ENGLISH NATURE

State of nature

Maritime - getting onto an even keel - summary

working today
for nature tomorrow

Peter Wakely/English Nature

Foreword

Over the last few years, there has been a growing realisation and acceptance that we need to manage our maritime environment in a more holistic way. Recently, both the UK Government and the European Union have committed themselves to an ecosystem-based approach. This means the management emphasis needs to shift to integrate action to maintain (or restore) healthy ecosystems alongside appropriate human uses, to ensure benefits for both this and future generations. This will require a shift in priorities and a new more integrated approach, both in the way policies are set for the maritime environment and the way it is regulated. Changes to the conduct and extent of some important economic activities may be needed.

To determine what needs to change it is important to be as clear as possible about the state of the maritime environment and its dynamics and how vulnerable or robust our seas and coasts are to the uses being made of them. English Nature, as the Government's statutory adviser on nature conservation, has therefore been reviewing the evidence from the UK and worldwide on these issues. This Report brings the big picture together. We want it to stimulate informed debate and to help people understand why it is important to make changes in the way we use the maritime zone.

We plan to follow up this Report by developing, in consultation with DEFRA and other stakeholders, and through participatory processes, a strategy for England's maritime environment. This will help develop Government's over-arching strategy for the marine environment, recently published in their first marine stewardship report, by developing the changes in policy and practice English Nature believes are needed. We will seek to analyse not only the needs of the environment and biodiversity, but to consider these in the context of the economic, social, political and technological factors that affect the coast and seas and can drive or inhibit beneficial change. English Nature's Maritime Strategy will be published in 2003.

From the evidence we have studied we conclude that, despite the efforts made so far to protect it, the state of marine and coastal biodiversity is not good enough. Much coastal habitat has been lost, and the sea bed has in most places been highly modified, and so less capable of supporting a rich biodiversity. The marine ecosystem is showing signs of significant stress and low resilience to continuing pressure. All this adds up to an alarm call for those who use and manage our coasts and seas and care about the future.

There have been some major initiatives which continue to be crucial in protecting stretches of coast and English Nature values these. There have been important initiatives in the near-shore zone; English Nature has worked closely with many stakeholders to introduce an effective system of well-managed European marine sites. In addition, the UK Government has phased out sewage sludge dumping at sea and made investments to reduce polluting discharges and meet international commitments, along with greater use of strategic and environmental assessment processes. These are essential, but not sufficient to ensure a sustainable future.

The European Commission's analysis of the need for reform of the Common Fisheries Policy points starkly to the fact that the European fishing fleet is too large and to the urgent need to bring fishing effort down in line with the capacity of the marine resources. English Nature recognises that it is not just a question of protecting healthy coasts and seas. We have a major challenge to get people to recognise that the marine ecosystem is currently degraded and vulnerable, and unless we take some of the pressures off soon it may lose its ability to bounce back and recover. On the coast, we need to stem further losses of high quality habitats and to work with people to find more places where it is feasible to allow coastal pressure to operate in a more dynamic fashion.

We invite all who are interested in England's coast and seas to examine the evidence with us, to think about the connections between the different sectoral uses of the maritime zone and their cumulative impacts, and to reflect on the scale and urgency of action required to achieve a more sustainable future.

Sir Martin Doughty
Chair, English Nature

Heather, St Martin's, Isles of Scilly. Dan Laffoley/English Nature

Container vessel. Dan Laffoley/English Nature

Ammonite fossil. NHPA GE/GBE004224A

At a glance

Recent progress

During the 1990s there were a number of important initiatives which improved coastal and marine management including:

- A more environmentally sound approach to coastal defence planning, developed by MAFF, working closely with English Nature, leading to a number of cost effective and more sustainable soft engineering solutions.
- Positive action to integrate environmental protection measures into the oil and gas licensing process by DTI.
- The UK Biodiversity Action Plan (BAP), supported by Government, which includes targets for protection, restoration and enhancement of a number of maritime features.
- A new suite of conservation sites (Special Areas of Conservation), protected under the Habitats Regulations.

The current and precarious state

Despite these, and many other efforts, our maritime ecosystems and their wildlife are being damaged and are in further decline as a result of continuing human impacts and demands:

- Coastal habitats are still being lost rapidly. Past development and fixed/hard coastal defences are fragmenting and squeezing out naturally mobile coastal habitats and their associated wildlife. Only a handful of dune systems are not impacted by development, leisure facilities or artificial sea defences.
- Saltmarsh habitats, many trapped between rising sea-levels and fixed seawalls, are being lost rapidly to 'coastal squeeze'. The loss of saltmarsh nationally is currently estimated at 100 ha each year. In Essex alone one quarter of all the saltmarshes have been lost in the last 25 years. This not only means the loss of valuable wildlife areas, but poses a real challenge in sustaining seawalls that rely on the wave absorbing power of saltmarshes to defend low lying areas.

Isles of Scilly. Dan Laffoley/English Nature

- Most of Europe's vegetated shingle is in England, including a number of sites such as Dungeness, Chesil Beach and Orfordness, that are globally important both for their biology and geomorphology. Today, nearly 50% of designated shingle habitat is in unfavourable condition as a result of poor coastal management and from activities that damage the fragile plant communities. A major change in the ways these sites are managed will be necessary to maintain their biodiversity.
- Managed realignment should be our main approach to accommodate saltmarshes and mudflats in the face of rising sea-levels. However its use in flood management is still rare, and is failing to offset current losses. Only around 150 hectares of new habitat has been created in the last ten years: far short of the saltmarsh Biodiversity Action Plan target of 140 hectares per year.
- Present agricultural policy is having a double impact. It affects our ability to manage some coastal habitats such as saltmarsh and cliff-top grasslands with appropriate grazing levels or to target areas for habitat restoration. It is also causing deterioration in marine water quality due to nutrient run off from agricultural land. Since 1984, nitrogen inputs to the seas around the UK have increased by around 20%. The Irish Sea has shown steady nutrient increases over the last 30 years, whilst 60% of our internationally important maritime conservation sites (The Habitats Directive Natura 2000 sites) may be at risk or are already damaged by water quality problems.
- Plankton, the microscopic plants and animals at the bottom of the marine food chain, are the supporting foundation for all other species. By using and storing carbon dioxide, marine plankton are one of the key regulators of our global climate. A recent report stated that in the North Atlantic we have lost 14% of the critical part of the plankton that fixes carbon dioxide from the air within the last 20 years. Global warming has been implicated. Closer to the coast, The National Marine Monitoring Programme believes that pollutants within many of our industrial estuaries have reached levels which may harm the plankton.
- Fishing has taken so many fish out of the seas that the basic structure of marine food chains has altered and is degrading. Between 1880 and 1981 we significantly impacted, and some say halved, the complexity of the North Sea marine food chain. Here, and elsewhere, the rate of deterioration has reportedly increased since the 1980s. Poor water quality and global warming may also be contributing.
- Human pressures have significantly modified the variety of species that would live in the sea, above and beyond changes that might naturally have occurred. As fishing systematically removes the large and slow growing species of fish (and other animals), they are replaced by others that can better cope with the disturbance. In the last hundred years this significant change has been seen in fish populations and also in the populations of animals that live in the seabed. It is believed that discards from fishing have also artificially increased populations of some scavenging seabirds, fish and invertebrate species.

Chesil and the Fleet. Roger Covey/English Nature

Cockles. Roger Covey/English Nature

- Most of the large and old fish have been removed from the natural population. Plaice are now just a quarter of the size they were in 1902. Since 1900 the average fish size in the English Channel has declined by more than 15%. Shell middens show that over the last 4,500 years the average size of cod was around 80 to 100 cm. The average cod caught today is around 35 to 40 cm. The estimated total fish stock in the North Sea has declined by approximately 35% in the last 25 years.

- Fishing activity over sandy seabeds has resulted in dramatic changes to their species composition. Over the last century there was a decline in virtually all bivalve molluscs that live in the sediment, whereas scavengers and some predatory species have increased. Physical damage to the seabed and discards from fishing boats are the most likely causes.

- Heavy metals and other chemical pollutants introduced into the maritime environment are difficult to remove, especially when they become locked up in sediment or animal tissue. We have reduced mercury inputs by about 80% since 1985, and since 1987 we have restricted the use of some toxic anti-fouling paints, resulting in a doubling of marine life in some estuaries. However, effects still linger in many estuaries and in some marine species. Accumulations of chemicals in marine mammals, such as seals and porpoises, are believed to reduce their natural immune response, making them more susceptible to death by infectious diseases.

- New, man-made chemicals, discharged into the maritime environment over the last century, are now known to disrupt reproductive processes of fish, such as flounders in estuaries. These chemicals have unknown consequences for predators further up the food chain such as birds.

The economic truth

Losing biodiversity costs us more than sustaining it.

- The World Bank estimates the costs of environmentally sustainable management of the Mediterranean to be half the cost of dealing with the consequences of mismanagement. Prevention is better than cure, and more cost-effective.

- In 1998, 51% of people in England visited the seaside. Many of these visitors will have spent money in the local economy. Recreational anglers are estimated to be spending around £140 million each year in the coastal economies of England and Wales.

The way forward

We want this report to stimulate informed debate and help people understand why it is important to make changes in the way we use the maritime zone, and what those changes may look like. We will, of course, debate our ideas in building our maritime strategy, but we consider the following to be important issues.

- **A Government-led recovery initiative;** recovering our maritime ecosystems, and making best use of all our knowledge about these ecosystems, means that they will be better able to support both wildlife and sustainable exploitation, as well as acting as a natural buffer to chance events, such as storms and floods.

- **Areas free from exploitation** provide a reference by which we could judge our success on managing the impacts on the wider marine environment, and serve as crucial replenishment areas should we destroy or damage the maritime environment elsewhere.

- **New or revised legislation;** as part of the ongoing review of development in marine and coastal waters there would be merit in re-evaluating the 1949 Coast Protection Act with a view to creating a system where sustainable 'coastal management' solutions are also eligible for funding. New legislation is required to protect nationally important elements of marine ecosystems, and to set aside areas from all exploitation for ecosystem recovery, not just fisheries management.

- **The cumulative impacts of our actions;** we must move away from the current sectoral approach that manages activities in isolation from each other, to an approach that puts the emphasis on maintaining the health of ecosystems alongside appropriate human uses.

- **Recovery will take time;** some elements, such as some species of fish, may respond quicker than other parts of the ecosystem, such as habitats, which may take years or decades to re-establish and may be unpredictable. Ecosystems are complex and it is not a case of taking the correct management actions today and seeing a healthy marine environment tomorrow. Not all habitats and species will increase in area or numbers - those that are strongly influenced by human activities or dependent on human activities for sources of food, such as from fishing discards, can be expected to decline over time if management actions are successful.

- **Ecologically meaningful management;** success cannot be achieved by designating a number of isolated wildlife sites with fixed boundaries, while the quality of the wider environment declines. Coastal and marine habitats are dynamic, and this needs to be reflected in how they are managed.

- **Protecting the genetic diversity of our maritime ecosystems;** this includes threats originating from the introduction of organisms (including genetically modified organisms) and non-native species. Greater awareness of such threats is essential, coupled with improved risk management procedures at both national an European levels, linked with risk-assessment processes worldwide.

Cape Cornwall. Roger Covey/English Nature

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