

Photo: Keith Hiscock



Working together to safeguard  
Marine Protected Areas



# North Devon: Ecosystem Services

What are the key benefits the marine environment provides to people, and what are the risks and opportunities?



## What are the key benefits that the marine environment provides?

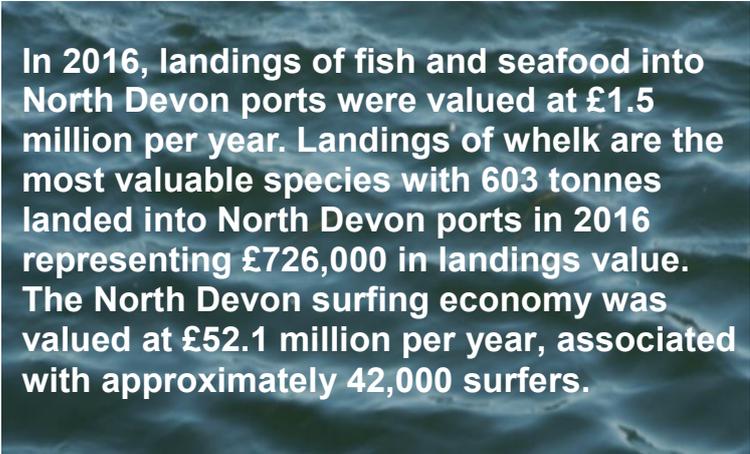
The marine environment in North Devon contains a surprising range of habitats from coastal saltmarsh to intertidal reefs.

These habitats and species are also known as 'natural capital assets' because they provide a variety of benefits to people (these benefits are also known as ecosystem services).

For example, shallow soft bottom areas (subtidal sediments) provide food for many fish species of commercial and conservation importance, including thornback ray and common skate. Coastal saltmarsh is important for protecting coastal land from flooding and extreme weather (sea defence). It also helps maintain a healthy climate by storing carbon.

## Who benefits?

Many people benefit from the marine natural capital assets in North Devon, including those taking part in marine recreation such as surfing and kayaking, and businesses that rely on the presence and quality of the marine environment (e.g. hotel owners, wildlife watching boat operators). For fisheries, the direct beneficiaries of natural capital are the fishermen who fish these waters.



**In 2016, landings of fish and seafood into North Devon ports were valued at £1.5 million per year. Landings of whelk are the most valuable species with 603 tonnes landed into North Devon ports in 2016 representing £726,000 in landings value. The North Devon surfing economy was valued at £52.1 million per year, associated with approximately 42,000 surfers.**

Traditional approaches to marine management have often focussed on the economic sectors that directly benefit from these natural assets and the organisations who manage the natural assets and their threats. However some sectors (e.g. businesses linked to tourism) may indirectly benefit from the expenditure of the people who directly benefit, even though they have no direct association with the resource. Identifying the wide range of stakeholders linked to the natural capital assets will support how we identify shared responsibilities and solutions for sustainable use of the marine environment.

## How are the benefits currently being managed?

Much of the North Devon marine area is subject to management measures so that adverse impact to habitats and species is avoided or controlled through a process that reviews activities in the marine environment (e.g. marine licensing decisions, and risk assessment of operators and impact of activities on water quality). Assessments and management measures are aimed at ensuring Good Ecological/Environmental Status is achieved.

A large proportion of the shallow areas of the North Devon marine area are found within Marine Protected Areas (MPAs). Current management measures in MPAs focus on protecting specific species and habitats (e.g. spiny lobsters, reefs) from physical damage, for example caused by mobile fishing gear. Smaller proportions of deeper habitats are contained within MPAs and so these habitats have fewer specific management measures.

## **What are the risks and opportunities?**

These habitats and the ecosystem services they provide are at risk, particularly from human activity. For example, activities linked to fishing and recreation and tourism (such as trawling, anchoring and mooring) can change the structure of habitats and affect the flows of ecosystem services.

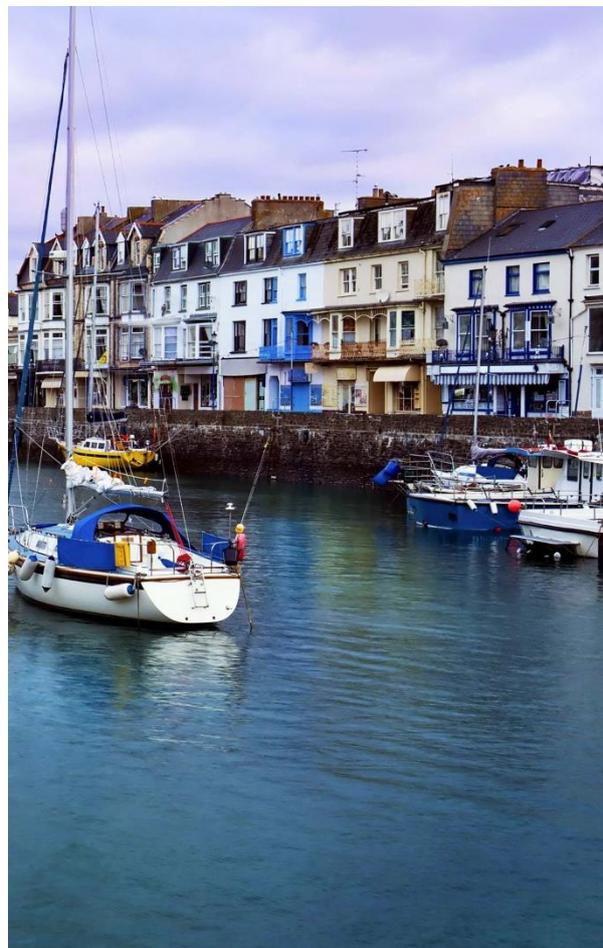
There are opportunities to develop further management measures to protect these habitats in order to ensure a long-term flow of ecosystem services. For example, coastal saltmarsh provides the highest contribution of multiple ecosystem services in the North Devon area, but only a third of the saltmarsh within MPAs has management measures associated with it. There is an opportunity to greatly enhance the provision of ecosystem services by developing management measures to protect a greater area of this habitat.

Shallow soft bottom areas (subtidal sediments) cover the greatest area of all the habitats in the North Devon marine area, and provide food for many fish species. There is an opportunity to develop more management measures to reduce disturbance of the seabed to improve the condition of this habitat and enhance the flow of ecosystem services.

Although surveys have been carried out inside MPAs in the North Devon area, outside MPAs we have very little information on the condition of habitats. There are opportunities here to create partnerships between fishermen and scientists to improve our understanding.

## **How will we know if management has been effective?**

We can develop indicators to measure the gains and losses in natural capital assets in order to know whether management has been effective. For example we can measure the extent of habitats, stocks of fish, and value of fish landed. This approach can be used to create a 'natural capital account' which keeps track of changes in natural capital assets and flows of ecosystem services supplied by them.



### Next steps

- We need to develop greater understanding of the condition of habitats so will undertake a 'sensitivity assessment' which maps the sensitivity of habitats to different pressures from activities.
- We need to develop a full baseline natural capital account for the North Devon marine area
- We need to explore current and future risk to ecosystem service delivery and potential for more extensive management measures
- Develop an evaluation framework for ecosystem services and management interventions using indicators
- Focus on stakeholders who previously haven't been linked to natural capital

### Find out more and get involved

This summary is based on information from the following report:

*Ashley, M., Rees, S.E., Cameron, A. 2018. North Devon Marine Pioneer Part 1: State of the art report of the links between the ecosystem and ecosystem services in the North Devon Marine Pioneer. A report to WWF-UK by research staff the Marine Institute at Plymouth University*

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