Kent Coastal Network

Towards integration on the Kent Coast

This topic paper is part of a KCC coordinated project to develop an Integrated Coastal Action Plan for Kent. The aim is to generate wider discussion and it is accompanied by a consultation response form.

Title: - Biodiversity

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Introduction

This theme covers the Kent coastal biodiversity resource. This is an important theme in its own right and has impacts on our food, pharmaceuticals, other resources, as well as regulation of natural systems including climate.

All coastal habitats in Kent will be considered under this theme, examples taken from the Kent Biodiversity Action Plan include: -

Coastal & Floodplain Grazing Marsh
Coastal Saltmarsh
Coastal Sand Dunes
Coastal Vegetated Shingle
Littoral & Sublittoral Chalk
Maritime Cliff & Slope
Marine
Mudflats
Sabellaria alveolata Reefs
Sabellaria spinulosa Reefs
Saline Lagoons
Seagrass Beds

Importantly, some of these habitats cross the terrestrial/marine divide. The marine environment is very rich in biodiversity but the data is not comprehensive, it is also subject to local as well as international factors, such as pollution. The Marine & Coastal Access Bill will be addressing the safeguarding of marine biodiversity and this legislation will be referred to in work covered by this and other themes.

This topic paper

- Summarises the current status of coastal biodiversity resource in Kent.

- Describes the interaction that other coastal activities have with biodiversity

- Invites comment from coastal stakeholders and representatives about the issues affecting and influencing coastal and marine biodiversity.

- Is seen as an important step to working with other stakeholders and agencies to create a balance between the environment and the other activities, including developments which play a role on the coast.

Biodiversity of the Coastal Environment
Kent displays a range of coastal habitats which reflects the county's rich geological and geomorphological base. Together with the influences of climate and weather over time this has influenced the soils and exposures of rock which leads to the wildlife habitats we see today.

The high vertical chalk cliffs of Dover are a characteristic feature of the SE region and are of recognised international conservation value. So too are the long stretches of chalk cliff at Thanet, which include caves and chalk stacks. Other significant stretches of soft cliffs occur at Folkestone Warren where the impressive series of landslides support nationally important plant communities.

The extensive sand dune system at the mouth of the River Stour at Sandwich Bay is designated a Special Area of Conservation. It is the only remaining large area of fixed sand dune grassland in south-east England. The dunes are extremely species rich.

Dungeness in the south of Kent is the largest shingle beach in Britain and has the most diverse and extensive shingle vegetation in Europe. It supports an outstanding diversity of invertebrates, and is recognised as important on an international scale.

The county holds a large number of saline lagoons. In the Greater Thames Estuary these are often a result of former sand and gravel extractions. Saline lagoons also occur within saltmarsh and shingle habitat. Each one displays a characteristic fauna and flora depending on a range of factors such as salinity.

Saltmarsh is extensive in the Greater Thames estuary and provides important breeding grounds for oystercatcher, redshank and shelduck. Saltmarsh is also accreting in Pegwell Bay.

There are extensive areas of both intertidal sediment and intertidal rock around the Kent coast. To the north within the Greater Thames Estuary large areas of intertidal mudflats occur from Dartford to the Medway and Swale Estuaries. Intertidal sandflats are extensive at Pegwell Bay in East Kent. Intertidal shingle dominates in the south of Kent and to some extent in the north.

Many of these intertidal sediment habitats are rich in invertebrate life and of outstanding importance for wintering and migrating waterfowl and support internationally important populations of brent goose, redshank, knot, oystercatcher, grey plover, dunlin and curlew. Many of these areas are Special Protection Areas (SPAs)

Intertidal rock is dominated by the chalk platforms often found at the base of the chalk cliffs. The chalk foreshore at Thanet runs from the North Kent Coast into the East Kent Coast and is of international importance and is especially rich in algae, being the only location for some species. It is also important for the special assemblages of animal species which can only exist in and on soft rocks.

Around the Kent coast large areas of the seabed are covered by mixed sediments of sands and gravels. In many places, these are consolidated by formations created by the reef-building ross worms, and by mussel beds, creating habitat stability for a range of other species.

However some of Britain's most important reefs are found offshore where the intertidal rocky shores extend into the subtidal. Thanet is an excellent example of where chalk reefs extend many miles out into the English Channel. Chalk reefs, gullies and other features also occur under the chalk cliffs around Dover area. Folkestone also displays a variety of reef types which include chalk, limestone and sandstone. These reef areas are important in providing a stable surface for a rich variety of attached fauna (including hydroids, sea mats, anemones, sponges, seasquirts) and mobile species of fish, crustaceans and molluscs. Kent's waters also abound in artificial reefs formed from war and peacetime wrecks.

Intertidal mussel beds occur on chalk reefs and on consolidated areas of shingle on muddy sand shores. Intertidal seagrass beds are found in the south Swale.

Understanding the Biodiversity Resource

There is a gap around much of Kent in subtidal habitat data, apart from that derived from predictive modelling, and that collected in and immediately around the footprint of specific offshore developments. CHARM has produced a series of maps predicting the important areas for various individual species of fish which are of commercial as well as biodiversity value.

Recreational diving around Kent faces practical challenges in terms of visibility, currents and other users, and has traditionally focused on its many wrecks, leaving natural habitats and features largely un-dived and un-surveyed. Seasearch was set up in 2003 to begin to address this gap, and recreational divers continue to be trained and gather data on seabed habitats and associated species.

Coastal and intertidal habitats around Kent have been included in mapping projects using aerial photographic interpretation techniques, including the

Environment Agency's Thames Estuary and South East Strategic Regional Coastal Monitoring Habitat Mapping Project. While some coastal habitats are mapped in some detail, intertidal habitat classes are very broad. Shoresearch surveys gather data to establish a baseline on the distribution and abundance of intertidal habitats and species.

The data from both Seasearch and Shoresearch are managed by Kent Wildlife Trust in association with the Kent & Medway Biological Records Centre, and is being input to the national Marine Recorder database and made available directly and through the Joint Nature Conservation Committee and the National Biodiversity Network gateway on the internet.

The North East Kent European Marine Site Management Group and Scientific Advisory Group meet regularly to discuss issues relating to Thanet's European designated sites, and Kent's coast more broadly.

Defra have committed to providing the regional MPA projects with all available data relevant to the establishment of MPA's.

Protected Areas

On land, important sites and areas for wildlife receive protection from a range of different conservation designations. There is a hierarchy of types of sites, based on the quality of the asset, from international and European, through national, to County level. Development and damaging activities within protected areas are normally subject to control by local authorities and/or Natural England.

Designations on land are an important means of protection, and provide for due recognition of wildlife importance, based on scientific evaluation, not hunch or emotion. They are generally helpful in protecting and assisting positive management of wildlife, but have some negative aspects. They can be regarded as confrontational or wholly restrictive, and can create a significant administrative load. Overlap of different designations for the same site can cause confusion.

The wildlife of the marine environment currently receives limited protection in comparison to the terrestrial environment. Whilst species and habitats of European value are afforded protection under European legislation, there currently exists no protection for species and habitats of national importance. This, however, is set to change under proposals for the new Marine Act. Here, mechanisms will be available for the designation of Marine Conservation Zones, which will seek to conserve and enhance marine wildlife of national importance. This network of zones is set to be in place by 2012.

Designations

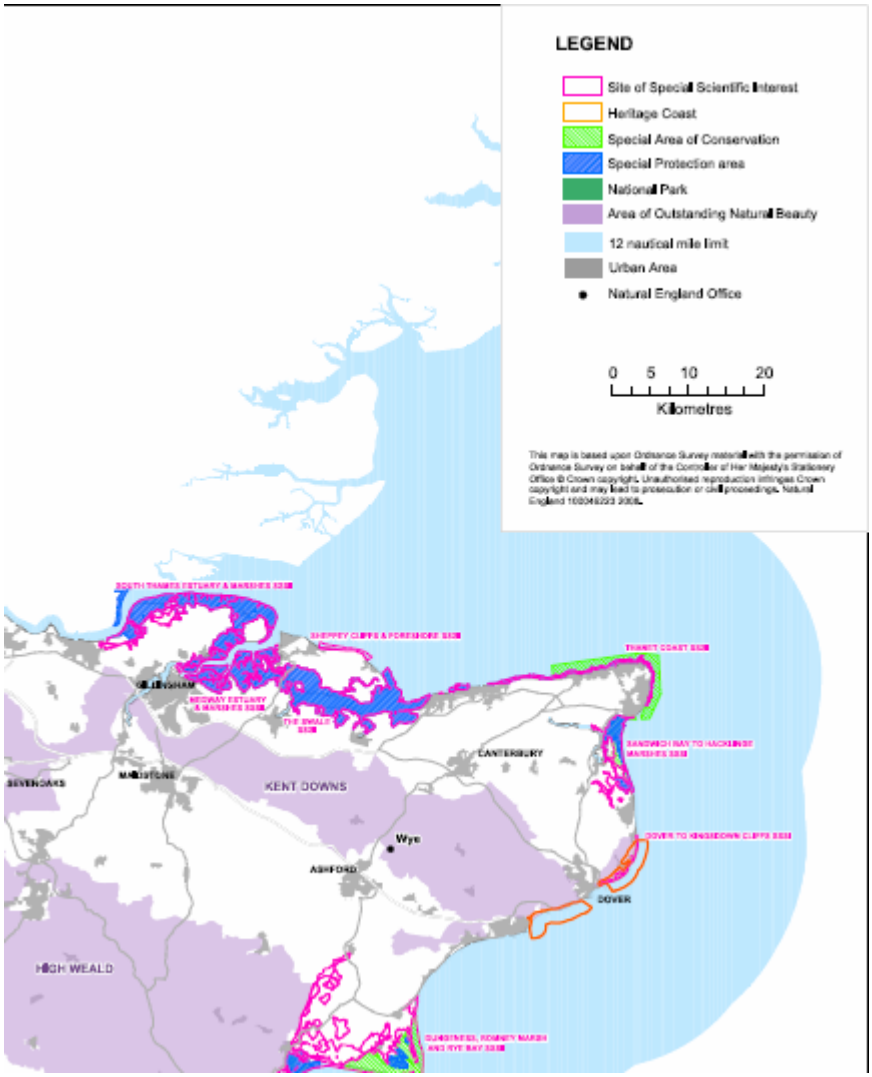

Fig 1 Taken from the Natural England SE Coastal Project map showing designations around the Kent coast.

Integration of Biodiversity on the Kent Coast

Biodiversity

The spread of invasive non-native plant and animal species is recognized internationally as one of the greatest threats to biodiversity. Non-native species can negatively impact on native species by competing for space and food, can transform habitats and threaten broader ecosystems causing serious problems to both environment and economy. The Pacific Oyster is a good example for Kent, as well as wireweed in rock pools and Wakame in Kent harbours and marinas. Invasive species are usually brought in by man

and their success may be encouraged by climate change, but UK species are also changing distribution. In Kent, both purple topshell and small periwinkle are now found, previously they were restricted to warmer waters further west.

Historic Environment
There are strong links between areas protected for historic value, which also have value for biodiversity, in the marine environment; wrecks provide a habitat for many creatures.

Geology and Geomorphology
Natural England designates SSSI's based on geological factors as well as biodiversity, so there is a clear link here. The link between geomorphological process and biodiversity is important, for example the deposition of shingle at Dungeness and associated vegetated shingle habitat.

Industry
Knowledge of the biodiversity resource, extensive designations both national and international and the operation of structure and local plans, means that development is controlled. On land development is well controlled through the processes of the land-use planning system which allows wildlife interest to be identified as constraints and to be taken into account in any new development scheme. Government advice is provided within its Planning Policy Statement 9 Biodiversity and Geological Conservation together with PPG 20 Planning Policy Guidance 20 Coastal Planning.

Below low water mark, development is dealt with on case-by-case basis, in response to proposals, with control exercised by different Government departments depending on the type of development. The most far-ranging control is the Food and Environment protection Act (FEPA) licence, which is required for the deposit of materials or structures on or under the seabed, including construction projects. Wildlife interests maybe considered through the production of an Environmental Statement, and in some cases this is a statutory requirement under the Environmental Assessment Directive.

The demand for aggregate from the seabed may be for building materials, but also beach replenishment. These works have an effect on marine life, but also the material available for accretion along the shoreline.

The fishing fleet is regulated by Kent and Essex Sea Fisheries Committee which is partly supported by contributions from Kent County Council. K&ESFC manage, regulate, develop and protect the fisheries within Kent with a view to balancing the needs of the fisheries and the sustainability of the marine environment. There are generic issues for fisheries and biodiversity and not just over fishing. Other issues include the use of heavy fishing gear that can damage the sea bed and wildlife being entangled in certain types of netting.

Environmental statements, prepared in relation to offshore renewable installations off the northeast Kent coast have proved to be an important source of new information about Kent's marine environment.

Quality of the Water Environment

The most general threat to marine wildlife is from pollution. Enclosed waters such as the estuaries are vulnerable to enrichment through runoff of nutrients from the land. Marine waters more generally have an elevated nutrient load already. Concerns range from the global impacts of climate change, which are predicted to lead to sea-level rise and a change in wildlife distribution, see above comments on invasive species.

More local concerns, where there is potential for a more direct influence are also significant. Nutrient inputs to the sea from land are a further issue, and as the treatment standards for sewage increase, there is increasing concern about more diffuse 'non-point' sources of pollution, including agricultural run-off. Discharges from industry, such as tri-butyl-tin and heavy metals can have impacts on wildlife.

Litter from shipping, recreation, domestic and fishing sources continues to have the potential to entangle and injure marine animals and pollute their habitats. Plastics create a further problem as they break down into tiny fragments which can attract and concentrate toxins, and are eaten by small animals and enter the food chain.

Recreation

Recreational use of the coast can disturb and damage wildlife. Walking can cause erosion, although resulting impacts on wildlife are localised, and currently are probably minor.

Coastal Access Legislation to fulfil the Government's vision for securing access along the length of the English coastline was announced in the Queen's Speech on 3 December, with the Marine and Coastal Access Bill being introduced into the House of Lords on 4 December 2008.

A key principle in Natural England's approach will be to strike the right balance for each circumstance in securing these new opportunities for access whilst ensuring the protection and enhancement of the coastal environment. This principle is in keeping with Natural England's statutory purpose to conserve, enhance and manage the natural environment for the benefit of present and future generations.

General recreation concerns occur when multiple use of coastal sites lead to an accumulative effect such as is found at Pegwell Bay. Here disturbance to feeding and roosting birds on the foreshore is caused by a number of activities such as dog walking and pursuit of water sports.

Concerns remain about the possibility of new sports, such as parascending and jet-skiing growing to an extent where they may have new impacts on coastal wildlife. Closer liaison between recreational groups and the marine

industry sector and conservation bodies is one way to reduce potential problems. A good example is around the Thanet Coast where voluntary measures have been adopted through the Thanet Coast Project's Codes of Conduct

Regeneration and Coastal Towns
Biodiversity has a role to play in regeneration projects around the Kent coast, for more detail see the Regeneration Topic Paper. There are also associated threats, similar to those indicated in the Industry section.

Shoreline Management
Kent has a highly modified coastline with much of it protected by coastal defences. Coastal defence structures (e.g. groynes, seawalls) have largely been constructed to provide protection from erosion and flooding although in the past they were also constructed for the purposes of land reclamation. As a result of the construction of these defences several areas around the Kent coast are experiencing "Coastal Squeeze". Coastal squeeze is the process by which intertidal habitats such as saltmarsh and mudflat become "squeezed" between a hard coastal defence line and rising sea levels. As the sea level rises, the habitat has no room to migrate inland (because of the presence of the coastal defence) and therefore the habitat is lost either due to erosion or inundation.

Coastal squeeze is an issue of growing concern around Kent as many internationally important habitats are being lost to this process. The loss of this habitat has many knock on effects including impacts on species the habitat supports (e.g. waders) and the loss of a natural form of coastal defence which, in turn makes the coast even more vulnerable to flooding and erosion.

Fortunately, Shoreline Management Planning (SMP) is well advanced in Kent and it is providing the mechanism for addressing some of these coastal squeeze issues. Specifically, the SMP is providing a strategic approach to managing coastal defences to ensure the most sustainable outcome for social, environmental and economic needs.

Tourism and the Visitor Economy
Biodiversity, natural landscapes etc are seen as a key attraction for tourism in Kent, see tourism paper. This type of interest helps to raise the profile of the biodiversity resource, but also requires the management of visitor pressure to prevent damage and disturbance to the resource.

Policy directions for Biodiversity on the Kent coast

Questions for discussion

In the face of sea level rise and climate change how can the biodiversity resource of the Kent coast be most effectively managed in future years?

- How can the issue of coastal squeeze and loss of intertidal habitat be addressed?

- In cases where managed retreat is applied, how can we ensure that existing habitats (such as freshwater marshes) don't lose out, there is suitable mitigation and no net loss of biodiversity?
- How do we ensure the opportunities for the creation of new coastal habitats are maximised?
- How do we ensure plant and animal communities are able to adapt and ensure that native species are not replaced/threatened by non-native species?

Can current levels of coastal biodiversity be maintained alongside the increased demands for development?

- How can we ensure that the ecosystems approach is properly applied within "sustainable development" and that regeneration and industrial development of the Kent coast doesn't have a negative effect on biodiversity?
- How can biodiversity be fully integrated into development schemes on the coast?
- Does the Kent coast need greater promotion in the context of tourism, regeneration and quality of life agendas?
- Public appreciation and use of the coast can result in greater protection and value placed on the biodiversity resource, but how can an increased demand for the natural environment be managed without damaging the resource?

How should the biodiversity opportunities presented by the Marine and Coastal Access Bill be grasped?

- Will the marine bill allow effective management across the marine/terrestrial divide?
- How are data gaps going to be addressed through this process?
- How could the information gathering be better supported from all user groups and interest groups?
- The ICAP should be referred to by the new MCZ Project Manager, due to be based at County Hall from 2009.

Integrated working on a local and international scale…

- Where else around the Kent coast should a partnership approach (such as Thanet Coast Project) be adopted to increase stakeholder interaction and awareness of biodiversity issues on the local level?
- The issue of marine pollution is an international one, how can this be addressed and who could the ICAP work with and lean on to reduce this?
- Essex, Greater London and East Sussex – key coastal contacts should be made aware of the ICAP, particularly where actions apply to boundaries, including French connections across The Channel.