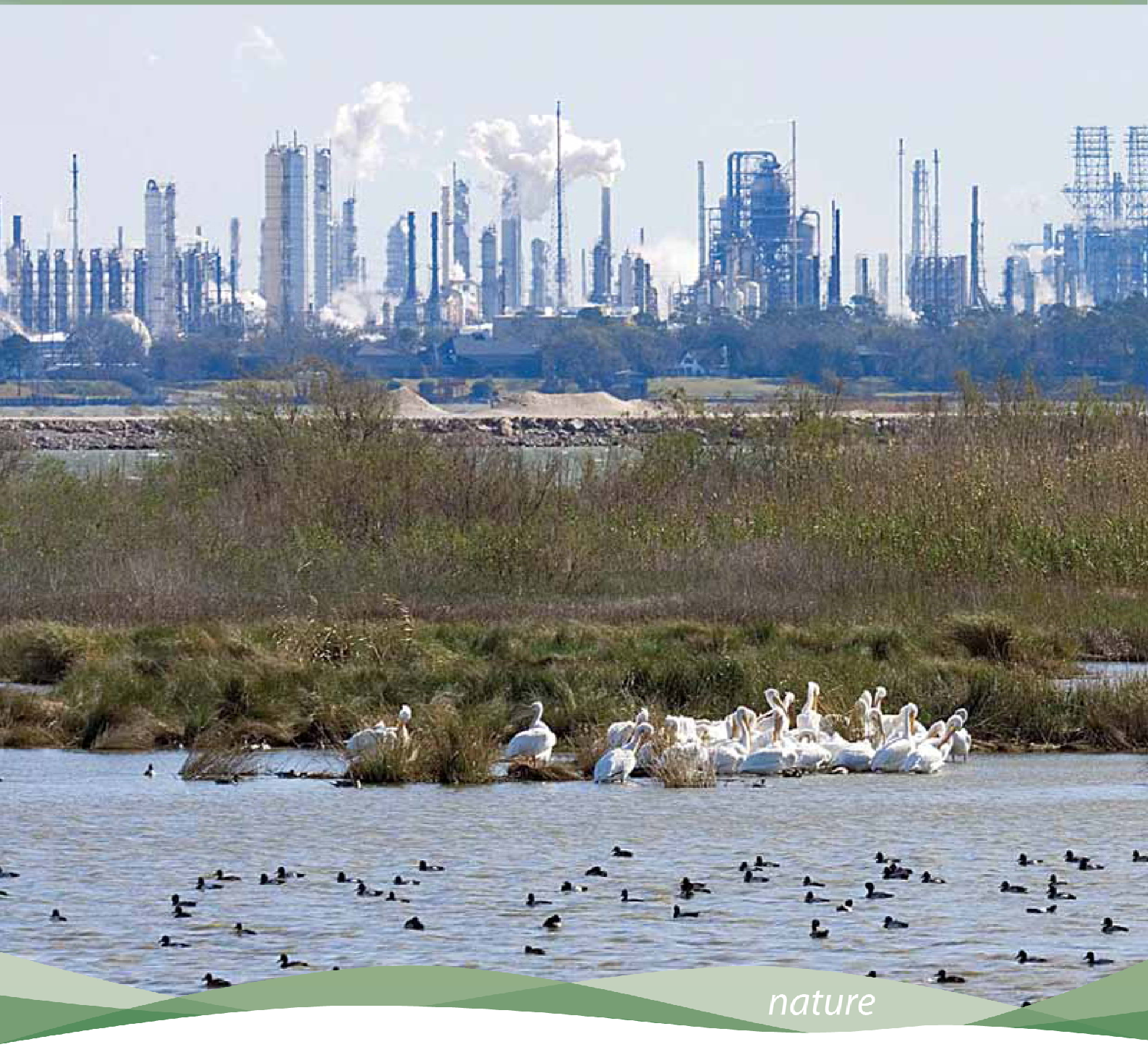
NATURA 2000

GUIDANCE DOCUMENT

The implementation of the Birds and Habitats Directives in estuaries and coastal zones

with particular attention to port development and dredging



nature

EUROPEAN COMMISSION

environment

GUIDELINES ON THE IMPLEMENTATION OF THE BIRDS AND HABITATS DIRECTIVES IN ESTUARIES AND COASTAL ZONES

with particular attention to port development and dredging

This document reflects the view of the Commission services and is not of a binding nature.

European Commission, January 2011

Photo: istockphoto

It has greatly benefitted from discussions with and information supplied by experts from Member States and key stakeholder groups, within the framework of the EC Estuaries and Ports Working Group.

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EXECUTIVE SUMMARY

This document provides sector specific guidance on the implementation of the Birds and Habitats Directives in estuaries and coastal zones. The guidance has benefitted from discussions held in the context of a specific working group with representatives from Member States, stakeholder organisations and environmental NGOs.

Its development followed a request of the ports and maritime services sector. Ports, especially in Western Europe, are often situated in or near estuaries. These are dynamic and highly productive ecosystems and in many cases designated Natura 2000 sites. Estuaries provide the necessary shelter and suitable conditions for maritime access to ports.

Ports fulfil a strategic role in the development and realisation of global trade and they periodically need to expand. Previously not subject to many environmental requirements, the application and interpretation of environmental legislation, including the EU nature directives, has presented new challenges to the sector which, in recent years, has sometimes resulted in delays in port development projects.

Ports play an essential role in economic development and seek legal certainty as a prerequisite for new development projects. The European Port's policy, as formulated by the European Commission, has recommended reviewing legal constraints that may hinder development projects ('fast track procedure'). The present guidance document provides a number of recommendations and elements of good practice to enhance port development and management in or near Natura 2000 sites.

Some key recommendations are:

- The design of plans or projects should always be based on mutually beneficial strategies with a view to achieving dual goals of both Natura 2000 conservation objectives and socio-economic objectives, according to the 'working with nature' concept.
- Damage prevention or avoidance measures should always be preferred to compensation measures.
- Pre-assessments to evaluate the potential for impact of a plan or project on Natura 2000 sites should always be foreseen. This is necessary in order to decide whether a plan or project is likely to have significant effects on a Natura 2000 site and whether an 'appropriate assessment' in the sense of Article 6(3) of the Habitats Directive is required.
- Thorough and timely stakeholder consultation is always recommended in order to prevent the raising of objections during the project permitting process.
- Maintenance of ports and navigational access should be dealt with in the context of integrated management plans for the entire waterway or the affected Natura 2000 site. Capital dredging operations should be designed as a part of sustainable dredging and sediment management schemes.
- In case of any remaining minor scientific uncertainty with regard to the effects of a plan or project or the related mitigation or compensatory measures, the measures should include a pre-defined and validated scheme to monitor the actual impacts and a framework to adapt the mitigation and compensation measures to the actual impacts.

Introduction

Estuaries and coastal zones are among the most productive ecosystems in the world, with both high ecological and economic values. They are of prime importance for wildlife, especially migrating and breeding birds and of major value in terms of their rich natural resources (e.g. as nursery grounds for commercially important fish). In addition, they also offer a wide variety of ecosystem services such as shoreline stabilization, nutrient regulation, carbon sequestration, detoxification of polluted waters and supply of food and energy resources (Millennium Ecosystem Assessment, 2005).

As a result they provide a wide range of economic benefits to many sectors, including fishermen, industrial complexes and amenity services such as tourism and recreation. Estuaries are also often ideal locations for ports, harbours and shipyards as they provide the necessary shelter for ships as well as access further inland along major rivers.

Estuaries and coastal zones are however also amongst the most dynamic and complex ecosystems in the world. They are made up of a wide range of different habitats, which exist in an ever-changing mosaic structure. Typical habitats that make up an estuary include sand banks, mudflats and sand flats, salt marshes and at their coastal edge sand dunes, coastal lagoons, shallow inlets and bays, reefs, islets and small islands, sandy beaches, sea cliffs.

Most of these habitat types are protected under Directive 92/43/EEC on the conservation of natural habitats and wild flora and fauna (commonly referred to as 'the Habitats Directive'). Shorebirds are dependent on estuaries and coastal zones during their migrations from breeding to wintering grounds. Furthermore, numerous bird species breed in estuarine and coastal habitats. As a result, many estuaries and coastal areas are also protected under Directive 2009/147/EC on the conservation of birds (commonly referred to as 'the Birds Directive').

Over a long history and even more so today, many of Europe's ports are logistic hubs handling cargo from all over the world. The importance and demand for maritime transport has increased significantly in the last 30 years and is likely to continue to do so in the future. The European Commission supports this transport network through its ports policy, and through the promotion of the "Motorways of the Sea" and Short Sea Shipping.

As stated in the Communication on a European Ports Policy[1], more than 1 200 merchant ports cover some 100 000 km of European coasts. They are key points of modal transfer and are of vital interest to handle 90% of Europe's international trade. In support of the EU's general transport policy[2], they handle 40% of the volume of tonne-kilometres carried out in intra-Community trade. The European Commission has recognized this fact through its Communication on 'An Integrated Maritime Policy for the European Union' which states that seaports and shipping allow Europe to benefit from the rapid growth in international trade and to play a leading role in the global economy[3].

Maritime ports, especially those connected with or situated far inland in estuaries connected with navigable inland waterways and railways, can also play a significant role in reducing CO_2 emissions, but will also have to face the effects of climate change.

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[1] COM(2007) 616
[2] COM(2006) 314.
[3] (EC, 2007)

Inevitably there will be occasions where port and fairway developments and maintenance and Natura 2000 designation overlap and at times fail to coincide. The Habitats and Birds Directives do not, a priori, preclude the possibilities for further development and use of estuaries and coastal zones within or around Natura 2000 sites. Instead they lay down stepwise procedures to ensure that any such developments are done in a way that is compatible with the protection of species and habitats of European importance for which the sites have been designated. In the case of projects of overriding public interest, and in the absence of alternative solutions, the Directive provides a mechanism that can allow damaging developments, provided that compensation and adaptation ensures that the overall coherence of the Natura 2000 Network is not compromised.

The pressure on coastal zones and estuaries has encouraged a shift towards more integrated and efficient spatial planning. This, combined with early stakeholder dialogue, has proven over the years to be an effective way to promote sustainable development in line with the EU environmental legislation (including for nature protection, water and the marine environment), the European port policy and the European Integrated Maritime Policy.

Purpose of this document

The European Commission has already published several guidance documents to support Member States in implementing the Birds and Habitats directives in the protection of Natura 2000 (see annex 1); this guidance also helps citizens and stakeholders in better understanding key provisions of the Directives. However, there is a need for further clarifications, explanations and even prospective views on the application of the EU nature legislation to port development and the management of estuaries and coastal zones, especially in light of their importance as access-routes for seagoing ships.

The aim of the present guidance document is to explain the protection regime, defined under Article 6 of the Habitats Directive that applies to Natura 2000 sites in the specific context of estuaries and coastal zones. The primary focus is on clarifying, explaining and elaborating on the implementation of EU nature legislation for Natura 2000 sites located in estuaries and overlapping with, fairway channels and coastal zones, with particular attention to port-related activities, including dredging and industry (e.g. shipyards).

Other environmental legislation such as the Water Framework Directive (200/60/EC), the Marine Strategy Framework Directive (2008/56), the directive 2001/42/EC on strategic environmental assessments (SEA) or the directive 85/337/EEC on environmental impact assessments are beyond the scope of this document and therefore not addressed in detail in this document. Aspects related to urbanisation, agriculture or other developments in the same areas or related to pressures resulting from inland waterborne transport are not considered in this work, but these activities will also need to be considered in management plans for estuarine Natura 2000 sites and in integrated coastal zone management as well as when assessing cumulative effects of different activities.

The present guidelines have benefited from discussions within a specific working group on estuaries, coastal zones and ports established by the European Commission (DG ENV and DG TREN). This group included stakeholders from different sectors and met six times during 2007-2009. In addition to the guidelines, a supporting technical document with technical and scientific background information has been prepared.

The Technical Supporting Document includes general information on the study approach, the literature used and the results of the exchange of information between the Working Group and the consultancy firm that was in charge of the overall coordination. The Technical Supporting Document can be downloaded from the public Circa Platform: http://circa.europa.eu/Public/irc/env/estuary/home.

The present guidelines are intended to be faithful to the text of the relevant Directives and the wider principles underpinning EU law on the environment and port-related activities. They are not legislative in character, they do not provide any new rules but give further clarification, building on existing guidelines. The guidelines reflect the views of the Commission services on the implementation of the directives in estuaries and coastal zones.

They are not of a binding nature. It should be stressed that any interpretation of EU legislation rests exclusively with the EU Court of Justice. The guidelines are intended to respect the existing case law and may need to be adapted in light of any emerging new jurisprudence of the Court.

The present guidelines have the ambition to reconcile the needs for port development and for environmental protection. The target audiences and users of these guidelines are local, regional and national or federal competent authorities, port and waterway authorities, operators, industries, dredging companies and associations, maritime service industry, Environmental NGOs, Conservation agencies and Natura2000 site managers.

1. POLICY BACKGROUND

1.1. Estuaries, coastal zones and the EU Nature legislation,

In response to the rapid global decline in biodiversity, the European Union has set itself the goal, at the European Summit in Gothenburg in 2001, "to halt the decline of biodiversity in the EU by 2010"[4] and to "restore habitats and natural systems"[5]. This commitment is now firmly embedded in all aspects of EU policy. 'Nature and biodiversity' is one of four priority areas for action under the 6th Environment Action Programme (6th EAP)[6], which sets out the framework for environmental policy-making in the EU for the period 2002-2012. The 6th EAP also advocates, in accordance with the Treaty, the full integration of environmental protection requirements, including those related to biodiversity conservation, into all other EU policies and actions.

Together, the "Birds" and "Habitats" Directives are the cornerstones of EU biodiversity policy. They enable EU Member States to work together, within the same strong legislative framework, to protect Europe's most valuable species and habitats across their entire natural range within the EU, irrespective of political or administrative boundaries.

Both directives require Member States to designate specific terrestrial and marine sites, which together constitute the Natura 2000 network. This network consists of Special Protected Areas (SPAs) -protecting bird species and Special Areas of Conservation (SACs) - protecting habitats and other species of EU conservation concern. The aim of the Natura 2000 network is to assure the long-term survival of Europe's most threatened species and habitats. Other provisions of the directives include a strict system of species protection, as well as monitoring and reporting schemes.

Article 6 of the Habitats Directive plays a crucial role in the management and sustainable use of the sites that make up the Natura 2000 network. In the spirit of integration, it provides a series of procedural safeguards to ensure that economic development goes hand in hand with nature conservation. It is the responsibility of the Member States to transpose the directives into their respective national legislation and to put in place appropriate mechanisms to implement the provisions in practice.

Article 6 of the Habitats Directive includes three types of measures:

1. Positive conservation measures for the Special Areas of Conservation (SACs) as foreseen by article 6.1 involving e.g. management plans and statutory, administrative or contractual measures[7],
2. Preventive measures for all sites as foreseen under article 6.2 to avoid the deterioration of natural habitats (as well as significant disturbance of species) and under article 6.3, to assess the effects of new plans and projects,
3. Procedural safeguards, including a derogation and compensation regime, under article 6.4 for authorising plans or project that are likely to have adverse effects on Natura 2000 sites.

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[4] Presidency Conclusions, Göteborg European Council 15 and 16 June 2001
[5] COM (2001) 264 final
[6] Decision No 1600/2002/EC, OJ L 242, 10.9.2002, p.1
[7] For SPAs, obligations of article 4.1 & 4.2 of the birds directive will apply and there are considered as positive measures also.

Article 6 of the "Habitats" Directive 92/43/EEC

1. *For special areas of conservation, Member States shall establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans, and appropriate statutory, administrative or contractual measures which correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the sites.*

2. *Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive.*

3. *Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives....competent authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site....*

4. *If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected....where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety....*

Coastal and estuarine habitats protected under the Habitats Directive cover a total area of more than 45,000 km² of the EU territory (see Table 1, only the marine and intertidal part, excluding dune systems or other related fresh wetlands).

These protected habitats also provide resting areas for birds and seals, spawning areas for fishes, feeding areas for mammals as well as specific plant habitats. Estuarine and coastal ecosystems can also include other protected habitats of Community interest, such as Grey Dunes (habitat code 2130).

Table 1*: Area of coastal and estuarine habitats protected under EU Nature legislation (according to the Natura 2000 Database – November 2009)*

Coastal and estuarine Natura 2000 habitats of relevance to the present document	**Total area in the EU-27 territory (2009)**
Estuaries – habitat code: 1130 (306 sites)	643.704,44 ha
Coastal lagoons*– habitat code: 1150 (644 sites)	503.263,71 ha
Large shallow inlets and bays – habitat code: 1160 (373 sites)	1.250.743,52 ha
Sandbank which are slightly covered by sea water all the time – habitat code: 1110 (517 sites)	2.436.613,35 ha
Mudflats and sand flats not covered by seawater at low tide – habitat code 1140 (422 sites)	809.204,53 ha
Total	5.643.529,55 ha

The following EU environmental directives on environmental assessments are also directly relevant to development plans and projects in estuaries and coastal zones (see chapter 3.3.3):

- Directive 2001/42/EC on the evaluation of the effects of certain plans and programmes on the environment (commonly referred to as the '**SEA' Directive**)[8] The purpose of the SEA Directive 2001/42/EC is to ensure that the environmental consequences of ***certain plans and programmes*** are identified, assessed and taken into account during their preparation and before their adoption.

[8] OJ L 197, 21.7.2001, p. 30–37 – see http://ec.europa.eu/environment/eia/home.htm

- Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment, as amended in 1997 (97/11/EC), 2003 (2003/35/EC) and 2009 (2009/31/EC) – (commonly referred to as the '**EIA' Directive**[9].) While the SEA process operates at the level of public plans and programmes, Environmental Impact Assessments (EIA) operate at the level of ***individual public and private projects***.

Estuaries and coastal water bodies are also of interest under the **Water Framework Directive 2000/60/EC** (WFD). The WFD establishes a framework for the protection of all surface waters (rivers, lakes, transitional and coastal) and groundwater at EU level and aims to achieve a good ecological status (or a good ecological potential for heavily modified water bodies) and a good chemical status by 2015.

Estuaries and coastal waters are identified as transitional or coastal water bodies. According to the WFD their deterioration should be prevented and their aquatic ecosystem status protected and enhanced. There is frequently a geographical overlap between Natura 2000 sites and WFD water bodies in estuarine and coastal ecosystems. Although the principal aim of the WFD and the Nature directives is to protect ecosystems, their objectives, measures and tools are not entirely complementary. Attention should be given to the synergies between the nature Directives and the WFD where they both apply.

Under the Water Framework Directive, a Common Implementation Strategy (CIS) was developed in order to address the challenges in a co-operative and coordinated way and a series of guidance documents have been produced (see annex 1). It is important to remember that Article 4(2) of the WFD states that if the conservation objectives of the Habitats Directive are more stringent than the requirements of the WFD then those of the former will apply. The same is also true of the converse. Detailed information and guidelines on the implementation of the WFD can be found on the following website: http://ec.europa.eu/environment/water/water-framework/index_en.html

The Marine Strategy Framework Directive (MSFD, 2008/56/EC) provides a more comprehensive view and deals also with ecosystem services in marine areas. It establishes a framework for the protection and restoration of marine ecosystems. According to this directive, Member States must take the necessary measures to achieve or maintain a good environmental status (GES) in the marine environment by the year 2020. The geographical scope of the MSFD overlaps with the WFD in coastal waters. The MSFD environmental status only applies in the latter insofar as particular aspects of the environmental status of the marine environment are not already addressed through that Directive (e.g. litter, noise, cetaceans). The MSFD, however, does not apply to transitional waters such as estuaries.

The two more recent directives complement the nature directives by putting increased emphasis on the role of ecosystems. As mentioned above, estuaries are ecosystems with very dynamic characteristics: they are subject to daily and seasonal changes as well as hydro-morphological evolution. Their biodiversity parameters and typical species will also evolve over time. Although concern for biodiversity is a common denominator, it is not difficult to imagine that, while habitats change in response to morphological evolution, some habitats may even disappear or change significantly. Especially in estuaries it is important to recognize the dynamic nature of this environment.

[9] OJ L 156, 25.6.2003, p. 17, OJ L 140, 5.6.2009, p. 114 – see http://ec.europa.eu/environment/eia/home.htm

1.2. The Integrated Maritime Policy and the European Ports Policy

The economic importance of the European coastline was underlined in the Commission's Communication on an Integrated Maritime Policy[10]; Maritime regions account for some 40% of the EU's GDP and population. Shipbuilding and shipping, ports and fisheries remain key maritime activities, but offshore energy and coastal and maritime tourism generate massive revenues. According to the European Maritime Policy, the capacity development of ports and coastal fairway channels must mirror the growth of Europe's domestic and international trade and occur in a way that is compatible with related EU policy objectives, in particular its environmental and competitiveness goals.

The Communication on a European Ports Policy[11] aims at a performant European port system able to cope with the future challenges of European transport needs. One of the objectives of the action plan under this Communication is to increase the carrying capacity of ports in order to allow a further increase of maritime and fluvial transport. There are more than 1200 merchant ports in Europe, comprising key points of modal transfer and of vital economic interest as they handle 90% of Europe's international trade. Even if these figures will fluctuate due to economic ups and downs, the long term trends remain one of continued growth; at the same time waterborne transport features low CO_2 emission rates, compared to other transport modes (mainly road but also railways).

During the consultation phase, prior to the adoption of the Communication on a European Ports Policy, the issue of environmental concerns in ports emerged. Port stakeholders expressed fears about legal uncertainty in relation to the implications for their activities arising from the Birds and Habitats Directives. On the other hand: in order to generate a license for growth, ports are increasingly embracing a more sustainable development approach.

Many ports and navigation channels are located in estuaries and coastal zones that host environmentally sensitive areas with high ecological value. The need to designate Natura 2000 sites in estuaries and coastal zones and the need to increase the carrying capacity of ports in order to meet the European transport needs is proving to be a challenge to many Member States; this has resulted in local disputes and several EU Court of Justice decisions and jurisprudence. However, in response to this challenge some Member States have already developed approaches to facilitate port development in line with the requirements of the Habitats Directive.

In its Communication on a European Ports Policy the Commission recognized the challenges in combining port infrastructures and environmental Directives. Consequently, the Commission services have responded to the request by port industry to provide guidelines on the interpretation of both nature Directives. This constitutes the policy background to the present guidelines, which have the ambition to reconcile the need for port development with EU environmental protection standards.

[10] European Commission, (2007), An Integrated Maritime Policy for the European Union, COM (2007) 575
[11] European Commission, (2007), Communication on European Ports Policy, COM (2007) 616, 18.10.2007

2. ISSUES OF CONCERN

2.1. Pressures on estuaries and coastal zones

Human activities in coastal and estuarine areas include navigation, dredging, aggregate and sand extraction, fisheries, aquaculture, industry (including oil and gas extraction, wind farms development), drainage of sewage and waste water, water extraction (e.g. for power stations and industry), safety (including sea defence and flood protection), recreation including bird watching and hunting, urbanisation, cover for cables, pipes and tunnels, military activities and research activities.

All these activities taken individually or in combination can potentially generate significant effects on the nature conservation objectives of estuaries and coastal zones. Impacts directly related to waterways and port related activities are illustrated below.

1. Dredging operations

Capital and maintenance dredging and the relocation of dredged material affects the hydrodynamic regime and geomorphology of the estuary: Natural sedimentation takes place in estuaries depending on the hydraulic forces in the basin and the amount of sediment available. Sediment is either supplied from erosion in the catchment area or from the marine environment or both. Beyond a certain point, a sort of balance is reached and the estuary begins to release sediment, rather than retain it. Any factor influencing the hydrodynamic regime and/or the geomorphology may modify the balance and the flux of sediments and lead to modifications in the localisation of habitats composing estuarine and coastal ecosystems (e.g. mudflats or sandbanks).

Capital dredging needs special attention because it may reverse the trend of estuarine infilling and affect the equilibrium state of the estuary. This occurs because deepening an estuary may permit a salt wedge intrusion to travel further upstream, increase shoreline wave action, change tidal range and tidal currents, and suspended sediment load and sedimentation. Additionally, the hydrodynamic changes and their effect on sediment erosion, deposition and transport may cause secondary geomorphological changes away from the dredging location, including the potential erosion of mudflats and salt marshes.

Maintenance dredging is the periodic or continuous activity necessary to maintain the navigable depth in an estuary or on the open coast. The effects of maintenance and capital dredging on a site can be similar. The critical difference is that whilst capital dredging imposes the major change, maintenance dredging prevents the system from returning to its original state, albeit in smaller stages. This means that there will be ongoing issues that will need to be addressed if habitats and species are to be maintained at favourable conservation status. Some of these impacts can be rectified by modifying dredging practices and by using sediment feeding techniques, but they are not universally applicable.

There are also circumstances where dredged materials can be put to beneficial uses such as increasing sediment supplies to beaches, although care needs to be taken to avoid smothering of important sub-tidal communities. This illustrates the need for careful assessment of hydrodynamic effects in estuaries and coastal waters. Careful design of dredging and relocation of dredged material is an integral part of sediment management schemes.

2. Maintenance activities

Maintenance activities other than maintenance dredging, such as the maintenance or replacement or installation of navigation marks, piles, lights, vessel traffic schemes and moorings, the extension of slipways and jetties and the maintenance of soft sea walls, flood defences and wave screens may have adverse effects on conservation objectives in estuaries and coastal zones.

3. Commercial shipping operations

Commercial shipping operations within ports can be divided into two broad categories, vessel operation and movements and cargo operations. The movement of ships through estuarine and coastal waters may potentially affect the characteristics of a habitat both through the generation of waves and propeller-induced turbidity in the water column. The effects of vessel movement can either be harmful, e.g. intertidal erosion of estuaries and/or putting sediments back into suspension, or beneficial, e.g. aeration of the water column.

Noise (above and under water) associated with shipping has the potential to cause disturbance to protected marine animals. The anchoring of vessels (outside an anchoring area) may disturb or damage animals and plants on the seabed (e.g. shellfish beds, soft corals, sea grasses). Ship emissions into the air, waste handling and ballast water treatment can have an impact on nearby coastal habitats.

Cargo handling of dry bulk cargos may cause dust emissions and air pollution (nitrogen, sulphur). Handling of liquid bulks may require discharge through pipelines, which provides a potential risk for leaks, emissions and spillages. Accidental release of cargoes into the marine environment may have important environmental effects. The spread of invasive alien species imported via ballast water or otherwise by vessels can also have a negative influence on protected areas. Last but not least vessel movement poses a risk of disasters (oil or cargo spilling).

Operational aspects of commercial shipping (waste handling, ballast water management, air pollution…) are subject to national or international rules and regulations (such as the ballast water treaty of the International Maritime Organization and MARPOL protocols annex 1-6). In addition there is a voluntary port authorities initiative to promote “Green shipping” by developing an Environmental index. This index is focusing mainly on air pollution coming from sea going vessels.

4. Port reclamation and land use

The port itself may have impacts on Natura2000 because it leads to the building of new infrastructures (terminals, rail, pipeline, roads, new industries and large areas for logistic companies) that may affect nearby Natura 2000 sites. In certain areas the available space is insufficient and ports may need to reclaim land from the sea. Land reclamation in Natura 2000, be it on land or on sea, will in most cases, require nature compensation schemes.

5. Industrial complexes

Port areas often include industrial complexes such as refineries, energy plants, dry and wet bulk hubs and container terminals. The cumulative effects of industrial operations, shipping and traffic can lead to adverse ecological effects on nearby Natura 2000 sites. Environmental issues such air quality, noise and waste are regulated by specific legislation and policies which is not, however, covered by the present guidelines. The use of the best available

technologies is often mandatory and can as such limit environmental pressure on protected sites as well.

2.2 Main concerns of the port sector with regard to the implementation of the Birds- and Habitats directives

One of the key issues for port sector development is the capability to plan new projects well ahead and securely. Delays in the planned dates for terminal extension have been experienced in various European ports during recent years. The European Sea Ports Organisation (ESPO) attributes these delays to a number of different causes, ranging from internal politics within the port, environmental objections, investigations into market share implications, funding difficulties, court cases, etc.(ESPO, 2007).

ESPO has already published in 2007 its Code of Practice on the Birds and Habitats Directives (ESPO, 2007), which contains a number of recommendations to port authorities faced with the legal implications of the provisions of the Birds and Habitats Directives in their wider port development areas. The last chapter of the Code of Practice presents a list of topics for which further guidance from the European Commission was invited.

The following are some concerns presented from a port authority point of view when it comes to the development and operation of ports near or in a protected estuarine or coastal zone. With the exception of the issue of cost sharing among relevant stakeholders, most of these concerns are being addressed in the present guidance document.

1. How could a proactive approach and integral planning lead to more legal certainty?
2. How can early agreements between all stakeholders be reached through wide public consultation and involvement of interested parties in project design?
3. How can costs be shared amongst all relevant stakeholders who can benefit from integrating socio-economic development objectives with nature conservation objectives in Natura 2000 areas?
4. How can compensation requirements be avoided through the systematic application of efficient mitigation measures, in a way that negative effects can be avoided beforehand?
5. How can the cooperation between project developers, environmental agencies and NGOs be enhanced with a view to promoting flexible approaches and mutual benefit situations?

Another important issue for port and waterway operators is how to handle maintenance activities such as dredging within or adjacent to Natura 2000 sites. Whereas extensive guidelines in relation to Article 6 of the Habitats Directive already exist for new plans and projects, ongoing activities have so far been less covered. Chapter 3.3.4 will therefore provide further guidance on this issue.

For port developers it is also important to know how much detail is actually necessary to sufficiently assess the potential effects of new plans or projects in order to comply with the requirements of the Birds and Habitats directives. Guidance on how to deal with uncertainties is an important issue in this regard. ESPO produced a checklist that is useful as a self guidance document (se Annex 3).

2.3 Climate change: A particular issue of concern for estuaries and coastal zones

Coastal zones and floodplains are among the most vulnerable areas to climate change as they are vulnerable to sea level rise combined with increased risks of storms, intense rainfall and flash floods leading to widespread damage to built-up areas and infrastructure.

Flood protection measures such as dyke construction, land reclamation and other types of sea defences may lead to the "coastal squeeze" phenomenon whereby less and less space is available for natural coastal processes to accommodate eroding forces or adjust to changes such as sea-level rise. "Coastal squeeze" occurs especially in low-lying and inter-tidal areas, which would naturally adjust to the changes in sea level, storms and tides, but cannot do so due to the construction of inflexible barriers such as roads, dykes, urbanisation, port and industrial infrastructure.

Innovative measures to prevent coastal squeeze should be taken in estuaries and coastal zones. Natural squeeze with similar effects occurs where the coast abuts rising ground and there is nowhere for eroded habitats to be displaced onto because the land is rising.

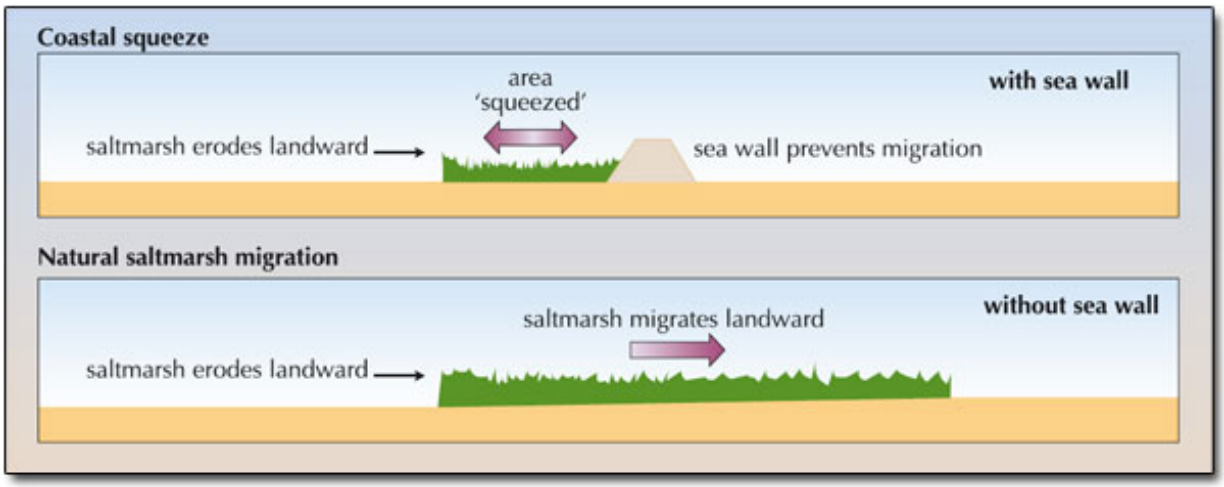

Figure 1: Coastal Squeeze is created when habitat migration (in response to sea-level rise) is prevented by tidal/flood defences (Environment Agency, UK, 2005).

Climate change will heavily affect Europe's natural environment and nearly all sections of society and the economy. Sea-level rise will reduce the sheltering effect of breakwaters and quay walls, but also periods of decreased precipitation in the river catchment areas can lead to lower rates of freshwater run-off and higher sedimentation rates within the estuary. As a result low river water levels during dry summer periods can hamper inner shipping to inland ports as well.

Sea level rise induced by climate change obviously leads to changing tidal characteristics like higher tidal amplitude and resulting current velocities. This may lead to a further increase of tidal pumping, an effect that can further reduce valuable shallow water areas and cause unwanted sedimentation even leading to a loss of biodiversity and last but not least increase the need for dredging. But the main problem with sea level rise is that there may not be sufficient sediment to allow mudflats and sandflats to keep pace with sea level rise. In such cases this is likely to lead to an increase in sub-tidal habitats. There may be a problem in a very small number of European ports from sub-tidal sedimentation but there is a greater problem with possible sediment export and increased erosion because of insufficient accommodation space to allow rollover to take place.

3. GUIDELINES

The present guidelines are intended to provide national competent authorities, port and waterway authorities and operators as well as environmental NGOs with a practical set of recommendations on the implementation of the Birds and Habitats Directives in estuaries and coastal zones with special attention to port development and dredging operations. The following main aspects have been covered: Conservation objectives in dynamic environments, integrated planning, new developments and adaptive strategies. The application of these guidelines should lead to more efficient planning and development approaches and support "fast-track procedures" for port expansion, according to the Communication on strategic goals and recommendations for the EU's maritime transport policy until 2018, COM (2009) 8.

Practice has shown that early cooperation among interested and affected parties is often a prerequisite for successful planning and elimination of delays. Estuaries and coastal zones are very complex and dynamic environments that attract interest from a wide range of sectors. They generally have an exceptionally rich nature conservation and socio-economic interest. This makes the planning of development projects a complex process but one that can nevertheless be carried out in a balanced, cost-effective, timely and integrated manner. A key objective is, provided all parties are aware of the obligations imposed on them under law, the basic understanding of how estuaries function as ecosystems.

3.1. Conservation objectives in dynamic environments

3.1.1. Understanding and managing estuaries and coastal zones as complex and dynamic ecosystems

Before setting conservation objectives in dynamic environments such as estuaries and coastal zones, it is important to understand how such complex ecosystems function, how they evolve "morphologically" and how they may be influenced by anthropological pressures and climate change. The balance between the different components (physical, chemical, biological and hydro morphological) of the estuarine and coastal ecosystems is very complex and can be easily affected by human activities such as port related activities, agriculture or flood alleviation measures. Both ecological and economic values of such ecosystems will have to be maintained in order to satisfy societal needs.

An Ecosystem approach, as outlined in the Marine Strategy Framework Directive[12], is well adapted to the management of complex systems such as estuaries and coastal zones. The ecosystem approach considers the ecosystem as an ecological entity with typical structure, processes and functions that interact with the surrounding environment. The ecosystem approach brings the analysis to a higher spatial level than just the habitats/ water body approach. Climate change will have potential impacts on the biodiversity and hydromorphology of estuarine and coastal areas, as well as on human activities such as port development and operation.

[12] 2008/56/EC (Official Journal of the EU of 25.6.2008): General provisions, article 1.3: ecosystem-based approach to the management of human activities, ensuring that the collective pressure of such activities is kept within levels compatible with the achievement of conservation objectives, good ecological and good environmental status, and that the capacity of estuarine, coastal and marine ecosystems to respond to human-induces changes is not compromised, while enabling the sustainable use of marine goods and (ecosystem) services by present and future generations.

Guidelines for planning and decision-making based on ecosystem knowledge

- The physical processes and morphological evolution of the specific estuaries and coastal zones should be investigated in detail. A best available and sound scientific knowledge on these elements should be established by the competent authorities as a basis for the establishment of nature conservation objectives for such ecosystems.
- Before setting conservation objectives in estuaries and coastal zones designated as Natura 2000 sites, the presence, geographic distribution and actual conservation status of all habitats and species protected under the nature directives, as well as the potential threats to which those elements are exposed, should be established in detail.
- Integrated management plans for estuaries should be established and implemented as an important instrument to conserve and protect critical processes, areas and species whilst providing space for sustainable economic development. Where possible these management plans should be part of the overall river basin management plan.
- Nature conservation objectives and socio-economic development objectives should be considered together for the establishment of integrated management plans for Natura 2000 sites. An ecosystem-approach should be applied which enables the sustainable use of goods and services that fully respects the site's conservation objectives.
- When an estuary or a coastal zone evolves, the presence or absence of species and habitats will also evolve. Therefore, the conservation objectives and measures for Natura 2000 sites should take into account the system-specific dynamics and evolutionary trends. There is also a need to take account of the difference between natural trends and those driven by human influences, namely coastal squeeze and morphological changes imposed by channel deepening.
- Where uncertainties or lack of knowledge on physical, morphological or biological processes still exist, these should be minimized as far as possible by additional research; where uncertainty remains adaptive monitoring programmes should be foreseen. New evidence and scientific information should be fed back into the management plan and where necessary lead to an appropriate adaptation of the management measures and monitoring schemes.
- Possible adaptation measures to climate change should also be considered when developing conservation objectives. In particular, regional sediment unbalance should be addressed. Shortage of sediment may lead to further erosion, e.g. from marshes, Wadden Sea areas (1110, 1130, and 1140), sandbanks, beaches and dunes.
- Proactive and strategic approaches to coastal management should be developed, giving priority to increasing coastal safety and ecosystem resilience and to maintaining a good sediment balance in the coastal and estuarine systems.
- Where possible, nature areas should be expanded proactively rather than reacting to catastrophic or climate change impacts. Dispersal corridors for species should be foreseen as an important adaptation tool.
- Where changes in sedimentation rates lead to loss of important habitats such as shallow waters, adapted sediment management schemes should be considered as an instrument to achieving conservation objectives.

3.1.2. Protecting habitats and species of Community interest

On the North-East Atlantic coast, estuaries are subject to the tide. River estuaries are coastal inlets where, unlike 'large shallow inlets and bays' there is generally a substantial freshwater influence. The mixing of fresh water and seawater and the reduced current flows in the shelter of the estuary lead to deposition of fine sediments, often forming extensive intertidal sand and mud flats. Estuarine ecosystems are characterized by subtidal and intertidal habitats (slikke) including salt marshes (shore). Baltic, Mediterranean and Black sea river mouths are considered as being estuary subtypes with brackish water and nearly no tide.

Estuaries and coastal zones are dynamic systems consisting at the same time of several habitat types and habitats of species. Sand banks (1110[13]), sand flats and mudflats (1140), reefs (1170) and salt marshes (1310 to 1330) may also be a component part of habitat 1130 Estuaries. They also include corridors for migratory species (as fishes) and resting areas for many birds. Estuaries and coastal zones are sometimes related to coastal lagoons (1150*) or to large shallow inlets and bays (1160).

Channels and/or shipping lanes, where present, form an integral part of the habitat type 'Estuaries' in all geographical conditions; they play a role in the hydrological functioning of estuaries and nearby coastal zones, including the circulation of water and the deposition of sediments.

An estuary is generally to be considered as a complex of different habitats. Other adjacent coastal areas must be considered when setting conservation objectives for estuaries or coastal zones. For the definition of habitats, further guidance is provided by the Interpretation Manual of European Union Habitats. The manual was revised in 2007 for some habitats (e.g. marine habitats 1110, 1170 and 1180). Some national guidance documents also exist. However, for the habitat-type estuaries-1130, different definitions/interpretation exist, depending on the Member States.

Several key parameters determine the biological functioning within estuaries and coastal zones. The presence or absence of species (angiosperms, benthic invertebrate fauna, fish fauna, birds and mammals…) depend on the system's behaviour and its ecological food web. They are influenced by physical parameters such as turbidity and salinity. Significant changes in the physical elements of estuaries and coastal zones, such as port and waterway development projects, can possibly affect the survival of specific species in the food chain.

Regarding specific aquatic habitats targeted by the Habitats Directive, the chemical, biological and hydromorphological elements covered by good ecological status according to the Water Framework Directive (WFD) already contribute towards the achievement of the objectives of the nature directives. Some of the typical species of Annex 1 habitats are used as indicators for the assessment of ecological status under the WFD (angiosperms, benthic fauna, fish).

The conservation status of species and habitats protected under the nature directives may not entirely rely on the good ecological quality of water bodies as defined under the WFD, even if this is certainly a key contribution. The local conservation status of species may rely on other specific elements that have to be defined on a case by case basis.

[13] Habitat code according to the Habitats Directive

Additional measures to those foreseen by the WFD but possibly required under the birds or habitats directive could be for example: quiet resting areas for seals or feeding zones on intertidal habitats for otter or for birds at low tide or even the creation of suitable nesting sites for birds. Main challenge should be to look for an approach generating mutual benefits and to harmonize goals, objectives, and measures from both WFD and Natura2000 at an early stage.

Guidelines on the designation Natura 2000 sites and integration with the WFD

- An estuary or coastal zone forms an ecological unit with the surrounding terrestrial and subtidal coastal habitat types. In terms of nature conservation, these different habitat types should not be treated separately, and this reality should be taken into account when defining the site boundaries.
- Navigation channels and/or shipping lanes remain an integral part of designated Natura 2000 sites and should be covered by the management plans.
- Member States and local authorities should coordinate the setting of conservation objectives and the implementation and monitoring of measures under the Nature and Water Framework Directives. Where possible integrated WFD and Natura 2000 management plans should be established.

3.1.3. Setting conservation objectives for the estuarine and coastal habitats

The development of conservation objectives for estuaries and coastal areas is a real challenge as these areas are very complex and dynamic ecosystems. The final responsibility for developing appropriate conservation objectives, priorities and instruments that are adapted to national, regional and local contexts always lies with the Member States.

The following questions may arise in this context:
- How are conservation objectives set at national/ local level?
- How can Natura 2000 management plans follow an ecosystem approach and yet assist in quantifying conservation objectives and establishing conservation measures for habitats and species?
- How can socio-economic objectives be integrated within the Natura 2000 conservation objectives and management plans?

Conservation objectives and conservation measures have to be established both at the national and at the site level. According to Article 2.1 of the Habitats Directive, the aim of the Directive is to contribute towards ensuring bio-diversity through the conservation of natural habitats and of wild fauna and flora in the entire "European territory of the Member States to which the Treaty applies".

According to Article 4.4 of the Habitats Directive, the Member States must designate the sites of Community importance as special areas of conservation, "establishing priorities in the light of the importance of the sites for the maintenance or restoration, at a favourable conservation status, of a natural habitat type in Annex I or a species in Annex II and for the coherence of Natura 2000, and in the light of the threats of degradation or destruction to which those sites are exposed."

According to Article 6.1., Member States must establish conservation measures for each particular special area of conservation. Specific site level conservation objectives take into account the priorities established according to Article 4.4. They will help to determine specific site-related conservation measures.

Conservation objectives at Member state level and site level have a complementary nature because Natura 2000 is a network where each site will have a specific function in the overall coherence of the system. It means that conservation objectives at site level will also contribute to achieving conservation objectives at the national level.

When determining the specific conservation measures at the site level, Article 2.3 of the Habitats Directive allows "*to take account of economic, social and cultural requirements and regional and local characteristics*". This consideration cannot , however, jeopardize the overall objective of the Natura 2000 network which is *'to enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range*". All the sites will have a specific contribution to this objective, but the contributions of all sites are not necessarily equivalent.

Three kinds of obligations can be described for the SACs: proactive conservation measures as foreseen by article 6.1, preventive measures as foreseen by article 6.2 to avoid the deterioration of natural habitats and specific measures for assessing and authorising new plans and projects as foreseen by article 6.3 & 6.4. The conservation objectives for a specific site have to consider all these obligations. The special conservation measures under Article 4 of Birds Directive require equivalent measures to Article 6(1) Habitats Directive for Special Protection Areas. The provisions under Article 6.2, 6.3 and 6.4 also apply to Special Protection Areas under the Birds Directive.

Guidelines for setting conservation objectives

- Once a site of Community importance has been adopted in accordance with the procedure laid down in Article 4(2) of the Habitats Directive, the Member State concerned shall designate that site as a special area of conservation as soon as possible and within six years at most, establishing priorities in the light of the importance of the sites for the maintenance or restoration, at a favourable conservation status, of a natural habitat type in Annex I or a species in Annex II and for the coherence of Natura 2000, and in the light of the threats of degradation or destruction to which those sites are exposed (Article 4.4 of the Habitats Directive).
- When considering conservation objectives, the national competent authorities should consider the dynamic nature of estuaries and coastal waters and the related natural range of fluctuations of protected species and habitats types.
- Consideration of conservation objectives should have full regard to the morphological, chemical and biological processes. The ecological functions of estuaries und coastal waters should be recognised, such as hydrological functions, function as spawning area, nursery or seasonal habitats for migratory species.
- Conservation objectives and measures for a Natura 2000 site should be based on the assessment of the local conservation status of protected habitats and species, the relative importance of the site for the coherence of Natura 2000 and for the maintenance or restoration, at a favourable conservation status of such habitats and species. They should also reflect the threats of degradation or destruction to which the site is exposed. The effects of a plan or project on the integrity of the site must be assessed (art. 6.3) in the light of the site's conservation objectives.
- The conservation status at the date of designation of the site should be used as a reference value for evaluating its deterioration (art. 6.2). In this context, gains made as a result of restorative measures taken or other improvements e.g. bird population increases, due to pressure elsewhere or response to climate change, as well as

losses caused by natural developments or climate change also need consideration. The site's Standard Data Form (SDF) remains an important reference document with this regard.

- Port and waterway authorities should be consulted in the early processes of the development and implementation of conservation measures for those Natura 2000 sites situated near ports or connected with navigational access. When establishing conservation measures for a particular site, economic, social and cultural requirements and regional and local characteristics such as the actual situation in ports and the expected future economic developments should be taken into account while not jeopardizing the contribution of the respective site to achieving the overall objective of the Natura 2000 network and the coherence of the Natura 2000 network.
- Conservation objectives should not be static; on the contrary, they need to be adapted to the actual evolution of the conservation status of species and habitats and to the evolution of other ecological factors in a complex and dynamic environment.
- Monitoring schemes should be established to monitor short and long term evolution, such as morphological dynamics and sediment circulation/ re-distribution. On the basis of measured trends the conservation objectives and management measures can be revisited where and when necessary (applying the principles of adaptive management).

3.2. Integrated planning

3.2.1. Management plans

Management plans are recommended for Natura 2000 sites but not mandatory under the Habitats Directive. They appear to be an appropriate solution to reflect transparent conservation objectives and develop measures to preserve or enhance the natural values in line with the system's processes. A management plan creates opportunities to reconcile sustainable economic development, safety issues, accessibility with nature conservation objectives. It offers the possibility to integrate recurring and routine maintenance activities with conservation objectives.

Management plans also provide an appropriate tool for reconciling recurring and routine activities, such as maintenance dredging, with environmental protection and for engaging port authorities and other stakeholders in the management of Natura 2000 sites.

If maintenance activities are directly connected with the management of the site and as such integrated into a Natura 2000 management plan they will be designed in such a way that they are not likely to have adverse effects on the integrity of the site or compromise its conservation objectives. In this case, such activities can be authorised without appropriate assessment according to Article 6(3) of the Habitats Directive.

The integration of Strategic port plans, WFD river basin management plans and Natura 2000 management plans may offer opportunities for reducing administrative burden, delays and legal uncertainties.

Guidelines for Natura2000 management plans:

- Integrated management plans should be established for Natura 2000 sites, in particular for sites that are adjacent to port operations or other industrial activities.
- Port and waterway authorities should be actively involved in the setting up of management plans for Natura 2000 sites near ports and related waterways.
- Strategic port plans, WFD river basin management plans and Natura 2000 management plans should be coordinated and where possible integrated, so as to fully benefit of potential win-win situations.
- Recurring maintenance activities necessary to facilitate port operations and navigational access should be integrated into the management plans and designed in a way that they are not detrimental to the conservation objectives of the site.

3.2.2. Spatial planning

Spatial planning and integrated management, based on prospective and proactive approaches, can help achieve implementation of conservation measures on the sites and greater legal certainty for port development projects. Integrated planning is a way to look for synergies and complementarity ; it provides a tool to promote social responsibility and sustainable development. It should help to avoid paradoxes, conflicts, and ultimately competition for space. Anticipating frictions will save time and avoid procedural 'battles'.

The European Commission Recommendation 2002/413/EC on Integrated Coastal Zone Management (ICZM) paves the way for better strategic planning. Integrated Coastal Zone Management shall implement an « *environmentally sustainable, economically equitable, socially responsible, and culturally sensitive management of coastal zones, which maintains the integrity of this important resource while considering local traditional activities and customs that do not present a threat to sensitive natural areas and to the maintenance status of the wild species of the coastal fauna and flora* » (Janssen, 2005).

The strategic approach proposed by ICZM emphasizes the protection of the coastal environment (based on an ecosystem approach preserving its integrity and functioning) but also the threat posed by climate change or unsustainable economic activities and employment options. ICZM Recommendation proposes some principles as the "use of a combination of instruments designed to facilitate coherence between sectoral policy objectives and coherence between planning and management".

Similarly, the Marine Strategy Framework Directive 2008/56 (MSFD) requires Member States to adopt by 2016 programmes of measures, which can include "spatial and temporal distribution controls: management measures that influence where and when an activity is allowed to occur" (Annex VI). It thereby provides a regulatory basis for maritime spatial planning for marine waters under the scope of the MSFD.

Integrated spatial planning offers opportunities for anticipating difficulties and adverse environmental impacts and avoiding potential conflicts and delays in project development. Resolving problems at a spatial level means that individual projects will have to face fewer difficulties for consent if the project leaders and the permitting authority can rely on those overarching plans during a decision making process based on a pre- or appropriate assessments that have been carried out at the spatial level.

Spatial and integrated planning is not in contradiction with the concept of fast track procedures proposed by the European Commission[14] as anticipation may solve problems encountered later on. Better planning needs some additional time, but as a consequence, it allows the avoidance of conflicts during the authorization procedures and finally it contributes to eliminating "uncertainties" and causes for delays.

Land-use plans and sectoral plans, including flood risk management plans are of obvious relevance. Some have direct legal effects for the use of land, others only indirect effects. For instance, regional or geographically extensive spatial plans are often not applied directly but form the basis for more detailed plans or serve as a framework for development consents, which then have direct legal effects. Integrated strategic plans are designed to ensure in advance that the baseline conditions exist to undertake integrated projects. Such plans should be submitted to strategic environmental assessments and appropriate assessments in the framework of Article 6.3 of the Habitat Directive.

Land use planning is an integrative process, in which different claims of utilization are subject to an evaluation process. Appropriate assessments according to Article 6(3) of the Habitats Directive critically evaluate the potential impacts of the plan on Natura 2000 sites and identify possible amendments to policies or proposals so that adverse effects on Natura 2000 sites can be avoided. One of the key benefits of the appropriate assessment at plan level is that it requires decisions to be made on the content of the plan that will help avoid possible significant negative effects on Natura 2000 sites and therefore also possible conflicts and delays at the project level. In this sense, the provisions of Article 6 are not only a legal requirement but also a valuable tool in strategic planning.

The resilience of estuarine and coastal ecosystems can be strengthened by proactive nature development measures. Such measures can also be implemented on land owned by port or waterway authorities and which are dedicated to future port or waterway development but not currently in use for such a purpose or land owned by other parties (government, nature conservation organizations or private landowners). Integrated management plans for Natura 2000 estuaries offer a framework for dealing with the management and protection to be applied to such areas.

Finally, it is important to emphasize that involvement of the public and NGOs through a participatory approach is fundamental for a successful planning process. Transparency and a qualitative approach should facilitate public involvement and appropriation, even if this will not necessarily prevent the risk of contentious actions.

Guidelines for spatial planning

- Land use planning should be based on a solid and well substantiated knowledge base that includes all necessary information, both on nature conservation objectives and on ports and port-related development objectives. Economic need for additional capacity on waterways and in ports is a crucial issue that should be clearly demonstrated through middle/long term strategic planning and the use of existing capacities should be optimised (including improved coordination of infrastructures and capacities between different European ports).
- Spatial planning should be carried out at the appropriate level (competent national, regional or local authorities, port authorities…).

[14] European Commission, (2009), Strategic goals and recommendations for the EU's maritime transport policy until 2018, Communication from the Commission to the Council, The European Parliament, the European Economic and Social Committee and the Committee of the Regions, 13 p.

- Integrated spatial planning, submitted to strategic environmental assessment should be applied wherever possible as a way for anticipating difficulties and adverse environmental impacts and avoiding potential conflicts and delays in project development.
- For better integration of nature and port policies, strategic planning should be developed for the most accurate ecological unit (e.g. estuary, river basins,…).
- Spatial planning should make a clear distinction between the strategic level and the project level. Assessments at the strategic plan level can be simplified when the consideration of mere project-related details is avoided.
- Integrated spatial plans should find the right balance between economic and nature conservation objectives. They should be considered as instruments of reconciliation and integration of business and biodiversity goals.
- The national, regional and local competent authorities responsible for Natura 2000 site selection and management should work in close cooperation with the authorities in charge of spatial planning. All relevant stakeholders including port and waterway authorities, terminal operators, environmental NGOs and other public stakeholders should be involved from an early planning phase, with the objective of reconciling social and economic interests with nature conservation objectives in or nearby Natura 2000 sites.
- Port authorities and waterway administrations should be involved in all relevant planning exercises (including Natura 2000 management plans) as strategic planning will help to secure synchronized investments, to solve cross border issues, to identify less damaging alternative solutions and, where justified, imperative reasons of overriding public interest and to promote pro-active nature development.
- If a strategic plan or programme does not contain enough details to undertake a full appropriate assessment according to Article 6(3) of the Habitats Directive, the environmental report prepared for the Strategic Environmental Assessment (SEA) should help pave the way to make, at project level, an appropriate assessment and, if needed, to help prepare a derogation procedure following Article 6.4 of the Habitats Directive. In this case the SEA should already identify projects likely to have significant negative effects on Natura 2000 sites and which would need to be subject to an appropriate Art. 6(3) assessment during the project authorisation process.
- Cumulative effects of projects should best be identified and assessed already during the elaboration of spatial plans.
- Port and waterway authorities should aim for efficient land use by optimising space allocation of port industrial activities and making optimal use of different transport modes such as shipping, inland navigation and rail.
- Port and waterways authorities should consider the possibility of proactive nature development measures aimed at improving the resilience of estuarine ecosystem. The creation of temporary nature areas should be considered where land dedicated to port development is temporarily not used for such purpose. The management and protection of such land should then be dealt with in the context of integrated management plans.

3.2.3. Benefiting from partnerships and public participation

Guidelines for public participation:

- Developers of new projects should pre-assess the effects of the development and consult the competent nature conservation authorities on whether the plan is likely to have significant negative effects on the integrity of Natura 2000 site or its conservation objectives. Planning authorities should start consultation with competent authorities and non-governmental organisations (NGOs) early in the plan-making process.
- Given the complexity of environmental and zoning law, structured consultations and communication processes between various competent authorities, stakeholders and NGOs are recommended. Transport and environment administrations should be in regular communication and cooperate to ensure that the process runs efficiently at both plan and project levels. Port and waterway authorities, operators or users as well as environmental NGOs should be represented in implementation processes, including in transboundary conditions.
- Special consideration needs to be given to plans and projects that will have an impact across national borders. Neighbouring countries should inform each other and cooperate early on in the planning process.

3.3. Project development and maintenance activities

A widespread misunderstanding is that the EU nature directives are based on a “no-unless” approach. This is an interpretation based on the view that environmental policy objectives always take precedence over economic policy objectives. This approach is in contradiction with sustainable development principles, which balances environmental benefits and societal and economic requirements (see article 2.3 of the Habitat Directive). Early integral planning and the development of integrated projects are crucial, as they will promote a “yes, if” approach and pave the way for win-win solutions.

In the field of waterways and ports, the EU TEN-T status or other national priorities should help projects to qualify as being of overriding public interest. Nevertheless, if a plan or a project is being authorised on the basis of imperative reasons of overriding public interest (IROPI), then the Habitats Directive demands a justification of the arguments for IROPI.

Alternative solutions with less or no adverse effects must always be considered in sufficient detail beforehand and a plan or project with significant adverse effects on a Natura 2000 can only be authorised in the absence of such alternative solutions. Permitting procedures may cause legal uncertainty since permits may need to be reviewed, updated or eventually also be terminated. However a correct application of the provisions of the Habitats Directive and the integration of nature conservation objectives from a very early planning phase will reduce uncertainty.

The following guidelines propose recommendations on the concept of integrated projects, the correct use of the appropriate assessments and “significant impact” issues, the use of adaptive management and the assessment of compensation needed as a last resort.

3.3.1. Integrated projects and working with nature

In 2008, PIANC, the world association for waterborne transport infrastructure[15], published a position paper entitled "*Working with Nature*". It calls for an important shift in thinking in the approach to navigation development projects to help deliver mutually beneficial solutions. It promotes a proactive, integrated approach which focuses on:

- achieving the project objectives in an ecosystem context rather than assessing the consequences of a predefined project design;
- identifying mutually beneficial solutions rather than simply minimising ecological harm.
- "*Working with Nature*" thus considers the project objectives firstly from the perspective of the natural system rather than from the perspective of technical design. It is an approach which needs to be applied early in a project when greater flexibility is still possible. A proactive approach such as "*Working with Nature*" should not only be applied at project level but also to the development of strategic plans and programmes (see integrated planning).

If the design concept for a project has progressed before environmental issues are considered, the environmental impact assessment necessarily becomes an exercise of mitigation or damage limitation, potentially resulting in sub-optimal solutions and missed opportunities. "*Working with Nature*" is about more than avoiding or mitigating the environmental impacts of a pre-defined design. Rather, it sets out to identify ways of achieving the project objectives while working with natural processes and delivering environmental protection, restoration or enhancement outcomes.

A similar approach has also been tested within flood alleviation projects in the Netherlands and developed within the Interreg SAND project. It was called "*Integral Design*" and was based on different plans, which are integrated in a way that maximizes the benefits for all whilst delivering the overall objective in a cost-effective and efficient approach.

This general approach can be strongly recommended as it is in coherence with the principle that environmental damage should as a priority be avoided or rectified at the source. It is in line with the Habitats Directive. Appropriate assessment, however, still needs to be applied (article 6.3) if significant effect on a Natura 2000 site cannot be excluded. As a general rule prevention or avoidance measures are to be preferred to compensation.

Guidelines for working with nature:

- Project design should aim to be based on win-win strategies with a view to achieving dual goals of both Natura 2000 conservation objectives and socio-economic objectives.
- Projects should be 'designed' using the 'working with nature' concept. This means that the relevant Natura 2000 conservation objectives should be considered together with the technical project objectives from an early stage in project design and development.
- As a general rule, damage prevention or avoidance measures should always be preferred to compensation measures.

[15] http://www.pianc.org

3.3.2. How to handle 'appropriate assessment' and 'likely significant impact'?

The European Commission has already published guidance documents to assist Member States and operators to understand and apply Article 6 of the Habitats Directive (see annex 1). The present guidelines specify recommendations for waterways and port-related activities.

Ecology and biodiversity depend on local conditions (variability and complexity of abiotic and biotic factors), as well as on evolution in space and time. The words “appropriate” or “significant” are not normative concepts and assessments have to consider local conditions (case-by-case basis). As highlighted by Stojanovic & al. (2006), the “fact that each port is unique in terms of its geography, hydrography and commercial profile means that a “one-size-fits-all” strategy of prescribed environmental management response may not be appropriate even though there are many issues in common”.

The same can be said for the management of estuaries, as ecosystem features are depending among others on the geographical location of the estuary. Therefore a site-specific analysis is always necessary. An "appropriate" assessment means that it is an assessment which takes into account all local factors and conservation objectives. It also has to be based on the best available scientific evidence.

3.3.3. The relationship between SEA, EIA and Appropriate Assessments (AA)

There are many similarities between the procedures for SEA and EIA, and the Appropriate Assessments carried out for plans or projects affecting Natura 2000 sites under the Habitats Directive. But this does not mean they are one and the same, as there are also some important distinctions. Therefore, an SEA or an EIA cannot replace, or be a substitute for, an Appropriate Assessment as neither procedure overrides the other.

They may of course run alongside each other or information pertaining to the Appropriate Assessment may form part of the EIA/SEA process but, in such cases, the Appropriate Assessment should be clearly distinguishable and identifiable in the SEA’s Environmental Report or in the EIA’s Environmental documentation, or should be reported on separately so that its findings can be differentiated from those of the general EIA or SEA.

One of the key distinctions between SEAs/ EIAs and Habitats Directive’s Appropriate Assessments, apart from the fact that they measure different aspects of the natural environment and have different criteria for determining ‘significance’, is how the outcome of the Assessment is followed. In this regard, the assessments under the SEA and EIA lay down essentially procedural requirements and do not establish obligatory environmental standards; on the contrary, the assessment under the Habitats Directive lays down obligations of substance, mainly because it introduces an environmental standard, i.e. the conservation objective of a Natura 2000 site and the need to preserve its integrity.

In other words, if the Appropriate Assessment can not ascertain that the plan or project will not adversely affect the integrity of a Natura 2000 site, the authority cannot agree to the plan or project as it stands unless, in exceptional cases, they invoke special procedures for plans or projects for which there are no less damaging alternative solutions and which are deemed to be of overriding public interest.

The SEAs/ EIAs on the other hand are designed to make the planning authorities fully aware of the environmental implications of the proposed plan or project so that these *are taken into account* in their final decision. The considerations above are summarised in the table in Annex 4.

Guidelines for assessments:

- The significance of the effects of a plan or a project is strongly dependent on the site's characteristics and conservation objectives (which will be outlined in the Standard Data Form, Special Area of Conservation designation acts, conservation priorities, management plan…).
- When a port or related waterway development project is proposed, in a first step a pre-assessment must be carried out. If this pre-assessment demonstrates that there will be no likely significant effect on Natura 2000 sites, the competent authority may remove the obligation of going through an appropriate assessment of its implications for the site in view of the site's conservation objectives, according to Article 6(3) of the Habitats Directive. The assessment of the risk of significant effects must be made on the basis of scientific criteria and in the light inter alia of the characteristics and specific environmental conditions of the site concerned by such a plan or project. Factors such as the extent, the magnitude, the complexity, the probability, the duration, the frequency and the possible reversibility of the impact should be considered. This exercise should be done by the competent authorities.
- If it cannot be excluded, on the basis of objective information, that a project will have a significant effect on a Natura 2000 site, either individually or in combination with other plans or projects then the project is to be subject to a proper Article 6(3) assessment.
- Following a thorough appropriate assessment that includes collecting all relevant data, and subject to the reversibility of actions, minor remaining uncertainties should however not block or restrain projects indefinitely. This needs to be judged on a case by case basis. In case of uncertainty on particular mechanisms of complex estuarine or coastal ecosystems port and waterway developers should assess the nature of the remaining uncertainties and manage them through targeted monitoring and adaptive strategies. Monitoring schemes should be designed in a way that they signal any unexpected developments at a stage where effective corrective measures can still be taken.
- The absence of adverse effects is sometimes related to predicted effects not exceeding specified threshold values; the monitoring of effects relative to the threshold is then important. The threshold values should always be justified on the basis of scientific criteria.
- In the context of an appropriate assessment, information should be provided on the full characteristics of the project or plan which may affect the site, the total range or area that will be affected, the characteristics of other projects or plans which may cause cumulative impacts with the project, any planned or existing nature conservation initiatives likely to affect the status of the site in the future, the relationship (e.g. distances…) between the project or plan and the Natura 2000 site, the requirements (e.g. EIA/SEA) of the authorisation body or agency.
- Information on the protected site should include: the conservation objectives of the Natura 2000 site, the conservation status and other key attributes of Annex I habitats or Annex II species on the site, the physical and chemical characteristics of the site that may be affected by the project, the dynamics of the habitats, species and their

ecology, aspects of the site that are sensitive to change, key structural and functional relationships that create and maintain the site's integrity, other conservation issues relevant to the site, including likely future natural changes taking place and the degree to which those changes need to be managed to deliver the site's conservation objectives.

- Measures to eliminate or reduce significant effects (mitigation) should be foreseen during the project design phase. If necessary, they can be completed during the appropriate assessment (design revision, complementary mitigation). The project can then possibly reach a level where it will have no adverse effects on the integrity of the site.

3.3.4. Compensation schemes and their follow-up

Important notice: The Commission has issued guidelines directly related to the provisions of Article 6.4 of the Habitats Directive which should be read in conjunction with the following section (see Annex 1 for references).

Guidelines for compensation:

- In instances where damaging developments are, in the absence of alternative solutions, to be allowed to proceed there will be a need for compensation measures to fully offset any loss or damage to the site. These should be precisely adapted to the type of impact predicted and should be focused on the coherence of the Natura 2000 network and the particular elements affected at site level. This requires that measures refer to the structural and functional aspects of the site integrity, the related types of habitat and species populations that are affected and the contribution of these elements to the overall coherence of the Natura 2000 network.
- Compensatory measures must be feasible and operational in protecting the overall coherence of the Natura 2000 network. The estimated timescale and any maintenance action required to enhance performance should be specified as early as possible in the project. Once the compensation scheme is agreed, the permits granted and a monitoring programme in place, unforeseen uncertainties should in principle not significantly hamper the core of a plan or project. Such possible new uncertainties should, however, trigger targeted investigations and if necessary extended monitoring and adaptive or corrective measures.
- 'Losses' should be quantified with respect to key habitats and species: according to current knowledge and expert judgement. Compensation measures must be designed on the basis of best scientific knowledge and should accomplish the ecological functions necessary to support the affected species and habitats.
- Environmental damage/ environmental benefit from compensation ratio should be assessed: there is wide acknowledgement that compensation/ damage ratios should be generally well above 1:1. Thus, compensation ratios of 1:1 or below should only be considered when it is demonstrated that such measures will be 100% effective in restoring good structure and functionality within a short period of time.
- Appropriate compensation sites should be selected by considering the following:
  (a) Compensation within the Natura 2000 site if the necessary elements to ensure ecological coherence and network functionality exist within the site.
  (b) Compensation outside the Natura 2000 site if the same contribution to the ecological network is feasible. The new location can be another site designated as

Natura 2000 or a non-designated location. In the latter case, the area has to be designated as a Natura 2000 site itself.

- The compensatory measures must ensure the continuity of the ecological processes essential for maintaining the overall coherence of the Natura 2000 network. The compensation scheme should be 'effective' at the time the negative effects occur on the site concerned. Early implementation is of the essence. The application of specific mitigation measures to overcome possible interim losses may be necessary.
- All necessary provisions, technical, legal or financial, necessary to implement the compensatory measures should be completed before implementation of the plan or project starts, so as to prevent any unforeseen delays that may hinder the effectiveness of the measures.
- Financing, monitoring and reporting: Compensatory measures imply that a sound legal and financial basis for long-term implementation, protection, monitoring and maintenance be secured in advance.

3.3.5. Addressing dredging and maintenance activities

In the case of ports situated in or near estuaries, it is common that the navigational access runs through designated Natura 2000 sites. For most ports dredging is a necessity to keep the waterways and shipping lanes accessible. Potential conflicts with the obligation to preserve the integrity of a Natura 2000 site may come up. Nevertheless, maintenance dredging activities such as continuous or periodic maintenance dredging can usually be designed in a way that they do not adversely affect the integrity of Natura 2000 sites or their conservation objectives.

There are possibilities to deal with dredged materials in an estuary-friendly way. If appropriate sediment placement strategies are applied (e.g. in case of relocation of sediments in a part of an estuary where there is a lack of sediments) dredging operations can even have positive effects on the conservation status of estuaries. Recent knowledge and best practices have shown that a well-thought out relocation plan can help rebuild valuable morphological structures inside estuaries with interesting environmental benefits.

The development of innovative dredging concepts accompanied by strict monitoring schemes can contribute to achieving both navigation objectives and Natura 2000 conservation objectives. In the context of finding appropriate solutions for sustainable maintenance dredging the concept of a sustainable dredging and sediment management scheme is favoured. Such schemes will help avoiding problems, conflicts and delays and, where possible, maximising potential positive effects on the conservation status of estuaries and coastal zones.

The use of sustainable dredging and sediment management practices will further mitigate the potential impact of maintenance operations in the navigation channels. This will not, however, automatically obviate the need for assessment under Article 6(3) of the Habitats Directive. Sustainable dredging strategies should provide the necessary background information for the competent authority to make a judgement on the likelihood of possible adverse effects on a Natura 2000 site.

As a recurring activity, maintenance dredging and relocation of sediments can be used in the context of a sustainable dredging and sediment management scheme for both achieving navigation objectives and contributing to Natura 2000 conservation objectives.

The following six steps are essential in the preparation and implementation of sustainable dredging and sediment management schemes:

- Understanding of the physical setting (morphology, hydrology, salinity, etc) of the area concerned.
- Collecting the necessary information on the dredging operation in order to assess the environmental impact in detail.
- Proceeding with the assessment of the impacts of the dredging operation on the natural environment (on estuarine morphology and hydrodynamics, on sensitive habitats and species, in the short and the long term).
- Selecting optimal practices, describing all possible solutions for mitigating adverse effects and, as a last resort, examining possible compensatory measures that would be undertaken if not all significant adverse effects can be avoided through the application of mitigation measures.
- Implementing a monitoring programme determining the achievement of environmental objectives.
- Ensuring stakeholder participation all along the process in order to avoid complaints and delaying of the procedure.

The assessment of dredging operations and disposal of dredged material in marine environments is regulated under international conventions such as the London Convention, OSPAR, HELCOM, the Barcelona and Bucharest Conventions.

Guidelines for capital dredging

- Capital dredging operations should be designed as part of sustainable dredging and sediment management schemes. Where significant effects on a Natura 2000 site cannot be excluded, also in combination with other plans or projects, they must be subject to an appropriate assessment according to Article 6(3) of the Habitats Directive.
- The application of smart dredging and relocation strategies should help mitigate adverse effects and where possible restore or develop valuable morphological structures and, thus, generate ecological benefits ("working with nature").
- Dredging and sediment relocation strategies should be designed in a way that their potential positive effects are maximized. They should be underpinned by effective monitoring schemes.

Guidelines for recurring maintenance activities including maintenance dredging:

- Recurring maintenance activities should be designed and performed in a way to ensure that they do not adversely affect the integrity of Natura 2000 sites or their conservation objectives. Where possible, their potential positive effects on the conservation status of estuaries and coastal zones should be maximised through the application of sustainable sediment management strategies.
- Recurring maintenance activities where applicable should be included in integrated Natura 2000 management plans, equivalent management plans or river basin management plans to make sure that they are being assessed and reviewed in a structured manner in the overall context of the conservation of the sites.
- Maintenance operations in or near a Natura 2000 site should be specifically designed for each estuary or coastal zone and underpinned by a monitoring scheme that

enables the detection and timely correction of unforeseen adverse effects on conservation objectives.

- If, having regard in particular to the regularity or nature of maintenance operations or the conditions under which they are carried out, such operations can be regarded as constituting a single operation, in particular where they are designed to maintain a navigable channel at a certain depth by means of regular dredging necessary for that purpose, those maintenance works can be considered to be one and the same project for the purposes of the Habitats directive.

  In that case, if such a project has been authorised before the expiry of the time-limit for transposing the directive, it will not be subject to the prior assessment of the implications of the project for the site concerned. Nevertheless, in a Natura 2000 site, the carrying out of maintenance works will be subject to a general obligation of protection under Article 6(2) of the Habitats Directive consisting in avoiding deterioration of natural habitats and species' habitats and significant disturbance that affects the species for which the site has been designated[16].

- Maintenance operations, at the time of each intervention in the navigable channel, may sometimes need to be regarded as constituting distinct projects for example because of changing techniques, conditions or regularity under which they are carried out. In such a case each of those projects must, to the extent that they are likely to have a significant effect on the site concerned, undergo an assessment of their implications pursuant to Article 6(3) of the Habitats Directive.

- As the provisions of Article 6(2) always remain applicable, the Member States should review whether ongoing operations are likely to give rise to deterioration of habitats, or habitats of species and, where necessary, take appropriate steps to avoid such deterioration.

3.4. Dealing with uncertainties: adaptive management

In carrying out appropriate assessments for plans or projects in the sense of Article 6(3) of the Habitats Directive, it may be necessary to take recourse to the precautionary principle. The focus of the assessment should be on objectively demonstrating, with supporting evidence, including undertaking the necessary studies, and based on best available scientific knowledge, that there will be no adverse effects on the integrity of the Natura 2000 site. However adaptive management also helps to address situations when, because of science limits or uncertainty about the functioning of complex and dynamic ecosystems, it is not possible for the competent authorities to fully ascertain the absence of adverse effects.

When the absence of significant adverse effects of a plan or a project on a Natura 2000 site cannot be ascertained, the derogation scheme under article 6.4 of the Habitats Directive foresees that the plan or project can only be authorised in the absence of alternative solutions, if the plan or project is justified by imperative reasons of overriding public interest and if the necessary compensatory measures are undertaken to protect the overall coherence of the Natura 2000 network. If a plan or project falls under these provisions (which is likely for most port development projects), then it is essential that the different aspects are clarified at a very early stage in the plan or project development, as they are key elements for its design, financing, and, last but not least, permitting procedure.

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[16] See also judgement of the Court of Justice of the European Union of 14 January 2010 in Case C-226/08 (Stadt Papenburg v Bundesrepublik Deutschland).

An adaptive approach for the implementation of a plan or project or a compensation scheme may be particularly useful to address cases where, due to uncertainty associated with different contributory factors (location, confidence, unexpected delays), it is impossible to define all the effects of the plan or project or of a compensation scheme in sufficient details and if such uncertainty cannot be factored in through increased ratios. In such a situation, a rigorous monitoring scheme and a pre-defined validated package of appropriated corrective measures must be foreseen. Such measures must allow to adjust mitigation and/or compensatory measures to the reality of the impacts and by that way, make sure that the initially unforeseen adverse effects are being neutralized.

Extensive guidance on the concept of imperative reasons of overriding public interest and on how to examine alternative solutions has already been published in existing guidance documents (see annex 1).

Guidelines for adaptive management:

- If significant negative impacts cannot be avoided even with mitigation measures, the decision to authorise the project is ultimately driven by the existence of imperative reasons of overriding public interest and the absence of less damaging alternative solutions according to the provisions of Article 6(4) of the Habitats Directive.
- In case of any remaining scientific uncertainty with regard to the effects of mitigation or compensatory measures, the measures must include a pre-defined and validated scheme to monitor the actual impacts and a framework, such as a Natura 2000 management plan, integral plan or a programme of measures, to adapt mitigation and compensation measures to the actual impacts.

Guidelines for considering alternative solutions

- Where negative effects are predicted, a range of alternative solutions of achieving the objectives of the plan or project should be identified and these alternatives should be assessed against their likely impact upon the conservation objectives of Natura 2000 sites.
- The competent authorities should not limit their consideration of alternative solutions to those suggested by the project or plan proponents. It is the competent authority's responsibility to consider alternative solutions.
- When assessing alternative solutions all relevant agencies and other bodies should be consulted. Detailed information on the alternative solutions and their impact on affected Natura 2000 site should be provided with indication of sources. The precautionary principle should be applied when assessing alternatives.

Annex 1: European Commission Communications and guidance documents

EC guidance documents related to the Birds and Habitats Directives

- European Commission, (2000), Managing Natura 2000 sites: the provisions of Articles 6 of the habitats directive 92/43/EEC. Luxembourg: Office for official publications of the European Communities.

  http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf

- European Commission, (2002), Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of articles 6(3) and (4) of the Habitats Directive 92/43/EEC. Luxembourg: Office for official publications of the European Communities. http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf

- European Commission (2007), Guidance document on article 6(4) of the 'Habitats Directive'92/43/EEC. Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the Commission.

  http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance_art6_4_en.pdf

- European Commission (2007), Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC, 87 pp. http://circa.europa.eu/Public/irc/env/species_protection/library?l=/commission_guidance/english/final-completepdf/_EN_1.0_&a=d

Main EC guidance documents related to the Water Framework Directive

- European Commission, (2003), Common implementation strategy for the water framework directive (2000/60/EC), Transitional and coastal waters-Typology, Reference conditions and classification systems, Guidance Document No 5, Luxembourg: Office for official publications of the European Communities, 116 pp.

  http://circa.europa.eu/Public/irc/env/wfd/library?l=/framework_directive/guidance_documents&vm=detailed&sb=Title

- European Commission, (2003), Common implementation strategy for the water framework directive (2000/60/EC), Identification and Designation of Heavily Modified and Artificial Water Bodies, Guidance Document No 4, Luxembourg: Office for official publications of the European Communities, pp.14.

  http://circa.europa.eu/Public/irc/env/wfd/library?l=/framework_directive/guidance_documents&vm=detailed&sb=Title

- European Commission (2006), Common Implementation Strategy for the Water Framework Directive. Exemptions to the environmental objectives under the Water Framework Directive allowed for new modifications or new sustainable development activities (WFD Article 4.7), policy paper.

  http://circa.europa.eu/Public/irc/env/wfd/library?l=/framework_directive/thematic_documents/environmental_objectives&vm=detailed&sb=Title

- European Commission (2006), WFD and Hydro-morphological pressures: Focus on hydropower, navigation and flood defence activities Recommendations for better policy integration, Policy Paper, 44pp.

  http://circa.europa.eu/Public/irc/env/wfd/library?l=/framework_directive/thematic_documents/hydromorphology&vm=detailed&sb=Title

- European Commission (2006), WFD and Hydro-morphological pressures, Good practice in managing the ecological impacts of hydropower schemes; flood protection works; and works designed to facilitate navigation under the Water Framework Directive, 68 pp.

  http://circa.europa.eu/Public/irc/env/wfd/library?l=/framework_directive/thematic_documents/hydromorphology&vm=detailed&sb=Title

EC Policy documents related to maritime and ports policies

- European Commission, (2006) Towards a future Maritime Policy for the Union: A European vision for the oceans and seas, Green Paper, 49pp. COM (2006) 27

  http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2006:0275:FIN:EN:HTML

- European Commission, (2006), Motorways of the Sea: Shifting freight off Europe's roads, Luxembourg: Office for Official Publications of the European Communities, 6 pp.
  http://ec.europa.eu/transport/intermodality/motorways_sea/doc/2006_motorways_sea_brochure_en.pdf

- European Commission, (2007), An Integrated Maritime Policy for the European Union, 17 pp. COM (2007) 575

  http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0575:FIN:EN:PDF

- European Commission, (2007), Communication on European Ports Policy, 16 pp. COM (2007) 616.

  http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0616:FIN:EN:PDF

- European Commission, (2009), Strategic goals and recommendations for the EU's maritime transport policy until 2018, Communication from the Commission to the Council, The European Parliament, the European Economic and Social Committee and the Committee of the Regions, DG Transport and Energy, 19 p.

  http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0008:FIN:EN:PDF

EC guidance documents related to ICZM and coastal areas

- European Commission, (2002), Recommendation concerning the implementation of integrated coastal zone management (2002/413/EC).

  http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:148:0024:0027:EN:PDF

- European Commission, (2004b), Living with coastal erosion in Europe-Sediment and Space for Sustainability, EUrosion, Luxembourg: Office for official publications of the European Communities, 44 pp. http://www.eurosion.org/project/eurosion_en.pdf

Other EC guidance documents

- European Commission, (2004), Development of a Guidance Document on Strategic Environmental Assessment (SEA) and Coastal Erosion, Luxembourg: Office for official publications of the European Communities, 72 pp.

  http://ec.europa.eu/environment/iczm/pdf/coastal_erosion_fin_rep.pdf

- European Commission, (2006), Halting the loss of biodiversity by 2010-And beyond, sustaining ecosystem services for human well-being, Luxembourg: Office for official publications of the European Communities, 15 pp. COM (2006) 216.

  http://eur-lex.europa.eu/LexUriServ/site/en/com/2006/com2006_0216en01.pdf

- European Commission, (2007), Adapting to climate change in Europe-options for EU Action, Green Paper, 27 pp. COM (2007) 354.

  http://eur-lex.europa.eu/LexUriServ/site/en/com/2007/com2007_0354en01.pdf

- European Commission, (2007), Agenda for a competitive and sustainable European tourism, Communication from the Commission, COM (2007) 621final.

  http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52007DC0621:en:HTML

- European Commission, (2010), Europe, the World's No 1 tourist destination – a new political framework for tourism in Europe, Communication from the Commission, COM (2010) 352 final.

  http://ec.europa.eu/enterprise/sectors/tourism/files/communications/communication2010_en.pdf

Annex 2: Selected private initiatives involving the port sector

1. Ecoports (see www.ecoports.com)
Ecoports is a research and development project launched in 2002 and initially co-funded by the European Commission and 12 ports and port organisations. The main goal of Ecoports was to harmonise the environmental management approach of port administrations in Europe, through the establishment of an environmental management system as well as the exchange of experiences and the implementation of good practices in respect of port-related environmental issues.

2. ESPO, Environmental Codes of Practice (see www.espo.be)
In 1994, the European Sea Ports Organisation (ESPO) published its first European Environmental Code of Practice, which was intended to be an expression of the collective commitment of the port administrations to environmental improvement. It therefore made a series of recommendations on the integration of environmental protection policies into all aspects of their operations. In 2002, ESPO carried out a survey on the impact of the Birds and Habitats Directives on port development. The main findings and recommendations were published in 2007 in the ESPO Code of Practice on the Birds and Habitats Directives.

3. Paralia Nature (see www.imiparalianature.org)
The Paralia Nature project was set up in December 2000 as an informal platform for the discussion of the Habitats Directive and related issues and projects. It is intended to bring about a broad multidisciplinary cooperation between governments, ports, universities, NGOs and knowledge centres in terms of exchanging experiences and information.

4. NEW! Delta project (Interreg IIIB - North West Europe, see www.newdelta.org)
The NEW! Delta project, which was launched in July 2004, also focused on the implementation of the Birds and Habitats Directives. The project brought together 10 partners from 4 countries in North-West Europe (England, France, Belgium and The Netherlands) including port authorities, regional administrations and research institutions.

5. SedNet (5th RTD Framework Programme, see www.sednet.org)
The Sediment Network (SedNet) is a European network, whose purpose is to incorporate sediment-related issues and knowledge into European strategies to support environmental goals and to develop new tools for sediment management.

6.TIDE (Interreg IV B North Sea Programme,see www.tide-project.eu/)
The Interreg project TIDE was set up in September 2009. It aims at the integrated management of estuaries serving as shipping channels to important sea ports with strong tidal influence and considerable sediment transport rates. A partnership of port authorities, environmental agencies and Science from the Elbe, Scheldt, Humber and Weser estuaries will exchange experience and develop tools and pilot measures for an integrated estuary management.

Annex 3: ESPO checklist on good practice for balancing Natura2000 with port and waterway development and operations (December 2009)

This checklist can be seen as an example that Member States may consider to adopt in order to provide guidance and legal certainty to the activities of port and waterway developers and operators.

Spatial and integrated planning

- Existing Port and waterway activities are thoroughly assessed, considered and weighed within all relevant levels of spatial planning.
- New developments and future growth of existing ports and waterways are an integral part of the relevant spatial planning processes.
- Port and waterways activities are thoroughly considered and weighed within a balanced and integrated Natura 2000 management plan.

Planning of new port and waterway projects

- Sustainable port development is a key element of a license for growth of port related activities (optimising port-industrial use and space, improving operation of scale, efficient use of transport modes).
- Effects of sea going shipping activities in or nearby ports are subject to international regulation schemes and treaties (UNCLOS, IMO, MARPOL). Sustainable shipping is promoted through voluntary schemes (e.g. Environmental Ship Index).
- Shareholders´, public and stakeholders' opinions are considered from the beginning using a well defined stakeholder process. Agreements on all relevant issues have been reached as far as possible using the best available scientific knowledge.
- If a significant effect can not be excluded in a pre-assessment, then the further steps of Art. 6 of the HD are followed (full assessment, alternatives, mitigation, compensation - see ESPO Code of Conduct and specific EU-guidelines).
- Competent authority shall approve and underpin the results of the stakeholder process and the port development assessments and incorporate and secure those (including decisions made during the process) in the relevant integrated plans.

Maintenance dredging

- A maintenance dredging strategy has been set up taking into account hydro-morphological and ecological aspects.
- Based on latest information and a feedback-process involving all relevant stakeholders, dredging activities are – in compliance with economical and legal requirements - aiming to achieve the least impact on Natura 2000 conservation objectives possible.
- A sustainable maintenance dredging strategy or scheme is part of an integral management plan. Based on general principles in compliance with conservation objectives, dredging is flexible according to the requirements of a dynamic tidally influenced estuarine, river or costal system.
- Dredging activities have been optimized according to the following order:
  - Technical feasibility, availability of dredgers

- Safety, nautical requirements, navigability
- Legally binding ecological requirements (BHD, WFD, etc.)
- Administrative regulations (e.g. management plans, site specific objectives)
- Full integration of long-term comprehensive hydro morphologic, sediment-related and ecological criteria
- short-term and/or local criteria
- cost-effectiveness
- other non-binding aspects such as agreements with stakeholders

Natura 2000 site management and maintenance measures

- The aim should be to meet feasible conservation objectives for sites in balance with long term ports and waterways development.
- Port and waterways authorities should be actively involved in the setting up of management plans from the start.
- In dealing with uncertainties (ecosystem knowledge, cause-effect relationship), research and monitoring schemes should be included as part of the management plan.

Annex 4: Comparison of procedures under AA, EIA and SEA

	AA	EIA	SEA
Which types of developments are targeted?	Any **plan** or **project** which - either individually or in combination with other plans/projects - is likely to have a significant effect on a Natura 2000 site (excluding plans or projects directly connected to the management of the site for conservation).	All **projects** listed in Annex I. For projects listed in Annex II the need for an EIA shall be determined on a case by case basis and depending on thresholds or criteria set by Member states (taking into account criteria in Annex III).	Any **Plans** and **Programmes** which are (a) prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and which set the framework for future development consent of projects listed in Annexes I and II to Directive 85/337/EEC, or (b) which, in view of the likely effect on sites, have been determined to require an assessment pursuant to Article 6 or 7 of Directive 92/43/EEC.
Which impacts need to be assessed relevant to nature?	The Assessment should be made in view of the site's conservation objectives (which relate to the species/ habitat types ***for which the site was designated.***) The impacts should be assessed to determine whether they will not adversely affect the integrity of the site concerned, or otherwise.	Direct and indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative significant effects on ….'fauna and flora'.	Likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.
Who carries out the Assessment?	It is the responsibility of the competent authority to ensure that the AA is carried out. In that context the developer may be required to carry out all necessary studies and to provide all necessary information to the competent authority in order to enable the latter to take a fully informed decision. In so doing the competent authority may also collect relevant information from other sources as	The developer.	The competent planning authority.

	appropriate.		
Are the public/ Other authorities consulted?	Not obligatory but encouraged (‘if appropriate’).	Compulsory consultation to be done before adoption of the development proposal. Member States shall take the necessary measures to ensure that the authorities likely to be concerned by the project by reason of their specific environmental responsibilities are given an opportunity to express their opinion on the request for development consent. Ditto for the public	Compulsory –consultation to be done before adoption of the plan or programme. The authorities and the public shall be given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan or programme and the accompanying environmental report before the adoption of the plan or programme or its submission to the legislative procedure. Member States must designate the authorities to be consulted which, by reason of their specific environmental responsibilities, are likely to be concerned.
How binding are the outcomes ?	Binding. The competent authorities can agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site.	The results of consultations and the information gathered as part of the EIA ***must be taken into consideration*** in the development consent procedure.	The environmental report, as well as the opinions expressed ***shall be taken into account*** during the preparation of the plan or programme and before its adoption or submission to the legislative procedure;

GLOSSARY

Alternative solutions: Different ways of achieving the objectives of a plan or project. The Commission services suggest that 'they could involve alternative locations, different scales or designs of development, or alternative processes (EC guidance on art. 6 (3) and (4), 2001).

Appropriate Assessment (AA): The process under Article 6(3) of the Habitats Directive by which the potential effects of a plan or project upon a Natura 2000 site are assessed in view of the site's conservation objectives in order to ascertain whether the plan or project will not adversely affect the integrity of the site.

Compensatory measures: A requirement set out in Article 6(4) where damage to a European site has been justified in the absence of alternatives and for imperative reasons of overriding public interest (IROPI). Compensatory measures must be designed to protect the overall coherence of the Natura 2000 network. This normally entails the creation of appropriate habitat as close as possible to where the damage will occur and fully functioning before the damage occurs.

Cumulative impacts: Impacts that accumulate over space and time from multiple plans/projects.

Deterioration: physical degradation affecting a habitat, or a breeding site or resting place of a species. In contrast to destruction, such degradation may occur slowly and gradually reduce the functionality of the site in terms of quality or quantity and might over a certain period of time lead to its complete loss.

Disturbance: A temporary or permanent change in environmental conditions (e.g. by noise, source of light) that may have a negative effect on a natural habitat or a species. Disturbance may be detrimental for a protected species e.g. by reducing survival chances, breeding success or reproductive ability and may give rise to additional indirect effects (e.g. increased competition for food resources).

Favourable Conservation Status: The conservation status of a natural habitat will be taken as "favourable" when: its natural range and areas it covers within that range are stable or increasing; the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and the conservation status of its typical species is favourable (Article 1.e of the Habitats Directive).

The conservation status of a species will be taken as "favourable" when: viable population is maintained on a long-term basis; the natural range of the species is neither being reduced nor is likely to be reduced in the future; and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Habitat of Community Interest: a natural habitat type in Annex I of the Habitats Directive.

Imperative Reasons of Overriding Public Interest (IROPI): A requirement set out in Article 6(4) which, in limited circumstances, permits a plan or project to go ahead even after an AA has failed to ascertain that the integrity of a Natura 2000 site will not be adversely affected.

Mitigation: Measures aimed at minimising or even cancelling the negative impact of a plan or project, during or after its completion.

Monitoring: Collection and analysis of repeated observations or measurements to evaluate changes in condition and progress toward meeting a management objective.

Natura 2000 site: sites designated to form the Natura 2000 network, which include Special Protection Areas (SPA) and Sites of Community Importance (SCI) approved by the European Commission and declared as Special Areas of Conservation (SAC) by the Member States.

Offset: Biodiversity offsets are conservation actions intended to compensate for the residual, unavoidable harm to biodiversity caused by development projects, so as to aspire to no net loss of biodiversity.

Precautionary principle: where scientific evidence is insufficient, inconclusive or uncertain and there are indications through preliminary objective scientific evaluation that there are reasonable grounds for concern that the potentially dangerous effects on the environment, human, animal or plant health may be inconsistent with the chosen level of protection, lack of scientific knowledge shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation (Rio Declaration, 1992 & EC, 2000).

Qualifying Interest: a natural habitat type listed in Annex I or a species listed in Annex II of the Habitats Directive, a species listed in Annex I of the Birds Directive or regularly occurring migratory species not listed in Annex I, for which a Natura 2000 is designated.

Site of Community Importance (SCI): it is defined in the Habitats Directive (92/43/EEC) as a site which, in the biogeographical region or regions to which it belongs, contributes significantly to the maintenance or restoration at a favourable conservation status of a natural habitat type in Annex I or of a species in Annex II and may also contribute significantly to the coherence of Natura 2000, and/or to the maintenance of biological diversity within the biogeographical region or regions concerned. SCIs are proposed to the Commission by the Member States and once approved, they must be designated as Special Areas of Conservation (SACs) by the Member States.

Special Area of Conservation (SAC): site of Community importance designated by the Member States through a statutory, administrative and/or contractual act where the necessary conservation measures are applied for the maintenance or restoration, at a favourable conservation status, of the natural habitats and/or the populations of the species for which the site is designated.

Special Protection Area (SPA): Protected area designated in accordance with the Birds Directive for species listed on Annex I of the Directive and/or regularly occurring migratory species, and included in the Natura 2000 network.

Species of Community Interest: a species listed in in Annex II and/or Annex IV or V of the Habitats Directive.

Stakeholders: People or organisations that will be affected by, or will influence a programme, project or action.

Surveillance: An extended programme of surveys systematically undertaken to provide a series of observations to ascertain the variability that might be encountered over time.

nature

EUROPEAN COMMISSION

environment