12. INTEGRATING NATURE CONSERVATION WITH SUSTAINABLE DEVELOPMENT

316. One of the objectives of the Pilot was to assess how the framework for marine nature conservation could contribute to sustainable development in the marine environment. In particular, there was a need to discuss with key stakeholders, how nature conservation objectives and other sectoral objectives could be aligned.

317. During the summer of 2003, the Pilot undertook a wide-ranging consultation on its initial ideas on conservation objectives and invited comments on the approach taken and on how the conservation objectives proposed related to the objectives of the various other marine sectors. This consultation identified a range of important issues which were common to nature conservation and various other sectors, and this information was used to help in the further development of the conservation objectives.

318. In addition to the consultation on conservation objectives, the Pilot undertook similar consultations with respect to the issues of legislation, enforcement and governance during the summer and autumn of 2003. These consultations were followed up by a number of meetings to consider issues of particular relevance to individual sectors.

Comparing sectoral environmental objectives with the conservation objectives

319. From the consultations and discussions held with the range of marine sectors, it has been possible to:

    i. collate a set of broad objectives for the various marine sectors which relate to the environment;

    ii. identify the dependency of these sector objectives upon the services provided by the marine ecosystem;

    iii. consider the relationship between these sector objectives and the conservation objectives.

320. For most sectors, there appears to be no single set of agreed objectives. Consequently, the sectoral objectives used in the assessment have been accessed from a variety of sources. The presumption has been made that these sources represent the objectives of the sectors sufficiently well for the purpose of this assessment. The results of the assessment are presented in Table 9 which also references the sources from which the information has been obtained.

Table 9: Sectoral objectives

Sector objectives for the environment relevant to the proposed conservation objectives	Dependency of these sector objectives upon services provided by the marine ecosystem	Interaction of these sector objectives with the proposed conservation objectives
Tourism and recreation[1]		
Recreational leisure boating and the development needed to support it should be carried out in harmony with the environment and allow its qualities to be enjoyed by future generations. To support appropriate designations and resist those which would unnecessarily limit or prohibit recreational use of the coast.	Recreational leisure boating requires a clean and healthy marine environment to prosper and be sustainable. Conservation designations aimed at protecting marine ecology and wildlife habitats can play an important role in this. More effective consultation is required with users to ensure that this is achieved.	There should be a high level of common interest in integrating sectoral objectives for the environment with the proposed conservation objectives. The Pilot has trialled the identification of nationally-important marine areas. Where a need is identified to afford such areas an increased level of protection, this should involve participation of affected stakeholders.
To support government initiatives to improve water quality.	People engaging in water contact sports need protection from the risk of illness caused by viruses and other pathogens released into coastal waters and inland waters. Other elements of water quality also need to be addressed.	The Pilot recognises the application of the Water Framework Directive to the seawards limits agreed, and recommends the application of appropriate principles and measures derived from the Water Framework Directive out to jurisdictional limits.
To ensure boating activities are environmentally sound.	Encourage boat users to make sure that their activities do not harm vulnerable habitats or other marine environmental interests.	There should be a high level of common interest in integrating sectoral objectives for the environment with the proposed conservation objectives.
To minimise the adverse impacts of tourism through effective visitor management and the promotion of environmental good practice by tour operators[2].	The coastline and adjoining sea areas have a particularly high conservation value whilst also providing an economic resource for fishing and tourism and leisure activity.	There should be a high level of common interest in integrating sectoral objectives for the environment with the proposed conservation objectives.
Oil & gas[3]		
To achieve continual improvement in the industry's offshore environmental performance and to develop continually our knowledge of the environmental impact of our operations.	The industry requires access to hydrocarbon and gas fields for prospecting, exploration and production. The industry also needs to construct infrastructure including pipelines. Access to fields and to install infrastructure is dependent upon the ability of the industry to demonstrate that it achieves high levels of environmental performance and minimises the impacts of its operations on the environment.	There should be a high level of common interest in integrating sectoral objectives for the environment with the proposed conservation objectives. The industry is subject to strong environmental protection measures and has a high level of compliance.

[1] Objectives from Draft Royal Yachting Association Planning and Environmental Strategy; British Marine Federation (*pers comm*, Justine Cooper)
[2] Objectives from Wales Tourist Board and Wales Local Government Association Joint Response to the European Commission consultation: Basic orientations for the sustainability of European tourism 31 July 2003
[3] From: The UK Offshore Oil and Gas Industry: Strategy for its Contribution to Sustainable Development 2001.

Table 9 continued

Ports & shipping[4]		
To achieve cleaner seas through MARPOL provision which is compatible with the operational needs of ports and ships.	Shipping requires appropriate access to ports, safe navigation channels and routes, and the sea. Shipping has the potential to impact significantly on environmental services utilised by others. It has a particularly important responsibility to avoid the transfer of non-indigenous organisms by ballast water and sediments, which is one of the greatest threats to biodiversity. Shipping operations also have a need to minimise the risks of chronic or acute pollution from oil and of air pollution. Marine litter, including that originating from vessels, presents a threat to the marine environment and to its recreational and tourism use.	Effective and timely implementation of this sectoral objective is crucial to delivery of the conservation objectives for the physical and chemical properties, for non–native species and for protection of biodiversity.
To promote dredging and disposal methods which are sympathetic to local coastal and estuarial conditions.	There is increasing emphasis on working with rather than against natural coastal processes. The industry is required to consider potential beneficial uses of dredge spoil in applications for disposal licences. Good practice guidance has been developed for dredging and disposal operations.	The sectoral objective is particularly relevant to the objectives set for physical and chemical properties and biodiversity, as well as objectives set to protect habitat availability.
Renewable energy[5]		
To use strategic environmental assessment to guide the pattern and scale of development.	Development of offshore wind resources is fundamentally constrained by environmental factors, e.g. access to areas of seabed within suitable water depths. The industry requires access to sufficient suitable areas of seabed and water column to make an appropriate contribution to meeting the UK's target.	Potential benefits for conservation might occur if the location of wind farms provided effective protection for surrounding areas of seabed which require a high level of protection for conservation (including fisheries) purposes. It is unclear whether this will be an incidental result of the current site selection process; it does not appear to be a material site selection feature, or strategic consideration, currently.
To ensure proper evaluation of impacts through strategic planning and consenting processes, and to provide for monitoring, mitigation and control of individual and cumulative impacts.	The offshore wind industry is a new industry and potential impacts of it upon the marine ecosystem, and the services which the ecosystem provides, are understood with different levels of confidence. Development of windfarm sites is likely to depend upon the industry being able to demonstrate that environmental impacts are within acceptable limits.	In view of the potential extent of development of the offshore windfarm industry, it would be particularly important to ensure that there is a close integration of industry objectives and the objectives proposed by the Pilot. It is also necessary to ensure that interactions between the windfarm industry and other sectors do not constrain the ability to achieve the conservation objective, for example by displacement of activities onto more environmentally sensitive areas.

[4] From: British Ports Association's Aims and Policies

[5] Objectives from UK Government renewable energy target; DTI (2002) Future Offshore

Table 9 continued

Defence[6]		
MOD aspires to maintain, protect and enhance the nature conservation value of the Defence Estate.	In the marine environment the main requirement of the MOD is for dockyard and berthing facilities, naval exercise areas, low flying areas and for firing and bombing ranges.	The set of conservation objectives proposed by the Pilot provide guidance on what needs to be achieved on marine Defence Estate.
Ensure that integrated management plans, supported as necessary by environmental steering groups, are used to implement our specific objectives.	Uses are site dependent.	The integrated management plans would provide an appropriate mechanism for the integration of conservation objectives into spatial planning and management at the local scale.
Use of private and public land will seek to avoid disruption to nature conservation, cultural heritage, and the landscape, and will take account of the potential competing interests of other non-military users.	The main uses of the marine environment by the MOD require access to specific areas (open or restricted to the public) permanently or temporarily.	The conservation objectives will inform this sectoral objective.
Mariculture[7]		
To identify the species and methods best suited to particular areas.	Mariculture is the sector with one of the highest dependencies upon a naturally functioning, productive and high quality marine environment. It relies strongly upon sustaining the physical and chemical properties and avoiding significant disturbance to the foodweb and biodiversity. Significant disturbance to any of these has potential for detrimental impact upon the mariculture operations. Site selection is important.	There should be a high level of common interest in integrating sectoral objectives for the environment with the proposed conservation objectives. The conservation objectives should inform consideration of potential areas for mariculture, by identifying their conservation requirements.
To identify what scope exists for the expansion of shellfish cultivation. To identify potential ecosystem effects from increasing the biomass of shellfish in certain areas. To find out if specific sites have a finite carrying capacity in terms of the ability of an area's natural productivity to support growth.	Increasing the scale of mariculture operations increases the risk of significant disturbance to the ecosystem and impact upon the mariculture operations.	The Pilot proposes conservation objectives which aim to maintain or, where necessary, recover ecosystem components which may be affected by activities such as mariculture. These include objectives for trophic status, trophic level balance, water bodies and biodiversity. There should be a high level of common interest in minimising ecosystem effects.
Marine aggregates[8]		
The Government wishes to see the continued use of marine dredged sand and gravel to the extent that this remains consistent with the principles of sustainable development. To achieve this, the dredging industry requires sufficient access to suitable long-term resources to meet its varied and fluctuating markets and to provide it with sufficient confidence to invest in new ships and wharves.	The industry requires long-term environmentally sustainable access to commercially viable areas of marine aggregates.	The conservation objectives should inform assessments of the environmental sustainability of exploitation of particular aggregate deposits. There will be a need to ensure that individually, and cumulatively with other sectors, the marine aggregate extraction does not prevent the achievement of the conservation objectives.
At the same time, it is important that dredging activities do not significantly harm the environment or fisheries or unacceptably affect other legitimate uses of the sea.	Measures put in place by the industry and regulators aim to reduce the footprint and impact of aggregate extraction on the environment and other users. Aggregate extraction has the potential to affect services provided to other sectors e.g. fisheries.	There should be a high level of common interest in integrating this sectoral objective for the environment with the proposed conservation objectives.

[6] Objectives from MOD 2000. The Strategy for the Defence Estate
[7] Objectives from DARDNI 2001. The Shellfish Aquaculture Management Plan for Northern Ireland
[8] Objectives from Office of the Deputy Prime Minister (2002) Marine Mineral Guidance 1 : extraction by dredging from the English seabed

Table 9 continued

Fisheries[9]		
Protect and conserve marine resources, Rational exploitation on a sustainable basis.	Fisheries are highly dependent upon access to the marine environment and to stocks of fish to harvest. Currently many stocks are heavily fished or overfished. Many stocks are outside, or almost outside, of safe biological limits. Key cod stocks are on the verge of collapse	There is a common interest in ensuring that exploitation of fish stocks is managed to optimise long-term environmentally-sustainable yields. Integration of fisheries and nature conservation objectives is crucial to the achievement of both. The conservation objectives include objectives for the protection and recovery of foodwebs, including the stocks of commercially-exploited fish.
Take account of implications for marine ecosystems. Integrate environmental protection requirements.	Fisheries are also responsible for some of the most significant of human impacts upon the marine ecosystem, not just on target fish stocks.	There is an urgent need to integrate environmental protection requirements into fisheries. Fisheries collectively have the potential for a negative impact upon most of the proposed conservation objectives. Certain fisheries conservation measures, particularly those controlling the use of mobile bottom gear in areas, have the potential for wider benefits to nature conservation. The conservation objectives provide a framework which could guide this integration.
Shellfisheries[10]		
Achieve 'A' classification status for all shellfish waters; reduce other forms of pollution.	The shellfish industry requires high water quality coastal waters to improve shellfish hygiene, to permit harvesting of shellfish (mussels, cockles etc) from unclassified or Class 'C' beds and to avoid or minimise purification requirements for harvested shellfish. (This objective is relevant also to mariculture).	This sectoral objective is consistent with the achievement of the proposed water quality objectives.
Sustainable commercial shellfisheries within 0-12nm and beyond 12nm.	The sector requires access to sustainably exploited stocks of shellfish.	The industry needs to protect stocks of shellfish at, or where necessary recover them to, levels at which they can be sustainably and optimally exploited. There should be a high level of common interest in integrating sectoral objectives for the environment with the proposed conservation objectives

[9] Objectives from UK Fisheries Industry - Current Situation Analysis. Number 10 Strategy Unit: Evaluation of the CFP, Source EC.
[10] Objectives from Shellfish Association of Great Britain response to Number 10 Strategy Unit consultation on the UK Fisheries Industry

321. Table 9 does not include a catalogue of the socio-economic objectives for each sector. Although socio-economic issues are outlined in Chapter 6 on the Regional Sea, the identification of socio-economic objectives was outside the scope of the Pilot. In order to develop a Sustainable Development Strategy for the Irish Sea, however, these socio-economic objectives would need to be identified.

322. In the light of the foregoing, the Pilot has made a preliminary assessment of the likely relative importance, now and in the future, of each of the operational conservation objectives for the sustainable development of each of the key marine human use sectors.

323. This assessment has been done by taking each operational conservation objective and subjectively scoring, against each of the major sectors, the potential importance which achieving the conservation objective might make to helping to achieve the sustainable development of that sector. Three broad categories of relationship are identified, which are not mutually exclusive:

    i. where the sector has generally low negative impacts upon the marine ecosystem but depends upon a high quality environment, e.g. recreation;

    ii. where the sector has potential for substantial negative impact on the marine ecosystem but achievement of the conservation objectives has potential substantial social and economic benefits for the sector, e.g. recovery and sustainable exploitation of fish stocks is of high mutual interest to fisheries and nature conservation sectors;

    iii. where the compliance with the conservation objectives (high environmental standards) may be required to achieve regulatory approval, e.g. in the oil and gas sector.

    The following categories of assessment are used:

    High: the implementation of, or compliance with, an operational objective similar to this may be of major importance to the sustainable development of the sector.

    Moderate: the implementation of, or compliance with, an operational objective similar to this may significantly enhance the sustainable development of the sector.

    Low: an operational objective similar to this is unlikely to make a significant contribution to the sustainable development of the sector.

    The results of the preliminary assessment are presented in Table 10.

Table 10: Assessment of importance of conservation objectives for sustainable development in the various marine sectors

Objective number	Operational conservation objective	Aggregates	Coast development	Dredging & disposal	Energy	Fisheries (mobile gear)	Fisheries (static gear)	Mariculture	Military	Recreation	Shipping
Aim 1: Physical & chemical											
1.1	Protect coastal processes										
1.2	Protect seabed habitats										
1.3	Protect biogenic structures										
2.1	Protect water bodies										
3.1	Protect water quality										
3.2	Chemical pollutants										
3.3	Oil										
3.4	Oil spills										
3.5	Noise & vibration										
3.6	Marine litter										
4.1	Contaminants										
Aim 2: Productivity											
1.1	Trophic status										
2.1	Harvest										
2.2	Protect habitats										
2.3	Protect prey populations										
2.4	Protect predator populations										
3.1	Protect population longevity										
3.2	Protect population life history										
3.3	Recover spawning stock										
3.4	Ecologically sustainable fishery										
3.5	Reduce fishing mortality										
3.6	Ecologically sustainable fishery										
Aim 3: Biodiversity											
1,1	Trophic level balance										
1.2	Protect habitat complexity										
1.3	Maintain best areas										
1.4	Protect rare habitats										
1.5	Protect threatened habitats										
1.6	Recover declined habitats										
1.7	Protect against non-native species										
1.8	Reduce impacts of non-native species										
2.1	Protect species diversity										
2.2	Protect important areas										
2.3	Safeguard species										
2.4	Recover declined species										
3.1	Protect population structure										
3.2	Protect population structure										
3.3	Protect populations at risk										
3.4	Protect genetic diversity										
3.5	Protect genetic diversity										

Achieving the conservation objectives within the context of sustainable development

324. Following consideration of the relationship between the conservation objectives and the environmental objectives of the various marine sectors, the Pilot considered the need to regulate human activity in relation to the Irish Sea within the sustainable development context. The Pilot addressed this issue in terms of:

    i. the overall context of strategic planning and the sustainable use of the Irish Sea;

    ii. action needed to conserve nationally-important areas;

    iii. action needed to conserve certain mobile nationally-important species;

    iv. cross-cutting and sectoral action to achieve the conservation objectives and in support of the foregoing.

Strategic planning and sustainable use

325. The UK land-based planning process combines national and regional policy guidance with detailed local plans. These plans combine the adoption of principles and presumptions, which guide decision-taking, with land use zoning. The plans are not comprehensive, being focused on the control of development. Key sectoral issues which lie, at least partly, outside this planning process are agriculture, forestry and water management; this constrains the degree to which strategic development planning can act also as land use planning.

326. This planning process does not apply in the marine environment beyond the immediate coast. In the marine environment, planning processes have developed in some sectors, e.g. in oil and gas exploration and production, but, while such plans have regard to the need to avoid impacts on other sectors, planning is not integrated across sectors.

327. In the United Kingdom, there is no statutory process of integrated Coastal Zone Management. In 1992, the House of Commons Environment Select Committee report on coastal zone protection and planning recommended inter alia, 'a central unit to adopt a national overview of coastal zone policy' be established (House of Commons Select Committee on the Environment, 1992). A number of non-statutory coastal zone management initiatives were pursued during the 1990s in both Britain and Ireland, and appropriate methods for such planning and management were developed (e.g. English Nature, 1993; Department of the Environment, 1996); but the non-statutory status of these initiatives was a weakness. On 30 May 2002, the European Union adopted its Communication on implementing Integrated Coastal Zone Management in Europe (European Commission, 2002), which commends Member States to undertake a 'stocktake' of legislation, institutions and stakeholders in coastal zone management, and to develop national strategies to deliver Integrated Coastal Zone Management. The UK Government is currently undertaking the 'Integrated Coastal Zone Management UK Stocktake' in response to the EU Communication.

328. There are a number of constraints on integrated strategic planning. These include:

    i. the fact that some decisions have been ceded to an international regulator, for example shipping, fisheries and the laying of cables. The practices of such regulators can only be changed by international agreement;

    ii. the inherent resistance of sectoral regulators to cede authority for decision-taking to another regulator; such resistance may, and sometimes may not, be in accord with the wider public interest;

iii. practical experience of integrated marine planning is limited in both the UK and neighbouring countries; such experience is generally limited to the coastal zone.

329. Current ideas on strategic planning in the marine environment can be summarised broadly as either:

i. improved, and more sophisticated, sectoral planning with enhanced integration of planning between sectors; or,

ii. more fully co-ordinated cross-sectoral planning which covers, and seeks to integrate, all the main sea uses.

330. To be fully effective, such strategic planning should include all the main marine sectors, and, for the reasons given earlier, this may depend on achieving international agreement for some sectors.

331. The starting point in marine strategic planning in the UK should be the strategic goals set out in *Seas of Change* (Defra 2002b). It is anticipated that the fundamental assumption underpinning strategic planning would be that the performance of all marine sectors would be assessed against these goals.

332. The Pilot commissioned David Tyldesley and Associates, in association with W.S. Atkins, to review the issue of coastal and marine spatial planning and to identify good practice principles. The contract report (David Tyldesey and Associates, 2004) sets out a number of guiding principles. These are:

i. marine spatial planning should be introduced as a statutory process embracing both plan making and regulatory controls. It should require all competent authorities to apply the precautionary principle, and also the principle that, where there is a conflict of interest, the conservation (and restoration) of the sea's biodiversity and natural physical and ecological systems should prevail;

ii. marine spatial planning should cover all forms of physical and spatial development, changes of use and all ongoing or proposed activities, seaward out to 200n miles within the UK's marine competency;

iii. marine spatial planning should operate at the national and Regional Sea levels, and where appropriate also at the more detailed local level; furthermore, jurisdictional competency in the intertidal zone should be rationalised to avoid duplication.

333. The report suggests that these guiding principles would be supported in practice by a hierarchy of plans, including:

i. a Marine and Coastal Planning Policy Statement which provides a UK expression of national marine planning principles for the seas within the national competency;

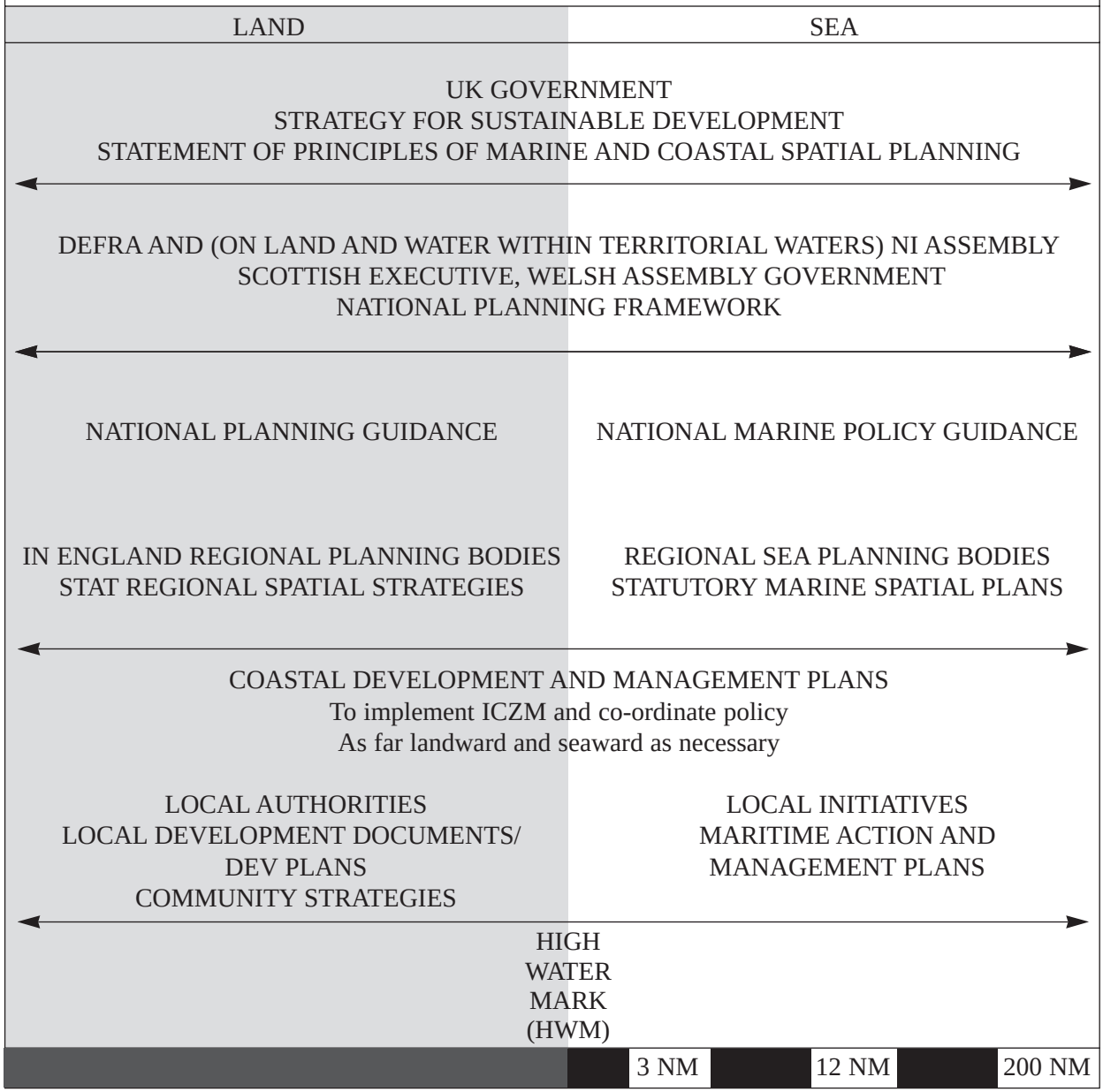
ii. policy statements in a National Planning Framework for England, Scotland, Wales and Northern Ireland following the vision and strategic goals developed in *Safeguarding our Seas* and subsequently;

iii. statutory marine spatial plans for each Regional Sea;

iv. where necessary, statutory local Maritime/Coastal/Coastal Area Action Plans.

This hierarchy is shown diagrammatically in Figure 1.

Figure 1: Proposed hierarchy of spatial planning



334. Referring to the options summarised in paragraph 329 above, there is a need for a considerable degree of functional planning integration to be achieved across the sectors. This needs to go beyond individual sector plans developed in consultation with other sectors, to a system which ensures strong co-ordination of such spatial planning and a high level of cross-compliance.

335. The report by David Tyldesley and Associates recognises that integrated Marine Spatial Planning is novel in operational terms, both for the UK and for neighbouring countries, and that a trial to develop the concepts to the stage where they can be implemented in practice needs to be undertaken prior to their adoption. The report recommends that such a trial be undertaken for the Irish Sea. This proposal is discussed further in Chapter 18.

336. The marine nature conservation framework can help to achieve the strategic goals through contributing to strategic planning and the appropriate regulation of human activity. This contribution is considered below in relation to i) zoning, and ii) strategic environmental assessment.

Zoning

337. Strategic planning would seek to meet the local, regional and national needs of the environment, economy and society, and deliver the strategic goals for the marine environment, in part through a system of spatial planning which incorporates zoning. The area of the Regional Sea would be sub-divided into zones which identify the types of human activity appropriate to them. These zones would take account both of economic and social needs, and also the requirement for environmental protection. The framework for marine nature conservation would contribute to this zonation in two main ways, namely:

    i. via the map of marine landscapes scored so as to indicate their susceptibility to harm across the range of human activities;

    ii. via the map indicating the ecologically-coherent network of nationally-important areas.

338. While this zoning has value for generalised planning purposes, in practice the zoning pattern is likely to vary in relation to the individual marine sectors; for example fragile seabed communities will be less susceptible to harm from the passage of surface vessels than from dredging, bottom trawling or sediment disposal activities. It would be advantageous, therefore, to zone in relation to the main types of human activity impact and/or in relation to each activity sector. Such zoning information can then be taken into account by the individual sectors in the planning of their future operations.

339. All available information should be taken into account in relation to zoning. There will usually be more detailed biological information available for inshore areas than for offshore areas, and inshore areas are likely to come under greater human pressure. As a consequence, planning is likely to be more detailed for inshore areas. This will allow account to be taken of important habitat features (e.g. biogenic reefs, eelgrass beds, maerl beds etc), as well as the larger-scale marine landscapes.

Strategic Environmental Assessment

340. Strategic and spatial planning of the marine environment could potentially make full implementation of the Strategic Environmental Assessment Directive (due in July 2004) easier, more effective for regulators and less onerous for users. Any regulatory framework of planning which attempts to identify environmental interests and zone sectoral activities should be harmonised with the Strategic Environmental Assessment Regulations. Used in combination, these processes should ensure that the best decisions are reached from the perspective of sustainable development. Together, spatial planning and Strategic Environmental Assessment would identify the range of environmental interests and activities that any new development would have to take account of, and help in the selection of areas where impacts would be minimised. As more sectors engage in Strategic Environmental Assessment, the value of setting standards, sharing information between sectors, and integrating Strategic Environmental Assessment across sectors will increase. Specific guidance on the implementation of Strategic Environmental Assessment in the marine environment, in addition to the general guidance issued and planned by the Office of the Deputy Prime Minister, is required to ensure the maximum benefits are obtained from implementation of the Directive.

Conclusion

341. An integrated, ecosystem-based marine spatial planning framework is required to manage the resources of the sea strategically. The Regional Sea is an appropriate scale at which to undertake marine spatial planning, and the marine landscape classification provides a framework for the development of locally-tailored planning and management policies. In the Irish Sea, and other

Regional Seas, an ecosystem approach requires considerable international co-operation as well as the inclusion of social and economic aspects of sustainable development. The approach developed by the Pilot offers a model and some experience on which to build. In almost all UK Regional Seas as identified by the JNCC (Map 8), some international consensus would be required to progress management and spatial planning. Co-ordination between strategies at the EU level is critical. Both the CFP and the developing EU marine strategy must be consistent with, and contribute to, the overarching spatial planning framework.

Conserving important marine areas

342. Chapters 8-10 confirm that the effective conservation of an ecologically-coherent network of nationally-important areas is a critical component of any strategy for marine nature conservation. In addition to this essential strategic element, there are a number of key drivers for the establishment of networks of marine protected areas. These are:

    i. the requirement to establish Special Areas of Conservation and Special Protection Areas within the Natura 2000 network out to 200n miles;

    ii. the agreement reached in June 2003 under OSPAR to establish an ecologically-coherent network of well managed marine protected areas for the OSPAR maritime area by 2010;

    iii. the commitment made at the World Summit on Sustainable Development in September 2002 to establish representative networks of marine protected areas by 2012 (United Nations, 2002).

343. The agreement reached under OSPAR is intended to lead to the establishment by 2010, of an ecologically-coherent network of well managed marine protected areas which will:

    i. protect and conserve areas that best represent the range of species, habitats and ecological processes in the maritime area;

    ii. protect, conserve and restore species, habitats and ecological processes which have been adversely affected by human activities;

    iii. prevent degradation of, and damage to, species, habitats and ecological processes, following the precautionary approach.

344. Past and current work to designate, establish and conserve coastal and intertidal Sites of Special Scientific Interest, Areas of Special Scientific Interest, Wildlife Refuges, nature reserves, and also coastal and marine Natura 2000 sites, will make an important contribution towards meeting the needs referred to in paragraphs 342-343 above. However, only the series of Natura 2000 sites extends below low water mark, and while it will make a substantial contribution to, it will not achieve, the establishment of the ecologically-coherent network required under OSPAR without a comprehensive revision of its Annexes. The Habitats Directive currently lists 7 habitats on Annex 1, while, as has been shown in Chapter 7, an objective analysis of the coastal and seabed habitats (marine landscapes) of the Irish Sea identified 18 such habitats. The number of marine landscapes for the UK and adjacent waters is likely to be significantly greater, perhaps 20-30.

345. In contrast, the development of the ecologically-coherent network of nationally-important areas considered in Chapter 9 will meet the OSPAR and Natura 2000 objectives, provided the network is adequately conserved.

346. An ecologically-coherent network will consist of some areas where the nature conservation value lies in specific interest features (gas seep structures, bottle-nose dolphin populations, black scoter

assemblages etc). For these, the conservation action required is to perpetuate these specific features. This approach to area conservation is that followed with respect to many Natura 2000 sites. Critics of this selective approach to area conservation point to two perceived weaknesses. Firstly, it assumes that the ecological relationships which exist within a site, and between the sites and adjacent areas, are understood. Unfortunately, this may not be the case; it is now known that many mobile species utilise different habitats in different seasons and even at different times of the day and night. Secondly, it assumes that the state of the site at the time of selection is the desired state, when, quite possibly, parts of the site are already well below their ecological potential because of past and present human use.

347. In addition to specific interest features, many areas within the ecologically-coherent network will be selected for the contribution they will make to a wider range of biodiversity. Primarily, these are the areas selected as being examples of a representative series of marine habitats. For these areas, it is important that the area is managed so as to enable it to support the range of species and communities characteristic of that habitat type. To achieve this, it would be necessary to exclude activities likely to cause physical damage or disturbance to the habitat, and also activities which would limit the population size of its constituent species. Consequently, there would be a presumption against activities such as dredging or commercial fishing on such sites. However, because areas are selected as representative examples of the various types, there is considerable flexibility over the selection of specific areas, and this provides potential for selection to adjust to sectoral and economic interests.

348. A network of marine protected areas is an integral part of the zoning concept of spatial planning referred to above. Effectively, such areas will be included within the zones where human activity is to be carefully managed.

349. Voluntary approaches to the establishment of marine protected areas have been only partly successful when this approach has been tried in various countries. Voluntary approaches have often been the result of local initiatives; more rarely have they been pursued on the basis of a systematic nationwide effort. Where voluntary approaches have been successful, the success achieved has tended to be partial, temporary, or the precursor to statutory action (Roberts *et al.*, 2003).

350. The approach taken by the UK in relation to Natura 2000 sites in the marine environment is to utilise the range of powers already available to marine regulators; supplementing these powers as necessary. This approach is dependent on the use of these powers being obligatory (both in establishing the protected areas, and in regulating human activity), subject to issues of overriding national public interest. In contrast, a similar approach taken to establish and conserve marine nature reserves during the 1980s and 90s, which was not subject to the obligatory use of such powers, failed.

351. A disadvantage of the 'Natura 2000' approach is its 'multiple-stop shop' approach to area management, where different regulators are responsible for regulating different types of human activity on a site in order to achieve the conservation objectives. This could lead to complexity and duplication of action, since a proposed activity might require several different approvals. In practice, the problem is addressed in part through guidance provided to regulators, and in part through the preparation of a Management Scheme for each marine site.

352. Finally, a fully integrated approach could be taken which provides for both a specific statutory measure to establish marine protected areas, and also comprehensive measures for the area's conservation and management. This has the potential benefit of identifying a lead responsibility for the establishment and management of the area, and creating a 'one-stop shop' for decision-taking.

353. In conclusion, measures taken to establish and conserve an ecologically-coherent network of nationally-important areas need to have the following characteristics:

    i. result in the establishment of the network over a 5-10 year timeframe (in order to halt the decline in biodiversity and to meet international obligations);

    ii. ensure that the conservation objectives for the areas are met; these objectives will vary from ensuring the conservation of specific interest features to ensuring the area achieves its full biodiversity potential;

    iii. ensure that measures taken to achieve the conservation objectives are as cost-effective and efficient as possible, both from the viewpoint of the regulator(s) and from that of the human activity sectors. Simplicity is to be preferred to complexity.

Conservation of certain mobile nationally-important species

354. Existing wildlife protection legislation, both domestic legislation and also that required by the Birds and Habitats Directives, is intended to provide protection to those species likely to be endangered as a result of persecution or exploitation. For birds, this protection is extended to all species.

355. A major cause of mortality of a number of nationally-important species in the marine environment is, however, injury and killing which is the incidental result of other operations, most notably fishing. Such mortality is of particular concern in relation to a range of species of small cetaceans, including harbour porpoise and several species of dolphins, but is potentially a factor in relation to a range of species, including sea turtles, sharks and seabirds. Research to identify technical measures to reduce such mortality should be a priority and, where a satisfactory technical measure (or measures) exists, its use should be compulsory.

356. Some mobile species, e.g. skates, rays and sharks, are deliberately targeted by capture fisheries, both commercial fishing and sea angling. Elasmobranchs cannot sustain other than a very low fishing pressure, and the sustainability of these pressures should be scrutinised closely. With regard to declining elasmobranch species, there should be a requirement for incidental captures to be returned to the sea.

Cross-cutting and sectoral action

357. In addition to, and in support of, the foregoing measures, cross-cutting and sectoral action should be taken. Having regard to the assessment summarised in Table 8, and in the light of conclusions reached with regard to measures reported above, the Pilot has set out the key management measures needed to deliver the proposed operational conservation objectives, and the national and international targets for marine nature conservation and sustainable development, in Table 11. This list of actions is not comprehensive, and some of the actions specified are already ongoing.

Table 11: Management mechanisms and measures needed to deliver the conservation objectives for the Irish Sea

Key mechanisms and measures		Relevant Operational Objectives	Comments
Strategic planning and sustainable use			
1.1	An integrated and effective marine spatial planning and management system in place, incorporating zoning of marine uses,over the UK territorial waters and adjacent regional seas.	All objectives	• More integrated and effective marine spatial planning is critical to deliver improved regulation, management and protection of the marine environment that addresses the multiple, cumulative and potentially conflicting uses of the sea. Likely to be based upon new legislation, duties and powers.
1.2	All developments, proposed changes and activities brought within the scope of a marine spatial planning system. Fisheries are a critical area for inclusion.	All objectives	• It is inappropriate that some activities, most notably fisheries, fall largely outside of current spatial planning and regulatory systems when their environmental impacts may approach or exceed those within the systems. • This is recognised on land now, with agriculture and forestry increasingly being brought within land use planning.
1.3	Conservation objectives integrated with other objectives for sustainable development and delivered through this improved marine spatial planning system.	All objectives	• Within the UK, the Marine Stewardship process needs to ensure the integration and delivery of conservation and sustainable development objectives, in pursuit of the vision and strategic goals for the environment. Ecosystem approach principles should guide this integration. These objectives will in turn drive marine spatial planning and plans.
1.4	Planners and regulators with appropriate responsibilities, powers and tools to enable them to promote, ensure and enable the conservation and sustainable development of the marine ecosystem.	All objectives	• As part of the improvement of the marine spatial planning system it would be appropriate and necessary to review the responsibilities, powers and tools placed upon or available to planners and regulators.
1.5	Strategic Environmental Assessment (and Sustainability Assessment) undertaken for all marine sectors. Include coastal and marine fisheries.	All objectives	• This relates to the requirements outlined in the European SEA Directive (2001/42/EC) and being transposed into national legislation. Sectoral SEAs are being undertaken by DTI for offshore energy. SEA would feed into an improved marine spatial planning framework. • SEA should be undertaken for the fisheries sector.
1.6	Developments and activities which have the potential for a significant impact upon the marine ecosystem be subjected to Environmental Assessment.	All objectives	• Most sectors and significant developments in the marine environment are already subject to environmental assessment, e.g. coastal development, oil and gas development, capital dredging. • The fisheries sector, which is responsible for some of the most significant impacts upon the marine ecosystem, is generally not subject to environmental assessment. • Ongoing and proposed changes in fisheries activities could be regulated and practiced through fisheries.
1.7	Water quality objectives for transitional and coastal water bodies taken forward primarily through the Water Framework Directive and appropriate measures taken for waters to seawards.	Water quality objectives -2.2.1, 2.3.1-2.3.6 & 2.4.1	• This is currently being implemented by European states. • Adoption of equivalent measures in Crown Dependencies may be necessary. • The Water Framework Directive includes some principles and approaches which it may be appropriate to consider applying to the marine water bodies (and indeed the marine environment as a whole). • These objectives need to inform consideration of the ecological carrying capacities of enclosed or semi-enclosed water bodies (e.g. sea lochs, rias, estuaries, saline lagoons) for mariculture and similar operations.

Table 11: continued

Conservation of important marine areas			
2.1	Completion of the UK marine Natura series out to 200nm and UKCS where appropriate.	All objectives	• Being undertaken in the UK by Defra/JNCC/country conservation agencies (within12 miles) for existing Annex I and II habitats and species. This will consider both the overall extent of the current four 'offshore' Annex I habitats which should be included within Natura 2000 and the specific sites.
2.2	Completion of an ecologically–coherent national network of marine protected areas within the UK which includes Natura and additional marine protected areas as necessary and makes an appropriate contribution to the protection, conservation and recovery of the marine ecosystem.	All objectives	• Draft criteria have been developed and trialled by JNCC through the Irish Sea Pilot. • The contribution which current and proposed Natura 2000 would make to forming this core, and the possible implications for the management of these Natura 2000 sites needs to be evaluated. The management measures required for these areas needs to be fully assessed. A proportion will already be within protected sites and subject to appropriate management.
2.3	European marine site conservation objectives, management schemes and outcomes reviewed against national and regional sea conservation and sustainable development objectives and requirements and revised as necessary.	All objectives	• There would be a need to ensure that European marine sites are making the most appropriate contribution to meeting national and regional sea objectives and targets for their designated interests. Conservation of certain mobile nationally-important species.
Conservation of certain mobile nationally-important species			
3	Strengthened legal measures to protect and to promote the recovery of certain vulnerable marine species.	Foodweb – 2. & 3; biodiversity – all.	• Existing species measures fall short of what is required to meet their conservation needs. These include the need to strengthen protection against incidental damage and to take measures to promote the recovery of vulnerable species which have declined.
Sectoral measures			
Sea fisheries			
4	Measures available and implemented effectively to reduce the harmful impacts of fisheries.	Seabed features - 1.1.2 & 1.1.3; water quality 3.3.1; marine foodwebs - all; biodiversity – all.	• The harmful effects of bottom-towed fishing gears on seabed habitats need to be reduced or, where necessary, removed. Bottom-towed fishing gears are responsible for some of the most significant impacts upon parts of the marine ecosystem. Promotion of alternative, sustainable fisheries methods which avoid the use of gear which damages or disturbs the seabed. • Further measures need to be taken to reduce the impacts of fisheries on marine foodwebs and biodiversity, including the recovery of target species stocks and protection of non-target species. • There may need to be a significant shift from a focus on improving the catching efficiency of fishing gears to improving their environmental sustainability.
Mariculture			
5.	Sustainable development strategies developed and implemented for mariculture, which are integrated with other uses of the marine environment and ensure its conservation.	Physical features - all; marine food-webs – 2.2.2; biodiversity – all.	• Mariculture requires a high quality environment in which to operate and yet has the potential to cause significant environmental change, for example where operations are undertaken at inappropriate locations or scales. • Mariculture operations can directly and indirectly affect a wide range of uses of the marine environment
Shipping and navigation			
6.	Effective measures in place to increase shipping safety and reduce the risk of environmental pollution from shipping accidents.	Non-native species - 3.1.7 & 3.1.8	• Transfer of non-indigenous organisms by ballast water and sediments is one of the greatest threats to marine biodiversity.

358. The following recommendation is made in relation to strategic and spatial planning. Recommendations on the other issues discussed in this Chapter are given in Chapter 13 on Legislation.

Recommendations

R29 Effective mechanisms are needed to implement marine spatial planning out to 200n miles. Mechanisms should include:

i. the introduction of marine spatial planning as a statutory process involving national planning guidelines, strategic plans at Regional Sea level and more detailed local plans;

ii. marine spatial planning should cover development and other sectoral activities both current and proposed;

iii. marine spatial planning should adopt an ecosystem approach and seek to implement conservation and other sustainable development objectives;

iv. placing duties on public bodies to carry out their functions in accordance with the principles of sustainable development and to further the achievement of the conservation objectives included in the plans;

v. consensus should be built internationally to develop effective planning and management policies at the Regional Sea scale.