION

UK Government (2011). UK Marine Policy Statement. HM Government, Scottish Government, Welsh Assembly Government, Northern Ireland Executive. Online: https://www.gov.uk/government/publications/uk-marine-policy-statement

[SMSP] Shetland Islands Marine Spatial Plan (2015). Shetland Islands Council and NAFC Marine Centre, University of the Highlands and Islands. Online: https://www.nafc.uhi.ac.uk/research/msp/simsp/SIMSP_2015.pdf

[1] The twelve principles were created by the Convention on Biological Diversity, and are intended to help implement the ecosystem approach. They have been adapted to provide an evaluation framework for applying the ecosystem approach and have also been translated into Plain English; for more information click here.