

General Committee of Council

Managing change at the coast

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1. Introduction

1.1 This paper does not seek to address all issues of change at the coast, but focuses on two high priority and related areas: managed coastal realignment across areas that are of conservation interest for their freshwater features, and proposals to improve English Nature's engagement with local stakeholders in areas where the coast is changing, where managed change may be appropriate.

1.2 Our coasts are changing and the rate of change will continue to increase. This means both that the mosaic of habitats and species at the coast will change, and also that some existing defences will no longer be technically viable or economically sustainable. As some habitats at the coast are currently dependent on human intervention in the form of flood defences for their existence, English Nature needs to be able to offer clear advice to operating authorities which sites we wish to conserve in situ (if it is sustainable to do so), the timing of managed realignment (where this is necessary), and the suitability of any compensatory habitat creation (if this is required).

1.3 This paper outlines the nature of the freshwater habitats at risk, the main options for dealing with these habitats presents and sets out a series of principles guide the selection of these options. The aim of this paper is to enable the principles that underpin decision-making to be agreed and promoted within English Nature and with wider stakeholders. The purpose is to ensure consistency across English Nature's advocacy, and to encourage action by regulators where appropriate.

1.4 Society's attitude to how coastal change should be addressed is key. Generally, there is opposition to change, and often the view is expressed that changes to the 'natural' coastal environment should be 'repaired'. This has frequently led English Nature into positions of conflict with other stakeholders, with consequent demands on both our reputation and our staff time. This paper identifies ways in which English Nature can improve our engagement with stakeholders in such situations.

1.5 The paper has been informed by three workshops involving Area team staff and other national specialists. Further comments have been sought from Rural Development Service (RDS) and Countryside Agency (CA) colleagues, as well as certain key external partners (Defra Flood Management and

Environment Agency), prior to its preparation as a Council paper. It is intended subsequently to develop the principles as clear guidance for staff and stakeholders, within an overall policy statement.

1.6 Council is requested to:

- a) **agree** the broad principles for decision making when freshwater habitats are at risk;
- b) **support** the development of these principles into guidance for English Nature staff;
- c) **confirm** our continued support for strategic, long-term approach to the provision of compensatory habitat replacement at the coast in association with key operating authorities;
- d) **support** the proposal to develop recommendations for improved stakeholder and partner engagement.

2. Purpose

2.1 To set out the concerns, opportunities, principles and priorities in responding to the pressures on freshwater habitats¹ arising from sea level rise and realignment or abandonment of coastal sea defences and to propose a decision framework

3. Background to the issue

3.1 Our coasts are changing and the rate of change is accelerating. Sea level rise, driven by isostatic change and compounded by climate change and hard defences, is resulting in coastal squeeze and consequently loss of coastal habitats. The English Nature Maritime State of Nature report highlighted that nationally, roughly 100ha of saltmarsh is lost each year. In Essex alone the annual loss is between 40 and 50ha. Current projections indicate the possible total loss of saltmarsh from some estuaries within 50 years if no action is taken. This loss of habitat is particularly acute where hard sea defences prevent the natural migration inland of coastal habitats. Hard defences may also interfere with other coastal processes such as shoreline sediment transfer, leading to further erosion and loss of coastal habitat. This loss of habitat has serious implications for flood risk management; it is clear that in many rural areas the cost of capital works to improve sea defences is not justified on economic or technical grounds. The challenge this situation presents has been the subject of a recent Defra Flood Management policy paper².

3.2 Existing English Nature policy, as outlined in the Maritime Strategy and the coastal management sector analysis, emphasises the need to work with dynamic coastal processes as far as possible, including removal or realignment of hard defences, or changing other unsustainable management

¹ Although this paper considers implications for freshwater habitats, some of the principles will also apply equally to brackish and saline systems where habitats containing such features exist behind managed flood defences.

² Maintenance of uneconomic seawalls: A way forward (Defra FM 2004)

practices where appropriate. This policy is considered the best long-term approach to managing the coast sustainably in the face of sea level rise. In many cases this approach will allow the migration and development of coastal habitats (shingle, sand dune, lagoons, saltmarsh or mudflat) further inland in response to rising sea levels, and allow reinstatement of more natural functioning systems. The Maritime Strategy also recognised that whilst many diverse coastal ecosystems could be sustained with this approach, in some cases it will not be possible to conserve the same mosaic of habitats and species in the same places.

3.3 Whilst clearly essential for the conservation of coastal habitats, dynamic coastal processes can result in change to other habitats of nature conservation importance in the coastal flood plain. Sea defences are important in reducing the risk of saline flooding to freshwater habitats on the landward side, and so any inland migration of coastal habitats may be at the expense of existing important freshwater habitats. Freshwater habitats on the coast are also under pressure from storm events of increasing magnitude, which may breach existing sea defences, and from increased saline incursion into shallow aquifers, either through percolation through or under sea walls.

3.4 The Maritime Strategy and Coastal Management sector analysis have highlighted the need for a strategic approach that takes account of all the habitats in the 'coastal zone'. Current circumstances now require greater consideration of the risks involved for freshwater habitats behind seawalls or other vulnerable defences. This paper briefly outlines the nature of the freshwater habitats at risk, summarises the main options for dealing with these habitats, and sets out a series of guiding principles intended to guide flood management option selection. The aim of this paper is to enable the principles, which should underpin decision-making to be agreed and subsequently developed into guidance within English Nature and with wider stakeholders, and to inform *Natural England*. The purpose of adopting these principles is to ensure consistency when giving advice, and to provide greater clarity to regulators in order to encourage action where needed.

4. The context for English Nature advice and decision-making

4.1 English Nature provides advice to the Environment Agency on the nature conservation aspects of flood risk management decisions at both a strategic and operational level. In providing such advice, decisions are required over the extent to which a policy of working with dynamic coastal processes at particular locations can be implemented to deliver sustainable solutions. Such decisions are driven by the following considerations:

4.1.1 Strategic direction and context

- I. an understanding and awareness of how the physical system that supports habitats both in front of and behind sea defences, will change and evolve over time;
- II. an overall corporate strategic direction towards managing whole ecosystems;

III. long-term strategies (shoreline management plans and coastal and estuarine strategies) to re-establish estuary and coastal morphology, which that accommodate sea level rise and provide a long term basis for sustainable flood risk management;

IV. planning for the long-term management or restoration of freshwater habitats under pressure from saline incursion;

V. the need to ensure that sustainable locations are used for freshwater habitat re-creation requirements under UK Biodiversity Action Plan (BAP) and to meet the legal requirements of the Habitats and Birds Directives.

4.1.2 Proactive or responsive action:

I. a proactive decision is made to breach a sea defence to encourage coastal habitat re-creation (managed realignment);

II. the need to respond to unmanaged breaches/overtopping of sea defences, including decisions about the scale and location of any repair work;

III. the need to respond to the abandonment of sea defences as they become uneconomic or infeasible to maintain.

4.2 In all these cases, the consequences for freshwater habitats must be taken into consideration. Making choices between different nature conservation priorities has the potential to be controversial. The LIFE Nature *Living with the Sea* Report (English Nature, Environment Agency (EA), Defra & NERC, 2003) confirmed the widely held view that some freshwater habitats at the coast, behind artificial sea defences, are not sustainable and that the number of such sites is set to increase. That report recommended that:

- the future presumption should be to restore coastal form and function,
- a strategy should be developed to incorporate relocation of unsustainable freshwater habitats to more sustainable locations, with restoration of intertidal and brackish transitions, over a 50 year timescale.

4.3 The rest of this paper explores the principles and criteria that should guide the application of that strategic approach. It will not be possible, for example, to re-create some freshwater habitats such as peatlands over a 50 year timescale, so the way in which a more sustainable approach to coastal management is applied needs also to reflect the nature conservation imperatives for other habitats.

4.4 Guidance exists on the responsibilities towards maintaining favourable conservation status of Natura 2000 sites. In July 1998 the Government confirmed its responsibility for funding the flood risk management measures, where sustainable to do so, required to sustain the conservation interest of Natura 2000 and Ramsar sites³. Where it was not sustainable to conserve

³This commitment is limited to Natura 2000 sites (not to SSSIs). In circumstances where SSSIs permanently changed either through managed realignment or failure of managed defences English Nature will need to make a judgement on the management needed to achieve the best conservation outcome from a change in flood management option (see Annex 3 case examples).

such sites *in situ* the Government confirmed that it would fund measures, via the flood management budget to re-create as much of the interest elsewhere as possible.

4.5 At present, however, there are no comprehensive guidelines as to how the freshwater sites (SSSIs as well as Natura 2000) should be taken into account when advising on the impact of improving, maintaining or abandoning sea defences in order to safeguard coastal designated features. Nor is there a national strategic plan for habitat replacement as advocated in the *Living with the Sea* report (although such an approach is being developed at a regional level by the EA in East Anglia). There is a consequent risk of inconsistency in English Nature's advice, leading to delays in the action taken by operating authorities to establish replacement habitat. A strategic approach to resolving these issues is essential. Shoreline management plans and estuary strategies will identify where and when realignment and abandonment will occur. English Nature has agreed to support this process by identifying those freshwater habitats we would prefer to see conserved *in situ* (although this may not always be possible) and those that are more readily replaced. This information can then be fed into EA's regional habitat creation programmes, effectively creating a national strategic plan, which identifies sites where realignment is necessary and enables decisions to be taken about habitat replacement at a national scale.

5. The nature and scale of freshwater habitats at risk

5.1 The freshwater habitats and associated species assemblages most at risk are those in low-lying coastal floodplains affected by relative sea level rise. The bulk of these areas are in south-east England, from North Norfolk to the Solent, including well-known coastal and low-lying wetlands such as the northern part of the Norfolk Broads, Minsmere and parts of Walberswick on the Suffolk coast. Freshwater habitats are also at risk elsewhere, e.g. South West estuaries which often have tight creek head freshwater marshes with little scope for adaptation to sea-level rise. In some circumstances it will be logical to accept the increasing tidal inundation of such habitats as 'natural change'. The principles developed in this paper will be applicable to other areas of the country, but these are the areas with the most urgent need for guidance.

5.2 The types of coastal floodplain habitat found behind seawalls include reedbed, saline lagoons, saline, brackish and freshwater ditches, coastal and floodplain grazing marsh and fen. Locally, valley heads, freshwater habitats overlying peat and oligotrophic and mesotrophic water bodies may also be present. Transitions to other freshwater habitats may occur, e.g. wet grassland, wet woodland and wet heath. Transitional habitats between coastal and freshwater are particularly important and scarce. Coastal grazing marshes are of importance for their highly adapted invertebrate assemblages, including many rare and scarce invertebrates, and are possibly the least well understood in terms of their requirements for re-creation. In particular, the varying salinity from freshwater to brackish conditions is of critical importance to certain invertebrate and plant species. In terms of vulnerability to saline

intrusion, and re-creatability, soil type and hydrology are important considerations – a groundwater fed peatland would require different considerations to a surface fed wetland overlying a mineral soil. Such variables greatly affect the sensitivity of the habitat to saline incursion, and the ease with which they can be re-created elsewhere.

5.3 There has been no comprehensive analysis of the nature and complexity of the vulnerable habitats in South East England. Some previous estimates were undertaken in a joint English Nature/EA study in 1998 and an assessment has been made under various Coastal Habitat Management Plans (CHaMPs); work is currently underway to assess the potential freshwater habitat recreation requirements and opportunities in the Suffolk coast. Recent work by Defra (*FD 2107: National Evaluation of the Costs of Meeting Coastal Environmental Requirements*, in prep) has identified approximately 31,500ha of freshwater designated sites at potential risk. Whilst some habitats may be closely defined (such as reedbed characteristics suitable for breeding bittern) others, such as grazing marsh and fen, are more variable. These would depend on such factors as the water supply mechanism, the chemistry and quantity of water, and the type of land management. Such factors make it difficult to generalise about how habitat should or could be replaced.

6. Making decisions when freshwater habitats are at risk

6.1 Outline of English Nature's existing coastal policy and management options.

English Nature's policy of working with coastal processes to deliver a sustainable coastline recognises that the physical and biological interests of coastal habitats are maintained through change. There will be erosion in some areas and deposition of sand, silt and shingle, and recreation of saltmarsh or mudflat in others. In many cases, there is a need in the medium to long-term for managed re-alignment. This involves deliberate breaching of sea defences to restore the tidal flood management function of the coastal flood plain, and allow new saltmarsh and mudflats to regenerate naturally. However decisions will also need to be made in response to (a) unmanaged breaches of coastal defences (such as whether to repair storm damage); and (b) the economic viability, technical feasibility and social acceptance of, increasing (or decreasing) the standard of defence in the face of rising sea levels and climate change. Shoreline Management Plans and estuary strategies provide the strategic direction to such decision making at the coast and in estuaries. English Nature is committed to supporting Defra and operating authorities in the development of such strategic initiatives.

6.2 Options for freshwater designated sites.

Where English Nature is required to give advice on strategic planning (e.g. under Shoreline Management Planning) or on site specific proposals at the coast in response to natural breaches or habitat recreation proposals, there are three broad options for dealing with freshwater habitats at risk. These are:

I. **Hold the Line.** The flood risk to the freshwater habitat should be managed, or managed in part, at the existing level by sea walls over the short (0-20 years), medium (say 20 – 50 years) or longer term (say 50 – 100 years);

II. **Managed Realignment with compensatory habitat creation.** Loss or transformation of freshwater habitat to coastal habitat is accepted, but where this occurs and it amounts to an adverse effect on the integrity of, or compromise the objectives of a designated site, it should be compensated for by re-created freshwater habitat elsewhere;

III. **Managed realignment and / or No Active Intervention.** Complete transformation of a freshwater to a saline habitat may be accepted without the requirement for recreated freshwater habitat elsewhere, because the replacement coastal habitat is considered to represent the preferred conservation outcome or adequately mitigates for the loss of the freshwater habitat. However, complete or partial replacement habitat will normally be needed for Natura 2000 sites.

7. Principles to guide decision – making

A number of principles and constraints need to be taken into account in determining which of the options above is appropriate under any given circumstances. These are considered below, and will be developed further as generic guidance to staff and other stakeholders, especially the Environment Agency, to enable greater consistency in decision-making, and to attempt to ensure the optimum outcome for conservation of the mosaic of freshwater and coastal habitats in the coastal floodplain.

7.1 Prioritising re-alignment locations: taking account of freshwater and coastal objectives in relation to estuary sustainability.

English Nature has obligations under national and international legislation for the safeguarding of features and achievement of conservation objectives within designated sites. A basic principle is that where decisions must be made as to overriding priorities in any given case, both freshwater and coastal conservation objectives may legitimately be taken into consideration. In many cases objectives will not conflict, or may be adequately accommodated, and wherever possible solutions should be sought which meet both sets of requirements. But on occasions the objectives for one will override the principles governing decisions affecting the other. Thus in general, areas that will do the most to help create a sustainable estuary or coastal form should be prioritised for future realignments. However, where loss of important freshwater habitat might result from a planned realignment, alternative options that would result in loss of less valuable habitat would need to be considered if they would fulfil the same objectives for the overall management of the coastal cell or estuary. If alternative(s) are available, then areas supporting habitats that are more easily re-creatable should be prioritised for future realignments whereas greater consideration should be given to providing an

appropriate standard of defence where the freshwater habitat is less readily re-creatable (see Section 7.3).

7.2 Sustainability considerations.

A starting point for determining whether to maintain, recreate or allow change to take place to a freshwater habitat is to consider the sustainability of any option proposed. The objectives for freshwater ecosystems should, as for the coastal habitats, be considered at the widest possible functioning unit, in order to take into account the dynamics of the naturally functioning coastal floodplain and its associated catchment. The aim should be as far as possible to include the same considerations concerning naturally functioning systems for freshwater as for coastal habitats. This maintains consistency with objectives for flood risk management under the Government's strategy *Making Space for Water*. In this context the technical and economic sustainability of any option also needs to be considered. The range of sustainability considerations should include:

7.2.1 Long term changes in physical processes:

Decisions on whether or not to support realignment or no active intervention, should consider how the physical coastal or estuary system is changing, the pressures on any flood management structures and, importantly, how the system will change in response to climate change and rising sea-levels.

7.2.2 Long-term sustainability of replacement freshwater habitat.

Re-creation opportunities should consider the sustainability of any relocated freshwater sites under consideration including:

- I. Source (quantity and quality) of water supply;
- II. Risk of impact of further sea level rise and of freshwater objectives conflicting with those for designated coastal habitats in future;
- III. Inclusion of the recreated habitat as part of a larger more naturally functioning ecosystem, with a range of habitat types and where possible transitional types represented.

7.2.3 Long term conservation objectives for the site must be considered.

Under some circumstances, based on the conservation features and objectives for a designated site (for example if the site already offers a mosaic of habitats) the shift to more brackish conditions might be regarded as adequate compensation for any freshwater habitat lost. Such circumstances should be informed by the need to take a more holistic approach to coastal ecosystem functioning, and have regard to the sustainability of options given likely responses to climate change, as well as legal requirements under the Habitats and Birds Directives.

7.3 The resilience or re-creatability of vulnerable freshwater habitat.

Many important coastal freshwater sites have developed only relatively recently, normally as a result of human intervention. The re-creatability of such habitat types must therefore be a valid consideration. Also until relatively recently (often following flood defence improvements post the 1953 flood event) many of these sites were subject to occasional inundation. Conversely, some sites or assemblages may be effectively irreplaceable in biological terms once lost. It is important to remember, however, that sea defences are not designed to stop flooding, but to reduce risk to a given frequency, so even in such cases a given risk of inundation must be accepted. Indeed for some sites with brackish or saline characteristics occasional inundation may be essential to sustain that interest. English Nature's current advice to Defra is that few, if any sites of conservation interest, require a standard of defence greater than 1:20. A study currently being undertaken for Defra (*in prep*) indicates that the majority of sites have a standard of defence that exceeds this threshold. Important considerations therefore are:

- I. the resilience of the existing freshwater habitat to periodic saline inundation (including ability of saline water to drain from a site);
- II. the re-creatability of the habitat and its important species assemblages (and the ability of such assemblages to migrate to new habitats);
- III. the probable frequency and extent of inundation under changed (more naturally functioning) flood risk management proposals;
- IV. the influence of factors such as climate change on the predictability of any re-creation objectives, and on the ecological or functional dissimilarities from original habitat;
- V. the timescale over which such changes to coastal flooding events are likely to take place; and
- VI. the timescale for development of functioning replacement habitat.

7.3.1 In the case of very rare, vulnerable or irreplaceable freshwater habitats or species assemblages, (i.e. unlikely to achieve comparable habitat within 50 –100 years), the risk of saline incursion should continue to be managed at a relatively high level whilst it is sustainable to do so. There is a need to evaluate ways in which the more critical capital can be maintained for sufficiently long (provided this is technically possible and the economic cost is not excessive) to allow adequate replacement habitat to develop. Where the risk to coastal habitats/ species assemblages, or sustainability considerations, outweighs the risk to very rare/vulnerable/irreplaceable freshwater habitat/species assemblages, replacement freshwater habitat should be sought, using the principles set out above (7.2 and 7.3) and below.

There may be some circumstances where the socio-economic importance of a freshwater location needs to be taken into account in this context also. Some sites have particular socio-economic or cultural importance as freshwater wetlands (e.g. Norfolk Broads). Defra are currently investigating improved ways of evaluating such issues.

7.3.2 In the case of rare or vulnerable but more readily replaceable freshwater habitat/assemblages (i.e. habitat may be re-created in 10 – 50 years). In considering the need for replacement habitat, consistency is

needed with the policy on no net loss for BAP habitats, and with Natura 2000 legal obligations. For SSSIs, we may also need to take into account also practical feasibility and local sensitivities before reaching a decision to seek and commit funds for replacement habitat. It may be desirable or possible to realign partially or to allow realignment to progress in stages; although such an approach may increase total costs considerably. The timescale for habitat replacement should be considered; full or partial management of the flood risk to the freshwater habitat may need to be maintained until:

- I. plans are in place for full replacement; or
- II. works for replacement habitat are fully in place but conservation features have not fully re-established; or
- III. replacement habitat has been fully recreated.

In considering the timescale for recreation and the type of habitat created, it should be recognised that we have very little knowledge of how readily some species assemblages can re-colonise and habitats re-form. Issues need to be addressed such as: the water chemistry requirements and likely changes as land (which may be significantly contaminated) is flooded; mechanical and structural differences in soil and sediment type; and even in ditch profiles in original and restored habitats. This lack of information will place limits on our ability to prescribe rigid timescales for habitat re-creation in the way outlined above. We recognise this is a priority area for further research.

7.4 Scale and proximity should be taken into consideration. The scale of replacement habitat required to replace lost freshwater habitat, and proximity needed to existing sites, are considered in a joint Environment Agency/English Nature Habitats Directive guidance note. Broadly, the principle should be to maintain the abundance and distribution of habitats and species within or as close to the site as possible. However, it is accepted that this will not always be possible or even desirable. Other considerations are:

- I. Location adjacent to existing/historical sites increases the likelihood of successful colonisation;
- II. Close proximity to other relevant habitats (e.g. existing coastal feeding areas) will also maintain habitat diversity and sustainability, and increase chances of colonisation;
- III. Selection of areas where water levels can be readily controlled and maintained without the need for major engineering works or where there is a risk of reduction in water supply over the longer term;
- IV. Habitat replacement should not be located where it is not itself sustainable in the medium to long term or where there is a need for the creation or maintenance of flood defences which are likely to cause loss of other nature conservation interests.

7.5 Compliance with legal requirements for designation and practical land acquisition considerations:

7.5.1 The principles and legal requirements underlying Defra's position on the requirements of the Habitats and Birds directives and the implications of coastal squeeze are outlined in Annex 1:

- I. If the freshwater site under pressure from saline inundation is an Special Protected Area (SPA), replacement/recreation should be sought according to the Defra SPA principles paper;
- II. If the site is an Special Area Conservation (SAC) or Ramsar site, compensatory habitat may be required if realignment results in an adverse effect on integrity, there are no alternatives and there are imperative reasons of overriding public importance.

7.5.2 A number of other practical concerns will need further consideration:

- I. Further criteria are needed to help identify those circumstances under which it would be appropriate to change SSSI conservation objectives (and the implications for site condition assessments and for any changes to notification that may be required) where a previously freshwater unit is developing more maritime characteristics, or alternatively those circumstances under which favourable condition is to be achieved by recreating a new area of freshwater habitat. This should be informed by ongoing work in English Nature to develop an approach to "dynamic site conservation" in response to natural change.
- II. Consistency with "no net loss" and habitat creation targets for BAP priority habitats both coastal and freshwater.
- III. Through operating authorities, Defra Flood Management Division will provide funding for projects falling within the scope of Regulation 53 compensation (Habitat Regulations 1994). Questions remain concerning the source of funds or a mechanism to release existing funds for compensation/mitigation works that are not Natura 2000 or Ramsar sites. In some situations English Nature may conclude that such works are not necessary.
- IV. The current scope and future potential for provision of opportunities through Environmental Stewardship requires further consideration⁴. BAP objectives for habitat: decisions will need to be informed by UK BAP action plans for coastal and wetland habitats, some of which are found on the coast and coastal flood plain, and for which targets (recently reviewed) have been set for maintenance, restoration and creation of these habitats.

8. Managing change at the coast: Proposals for improving our engagement with stakeholders

8.1 The need for stakeholder engagement:

8.1.1 As already noted, our coasts are changing and the rate of change is increasing. Government policy promotes working with and adapting to change wherever possible. However, society tends to favour what is familiar in the

⁴ Some initial discussions have been held with RDS area staff in the context of the developing joint EA/EN/RSPB/Wildlife Trusts "Vision" for water and wetlands, which was launched at the World Wetlands Day Conference on 1st February 2006.

environment and people's concerns about proposed changes need to be understood and taken into account. English Nature and/or operating authorities frequently face similar strong public, and sometimes relevant authority, opposition to proposals to change the coast by managed realignment or rollback of sea defences or even by allowing the action of flood defences to continue unabated. This arises from the perceived or actual risk of loss of property (see example of Slapton in Annex 3) or because of changes to other valued aspects of the existing coastal system, such as the current landscape or possible impacts on recreational boating.

8.1.2 The need for sensitive and responsible handling of such concerns is important in relation to the delivery of a sustainable approach to coastal management, for both coastal and freshwater sites. However it is especially acute in relation to our approach to freshwater sites, where we must ensure sufficient relative consideration is paid to socio-economic aspects. The situation may arise that there is a legal requirement to provide compensatory habitat as an outcome of taking plans and projects through the Habitats Regulations in the case of Natura 2000 sites. If, however, uneconomic sea walls are not maintained, there is no corresponding compensation for property loss or damage. Unless handled sensitively, this can increase the appearance of inconsistency. We cannot eliminate such concerns, nor, as this paper has indicated, can we give equal weight to socio-economic and nature conservation requirements in all cases. All decisions need to be fully transparent and it is critical that sufficient resources (both in terms of staff time and financial resources) are available to service this aspect of sustainable coastal management.

8.1.3 Part of this process is about information and understanding. We need to take responsibility for raising awareness of why and how the coastline is changing. The consequences of these changes require a long-term view to be taken to ensure that sustainability is at the core of any decisions. However there is a conundrum here as sustainability itself involves a value judgement as to its definition which itself may be challenged.

8.1.4 Where it can be anticipated that coastal management proposals are going to attract extensive public debate we should adopt a proactive approach to our engagement (if relevant) and explaining the rationale behind English Nature's position. However, it is not always possible to predict which locations are going to generate extensive public debate and discussion. This is in part because they may be triggered by specific, unpredictable events (e.g. irregular cliff falls or a major storm). So even with increased engagement with stakeholders we may be taken by surprise. There is a need for flexibility in order to ensure appropriate involvement of English Nature staff on such occasions.

8.1.5 Engagement with stakeholders with different interests and roles is vital: those who are affected directly or indirectly by the proposals (such as property owners, sailors, walkers), and those who are responsible for or play a part in decision-making (such as local authorities, harbour commissioners, Environment Agency, NGOs). Inconsistent recommendations or decisions

with such partners have added to the complexities of stakeholder engagement. Our strategy should be to ensure comprehensive long-term engagement, especially with the former group, as well as seeking a shared approach with the latter at critical stages throughout the process. Indications from area team staff are that the current staffing levels and existing priorities constrain the amount of time that can be spent on stakeholder engagement.

8.2 Approaches to stakeholder engagement:

A workshop was held (October 2005) with Area team staff, RDS, CA and National Trust, to identify the issues based on local experience, and to make some initial recommendations for action. Some broad principles relating to how English Nature/*Natural England* should engage with stakeholders and partners were developed:

8.2.1 Key stakeholders:

- I. Be prepared to spend time getting to know and understand the range of stakeholders involved, and the full range of opinions and concerns.
- II. Ensure that proposals are based on a sound evidence-base, that our message is comprehensive, covering socio-economic concerns fully, and emphasises the wider as well as the local issues.
- III. Be creative in the ways in which we engage with stakeholders.

8.2.2 Key partners:

- I. Invest in early work with the full range of partners on strategic as well as local issues, aiming for joint policies where we can.
- II. Develop a joint communication plan, and share local engagement (in support of partner's as well as our own agendas).
- III. Understand the role of partners, and develop this aspect of NE role early in the new organisation.

8.3 Arising from the workshop analysis, the following more strategic actions and some shorter term recommendations were developed:

8.3.1 English Nature (and *Natural England*) has a vital role to play in the debate about changing the approach to coastal management. We need a clear, consistent and widely publicised message about dynamic coasts and their management, shared with key partners. It should attempt to restore some of the lost understanding and "connectedness" of stakeholders with a naturally evolving coastline. But this should also include greater involvement in the corresponding socio-economic debate, addressing issues such as developing an improved 'toolkit' of measures to support adaptation to a changing coast and explaining why direct compensation payments are unlikely to be adopted by Government as a management mechanism. To do

this we will need to work more closely with other partners, and to widen our engagement with sectors such as the insurance industry.

8.3.2 A fuller analysis is needed of the costs of the current level of engagement (often reactive) compared with the benefits that would arise from increasing resource allocation to pro-active stakeholder engagement (for example, English Nature stakeholder work relating to Slapton Ley (Annex 3) has amounted to almost ½ person year so far). In controversial cases, effective early engagement has the potential to enable a consensus to be reached and so avoid acrimonious disputes or even the need for a public inquiry. However, there appears an urgent need for more realistic levels of budgetary support (including specialist support, training and financial support for campaigns, literature production, workshops, facilitators etc) for area teams to be able to engage at the level that is appropriate in high profile, time consuming and costly (including risks to our reputation) programmes such as these.

8.3.3 Early dialogue is needed within *Natural England* into the opportunities for synergy (for example in the role of agri-environment measures), but also to ensure that issues such as landscape enhancement and public access to the coast are interlinked with the message that coastal change will occur. In addition we should explore fully the potential offered by *Natural England's* structure for greater community involvement by staff engaged in managing stakeholder engagement in coastal decision-making and in strengthening alliances with sectors representing, for example, cultural heritage interests.

8.3.4 Specific projects are needed in the shorter term to illustrate the true cost-benefits to society of moving to more dynamic coastlines. English Nature/*Natural England* would benefit from understanding how those assets for which we are responsible (National Nature Reserves, Sites of Special Scientific Interest) are likely to change in the longer term. This would enable us to promote a programme of adaptation now and ensure that management actions worked to deliver the best possible long-term outcomes. A similar approach is already being taken by the National Trust for all of its coastal properties (*NT Coastal Risk Assessment, 2005*).

Annex I

Extract from Defra policy guidance paper “Coastal Squeeze Implications for Flood Management - Requirements of the European Birds & Habitats Directives” – for full text see:

<http://www.defra.gov.uk/enviro/fcd/policy/csqueeze.htm>

1. Decisions over plans and projects.

Any flood management plan or project likely to cause a significant effect on a European site must be treated as a plan or project under Article 6(3) of the Habitats Directive. A plan or project to stop maintaining a defence structure would also need to be subject to an appropriate assessment if it were likely to have a significant effect on a European site. Where the land ward boundary of

a European site is coincident with the position of a seawall, and coastal squeeze is an issue, it will be difficult to conclude that maintaining the line of defence will have no significant effect. Where the boundary extends landward of the seawall, and it is likely that any features behind the existing seawall (e.g. freshwater features) would be adversely affected by realignment, realignment may still be justified, but compensatory measures would be necessary to secure the coherence of Natura 2000. English Nature will advise operating authorities as to the preferred option.

2. Avoiding deterioration.

Steps must be taken to avoid flood management structures or activities causing any deterioration/ disturbance that could be significant in relation to Natura 2000 objectives. English Nature will work with operating authorities to help identify where flood and coastal management work (including managed realignment) is needed to maintain or restore SSSIs including Natura 2000 sites in favourable condition.

3. Consistency with Birds Directive.

Compensatory measures for plans and projects, plus any steps taken to secure favourable condition of SSSIs or to avoid deterioration of Natura 2000 sites, must be consistent with the Birds Directive Article 3 requirement to maintain diversity and area of habitat for birds.

Annex 2

Extract from LIFE Nature *Living with the Sea* Project interim guidance on CHaMPs

The LIFE Nature *Living with the Sea* Project provided an interpretation of the sustainability of coastal protection measures. In general, it will be sustainable to conserve such features in situ where to do so would:-

- a) not result in an adverse effect on the integrity of the designated site or other conservation assets, and
- b) would work with rather than against coastal processes.

They must also be technically feasible and should not require excessive capital or maintenance costs disproportionate to the importance of the feature under threat. In regard to cost, where there is more than one technically and environmentally acceptable solution, the lowest cost method should be chosen. In view of rising sea levels, for features seaward of sea defences managed realignment is likely to be the favoured option. Where it is decided that a sea defence cannot be retained on the existing line and new habitat must be created, the sustainability of the location of the new habitat must also be considered. This will involve consideration of the medium to long-term (30-100years) effect of coastal processes, and also of the resources required to ensure the development of suitable replacement habitat and its management (environmental, technical and economic).

Annex 3

Recent case examples:

The following are provided as examples of recent decisions over management action to conserve freshwater habitats (either *in situ* or in an alternative sustainable location) in response to pressures of sea level rise of maintenance of coastal defences, and are illustrative of the need for a coherent and strategic approach in such situations:

Brancaster

Issue: A small, 40ha block of coastal grazing marsh on the Norfolk coast with a good water supply from rising land to the south. Sustainable seawalls to both the east and west ensure that most of the marsh is largely freshwater. On the northern side flood defence was provided by armouring the SAC dune system with gabion baskets (this meant the SAC was in unfavourable condition). In addition the coastline here is in rapid recession because of the natural dynamic of this part of the coast; the dune ridge was expected to fail and defending the site *in situ* was considered unsustainable.

Solution: It was considered that failure of the defence would amount to an adverse effect on the integrity of the SPA. Two practical options were identified:

- i) to allow the defence to fail and recreate the lost interest elsewhere;
- ii) to undertake a partial realignment by building a new seawall part way back and allowing a quarter of the site to become intertidal;

The latter option was chosen; it was considered that this was sustainable over a 50 year time horizon, avoided damaging the SPA interest (as the realignment area was actually part of the dune system and largely dry) and initial costings indicated it was the cheaper of the two options. The site was used as a demonstration site within the *Living with the Sea* LIFE project. Costs of delivering the managed realignment were greater than anticipated although the work has not been subject to post project appraisal to ascertain whether or not the managed realignment was the most cost-effective option. This case study demonstrates the practicality of carrying out flood defence measures on site to meet the needs of different European interests. This provided the opportunity to improve the quality of the remaining grazing marsh through better water level management.

Winterton and The Broads

Issue: At Winterton, off-shore breakwaters at Sea Palling, a seawall, beach recharge and a low dune ridge act as a flood defence for the low lying area behind. In the major 1938 flood event the dune ridge was breached and the resultant flooding reached as far as the Broads. The whole of the north-east coast of Norfolk is generally erosive and despite substantial recent investment in the offshore breakwaters and beach recharge further flood management work is still required. It is unclear whether a single storm event and

overtopping of the seawall and dunes would damage the freshwater interest of the Broads; in the medium to long term, erosion and full scale failure of the defences would damage The Broads. In addition to the Broads SAC, Winterton Dunes are also notified as an SAC and Winterton Ness is a SSSI for its geomorphological interest. The presence of a seawall means that the dune system is in unfavourable condition because it is cut off from its sand supply and its ability to evolve in the face of sea level rise is restricted.

Solution: English Nature has advised the Environment Agency that flood management works are required to sustain the interest of the Broads SAC and to restore the Winterton Dunes SAC. The Environment Agency is currently investigating options. It is likely that in the short term this will involve 'holding the line', it is unclear what option will be adopted in the medium to long term. One option suggested in the Winterton CHaMP by the joint EA/EN/Defra LIFE Nature *Living with the Sea* Project as a *long term* option was for a large scale managed realignment to create an extensive new embayment at least 5 miles deep. This would create a new tidal delta that would reduce erosion on the adjacent open coast, require relocation of whole communities and create a large new wetland (although it would lead to a radical change in the existing habitat mosaic). The cost of creating compensatory habitat under such a scenario would probably be prohibitive and one option in such circumstances might be to accept habitat change.

Slapton Ley, Devon

Issue: In response to sea level rise the gravel barrier beach at Slapton is slowly migrating landwards and infilling the freshwater lagoon behind. English Nature accepts that the resulting change in the habitat mosaic is 'natural change' and part of the ongoing evolution of the site. However this change in the barrier beach is a real issue for the local community as the main coast road in south Devon runs along the top of the beach and is at risk from both erosion and overtopping. In January 2002 part of the coast road was lost due to erosion and this triggered a discussion about future management options. The road was reinstated on a realigned route with no net effect on the SSSI interests. At the same time the SSSI was also re-notified to include the geomorphological interest that had been accidentally excluded at the previous notification. In producing the SSSI documentation English Nature indicated that its preferred option was to see the removal of the road, this was not qualified by an indication of timescales (the intention had been to indicate that we saw this as a long term reality). It was assumed locally that English Nature wanted to see immediate removal of the road. As a consequence English Nature was strongly lobbied on its viewpoint and there were a number of objections to the notification.

Solution: There was a clear need for English Nature to clarify its position and explain its intentions to all of those involved. This was done through a number of avenues; direct discussions with the partnership had been established to look at future options for management of the road and also with the local community action group. In addition a public meeting was organised so that English Nature's approach could be explained to the local community. This

provided reassurance and enabled the SSSI notification to be completed; in addition the partnership looking at options for the road was able to conclude a widely supported staged and flexible approach to future management that addresses the challenges of a dynamic coastline.