

EU biodiversity policy context for the conservation of estuaries and dunes

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Abstract

Europe's estuaries and sand dune systems have suffered serious losses and degradation over the past century due to land and water use changes and coastal development pressures. EU biodiversity policy aims to halt the loss of these and other habitats of European conservation concern by 2010. The main legal instrument to achieve this is Council Directive 92/43/EEC on the conservation of natural habitat and of wild fauna and flora, commonly known as the Habitats Directive. This identifies estuaries and different types of sand dunes as habitat types of Community importance. The designation and management of Special Areas of Conservation is the key mechanism under the directive to achieve the favourable conservation status of these habitat types. The focus of action has initially been on establishing this network of sites, using commonly agreed habitat definitions and site selection criteria, with a view to ensuring sufficient representation of estuaries and sand dunes in the NATURA 2000 network. This process is advanced and lists of sites for different Biogeographical Regions covered by the Habitats Directive are being established. Increasingly, the focus is on putting in place effective management and monitoring systems. There is already a considerable amount of experience on management and restoration of sand dunes and estuaries in the EU, especially from projects supported under the LIFE programme. The European Commission has proposed that EU rural and regional development funds be used to co-finance management measures for the NATURA 2000 network. New monitoring arrangements should also provide a unified source of information at the EU scale on estuaries and sand dunes. There will be a need to address other threats to these habitat types in Europe, especially the predicted negative effects of climate change, in the context of the wider debate on EU biodiversity policy.

Keywords: EU biodiversity policy; Habitats Directive; NATURA 2000; Site management and monitoring.

Pressures on sand dunes and estuaries in the EU

Sand dunes and estuaries have been under serious pressure within the European Union for many decades. It is estimated that the area of coastal dune habitats has declined by 40% since 1900, with one-third being lost since 1977 (EUCC, 1993). This loss and degradation can be largely attributed to a wide range of human impacts. Activities such as recreational developments, construction, agricultural development and afforestation (Doody, 1991) have had serious negative effects on dunes in different parts of Europe.

Not only have these activities resulted in the loss of the habitat but they have also disrupted the natural dune processes of surviving areas.

Likewise, there has been similar extensive loss and degradation of Europe's estuaries, concerning all of the coastal Member States that host this habitat type. For example it has been estimated that 85% of British estuaries have been affected resulting in the removal of 25% of the intertidal areas of estuaries through land claim (Davidson *et al.*, 1991), especially linked to urban and transport infrastructures. As many estuaries are important centres of urbanisation there have also been substantial pollution and eutrophication impacts as well as pressures from recreational and leisure developments.

This loss and degradation of sand dunes and estuaries in Europe not only has implications for biodiversity but also for the vital goods and services that these habitats provide to people. For example, sand dunes are part of the natural sea defence system of many coastlines and estuaries act as key nursery grounds for fish species.

The EU biodiversity policy context

There is increased recognition of the need to take action to halt the loss and degradation of biodiversity, including habitats of EU conservation concern such as dunes and estuaries. This is reflected in the declaration by EU Heads of State and Government at the Göteborg European Council of June 2001, which set the ambitious target to halt the decline of biodiversity by 2010.

This policy objective is fully reflected in the sixth environment action programme of the European Community, titled 'Environment 2010: Our future, our choice', which covers the period 2001-2010 (European Communities, 2002). Nature and biodiversity is highlighted as one of the four environmental fields for urgent action in this programme.

A variety of approaches, relevant to the conservation of dunes and estuaries, are identified as mechanisms to deliver this biodiversity policy goal. These include the implementation of integrated coastal zone management. The need for broader integration of nature biodiversity objectives into policy sectors such as agriculture, fisheries and transport, is highlighted. Legal tools such as those relating to strategic and project environmental impact assessment, environmental liability and the water framework directive, all of which are highly relevant to coastal conservation, also need to be fully utilized.

However, the cornerstone of the EU policy to protect habitats such as dunes and estuaries is the implementation of Council Directive 79/409/EEC on the conservation of wild birds (commonly referred to as the 'Birds Directive') and Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ('the Habitats Directive'). These directives provide for targeted action to conserve these habitats, especially through the establishment and management of the Natura 2000 network.

The European Commission is at present reviewing the EC Biodiversity Strategy (European Communities, 1998) and is preparing a Communication on this subject which aims to clarify EU priorities for achievement of the 2010 commitments and towards the longer-term restoration of habitats and natural systems.

The central role of the Habitats Directive and Natura 2000

Whereas Special Protection Areas (SPAs) designated under the Birds Directive provide protection for dunes and estuaries, especially for sites that are wetlands of international importance for migratory waterbirds, the main targeted instrument for the conservation of these habitats is the Habitats Directive.

This sets out the overall objective of achieving favourable conservation status for the habitat type 'estuaries' and sand dune habitat types, listed in Annex I of the directive. Favourable conservation status means that the natural range and area of the habitat type is stable or increasing, that the specific structures and functions necessary for its long term maintenance are likely to continue to exist and that the conservation of its typical species is favourable.

The designation of Special Areas of Conservation (SACs) provides a legal mechanism for the maintenance, and where appropriate, restoration of these habitat types at a favourable conservation status. Together with SPAs under the Birds Directive, the SACs form the Natura 2000 network.

Different types of sand dunes are well represented in Annex I of the Habitats Directive (*cf.* Houston, 2005). Several dune habitat types such as fixed coastal dunes with herbaceous vegetation ('grey dunes'), have priority status under the directive which provides additional safeguards from potentially damaging development for SACs hosting these habitat types.

Establishing the NATURA 2000 network

Establishment of the network of sites to be protected under the Habitats Directive has proven to be a more difficult and longer task than originally envisaged by the timeframes set out in the directive. Since the adoption of the directive in 1992 the European Commission has worked closely with Member States to achieve this objective, especially within the framework of the Habitats Committee and its scientific working group. The European Topic Centre for Biodiversity of the European Environment Agency has also played a key role in the process. Experts from non governmental organisations, under the auspices of two umbrella structures called the 'European Habitats Forum' and the 'Habitats Users Forums' have also played an important role.

The need for Member States to ensure that the process of selecting and delimiting sites under the Habitats Directive is exclusively science based has been confirmed by jurisprudence of the EU Court of Justice in an important test case relating to the Severn Estuary in the United Kingdom (European Communities, 2001). This was in line with an

earlier similar ruling of the Court of Justice in a test case concerning the Lappel Bank in the Medway Estuary, the United Kingdom, which confirmed that economic requirements could not be taken into account when selecting the sites and defining the boundaries of SPAs under the Birds Directive (European Communities, 1996).

In order to ensure a common approach to the selection of sites for Annex I habitat types the Commission has prepared an interpretation manual of European Union habitats (European Commission, 2003). This provides a definition for each habitat type of Annex I, lists characteristic animal and plant species and takes account of the corresponding categories in other classification systems.

For the habitat type 'estuaries' there have been further discussions with the Habitats Committee in relation to the definition, with the European Commission providing additional guidance to aid selection of sites hosting this habitat type. This has emphasised the need for an inclusive approach in identifying estuarine sites because of the complex and dynamic nature of this habitat type. The selection process should take account not only of the constituent biotopes but also the relevant geomorphological features, dynamic ecological issues and hydrological processes. As shipping lanes and other sub-littoral channels play a role in the hydrological functioning of estuaries they should be included in the sites. The only justification for excluding part of a site is where irreversible changes to the nature of the estuary, such as land claims, have resulted in serious loss of ecological value of this component of the estuary.

The Habitat Directive requires each Member State to contribute to the creation of Natura 2000 in proportion to the representation within its territory of the dune and estuaries habitat types. In proposing the sites Member States have been required to apply the site selection criteria given in Annex III of the directive. These are elaborated in the Natura 2000 data format which also requires Member States to provide additional relevant information about the site (European Communities, 1997). Together with other scientific reference information this data has provided the basis for subsequent evaluations of the sufficiency of these proposals, carried out within the framework of seminars for each of the Biogeographical Regions covered by the directive. This exercise has involved the European Commission, Member States, the European topic Centre for Biodiversity, NGOs, and independent experts.

For the 15 countries that were EU Member States prior to May 2004 the process of selecting the sites is almost complete. By July 2005 lists of sites had been established for five of the six biogeographical regions concerned, with that for the Mediterranean Region in an advanced stage of finalisation. There are still a small number of gaps in the coverage of estuaries and dunes for different countries. For example, the Commission Decision on the list of sites of Community importance (SCIs) for the Atlantic Biogeographical Region of December 2004 indicates that the proposals of France, Germany, Portugal and the United Kingdom for 'estuaries' are still not complete. Details about each of the relevant Commission Decisions are available on the web site of the European Commission at <http://europa.eu.int/comm/environment/nature/home.htm>.

For the 10 new countries that acceded to the European Union in May 2004 the process of selecting Natura 2000 sites is already underway and substantial proposals have already been made with the first biogeographic seminar having taken place for Alpine Region in May 2004 and further seminars being planned for the coming months.

In total, about 260 sites contain 'estuaries', half of which are located in the Atlantic Biogeographical Region. There is very large variation in the area and proportion of this habitat type present in the different sites. Likewise, a large number of the sites contain dune habitat types. More than 800 sites contain at least one of the habitat types corresponding to 'sea dunes of the Atlantic, North Sea and Baltic' with half of these sites hosting the priority habitat type 'grey dunes'. The majority of the areas are multiple dune habitat interest sites, which has implications for their future management.

Management of the Natura 2000 sites

As the process of selecting the Natura 2000 sites nears completion the focus is increasingly shifting to the protection, management and monitoring of the sites in the network. This is the responsibility of the Member States. The establishment of the lists of Sites of Community importance (SCIs) has already provided a high level of protection to safeguard sites hosting sand dunes and estuaries from potentially damaging developments. The preventative and procedural safeguards of Article 6 of the directive must be applied to any plan or project that may significantly affect the integrity of these sites. Member States now need to finalise the establishment of the network by designating the SCIs as SACs which gives legal effect to the proactive conservation measures outlined in Article 6(1) of the Habitats Directive.

The designation of Natura 2000 areas is not intended as a block on human activities in and around the sites. However, given that many of the sites occur in areas where there are potentially conflicting patterns of land and water uses there is a need for management planning to ensure that socio-economic activities are sustainable and not damaging to the conservation values for which the areas were selected. Although they may not always be necessary, management plans, which take into account the specific characteristics of the site and all foreseen activities, are identified in the Habitats Directive as a tool for the conservation or restoration of the sites. They also provide a vehicle for consultation and cooperation with economic groups present on the site. As such they have potential as a confidence building measure for those engaged in socio-economic activities in and around Natura 2000 areas.

There is already considerable experience through LIFE Nature projects in carrying out management and restoration actions for sand dunes (*cf.* Houston, 2005). There have also been strategically important projects involving the management of estuaries, such as the UK Marine SACs project (<http://www.ukmarinesac.org.uk>). This helped create broad partnerships and has provided valuable guidance on establishing management schemes for coastal Natura 2000 sites in the United Kingdom. It will be necessary to share this experience and expertise for the conservation of dunes and estuaries across the Natura 2000 network.

One particular challenge will be to work closely with the relevant authorities and users in the management and sustainable use of estuaries. As many of Europe's major ports are located in estuaries that now form part of the Natura 2000 network there will be a need to develop partnerships that work to ensure that activities and operations are carried out in ways that are not detrimental to the ecological integrity of these sites. There are already several important initiatives such as that under the auspices of the European Sea Ports Organisation (ESPO) and the Paralia Nature project, the latter co-ordinated by the Institute for Infrastructure, Environment and Innovation in Belgium (<http://www.imiparalianature.org/>). It will be necessary to build on these initiatives to strengthen dialogue, sharing of good practice and provision of relevant guidance for the management of estuaries in Natura 2000.

It has to be accepted that there will be particular circumstances where developments that are damaging to Natura 2000 sites hosting estuaries and dunes are allowed to take place once these have satisfied each of the substantive procedural steps for assessing plans and projects, defined in Article 6 (3) and (4) of the Habitats Directive. In such cases there will be a need for adequate compensatory measures to offset any loss of value of the affected site. This could involve restoration activities in the site or elsewhere. The European Commission has provided interpretative and methodological guidance on how to deal with proposed developments that affect Natura 2000 areas (European Commission, 2000; 2001). It plans to update this with additional guidance on the subject of compensatory measures.

There is also an ongoing debate on the future financing of the management of Natura 2000 sites. In this regard the European Commission has proposed that EU rural and regional development funds be used to co-finance management measures for the Natura 2000 network (European Communities, 2004).

Monitoring of sand dunes and estuaries

In order to meet the requirements of Articles 11 and 17 of the Habitats Directive Member States have to put in place a system of monitoring, assessment and reporting of the conservation status of estuaries and sand dunes habitat types listed of Annex I. For the next reporting period on implementation of the directive, covering 2001-2006, Member States will be required to carry out an assessment of the conservation status of these and other habitat types as well as species of EU conservation interest. Common approaches are being developed for these assessments. A framework for this has been agreed with the Habitats Committee in April 2005.

Much of the information will need to come from sites in the Natura 2000 network but the assessments of favourable conservation status will not be limited to the sites. A common matrix has been developed for assessing the conservation status which will have to be defined for different habitats on a case by case basis. Member States will need to use reference values and trends for the range and area of each habitat type. Other parameters to be considered will be the structure and functions of the habitat. The future prospects for its long term conservation will also require assessment. For Member States whose

territory includes more than one biogeographical region the assessments will need to be carried out for each region.

Member States will need to develop the necessary monitoring systems to enable these assessments to be carried out. As this is a highly technical matter experts, including those concerned with coastal habitats should have an important role to play in supporting the assessments made by the authorities in the different Member States. The information from the national assessments will then be compiled at EU level for the different habitat types and species within the framework of each biogeographical region.

Conclusion

Europe's sand dunes and estuaries have already significantly benefited from the legal protection of the Habitats Directive and Natura 2000, which has been the main driver for their conservation over the past 13 years. As the focus shifts from the selection of sites to their management, and where necessary restoration, there will be a need to put in place effective management and monitoring systems.

The sharing of experience and expertise among scientists, conservation managers and administrators will be essential to underpin this process with a view to ensuring the future success of the Natura 2000 network. Consideration will also increasingly have to be given to the implications of impending climate change on the conservation and management of sand dunes and estuaries with a view to developing appropriate mitigation and adaptive strategies in the future to ensure the overall integrity of the Natura 2000 network in dynamic and changing landscapes and seascapes.

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