



Plymouth Sound and Estuaries Coastal Planning Study

Key Guidance

Tamar Estuaries Consultative Forum

September 2006

Final Report

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1 INTRODUCTION

1.1 Background

The Rivers Tamar, Lynher, Tavy, Plym and Yealm make up the largest estuarine system in southwest England, and is home to over 400,000 people in the catchments and large numbers of visiting recreational users. The area supports landscape and biodiversity assets of national and international value. As well as the Plymouth Sound & Estuaries Special Area of Conservation (SAC) and the Tamar Estuaries Complex Special Protection Area (SPA), much of the area is also notified as Sites of Special Scientific Interest (SSSI). The Tamar river valley, together with the River Lynher and River Tavy, is classified by the Countryside Agency as an area of outstanding natural beauty (AONB). It also includes Europe's largest military port, three commercial harbour authorities, five international marinas, 26 boat yards, four local authorities and two county councils.

The Regional Assembly has earmarked the area (Plymouth, south-east Cornwall & south-west Devon) for high growth, coupled with high urban concentration, during the period leading up to 2026. This scenario includes the building of up to 37,000 new homes and the generation of 42,000 new jobs for a population moving towards 300,000 by 2030.

These trends will bring increased development pressure within the coastal zone of Plymouth Sound & Estuaries. There is a need therefore to ensure that the estuaries nature conservation assets are given due consideration in the making of these planning decisions.

A coastal planning project was carried out by Royal Haskoning on behalf of the Tamar Estuaries Consultative Forum¹ (TECF) to produce planning related guidance on coastal development and biodiversity, taking into consideration the estuaries nature conservation value. The aim of the study was to provide locally focussed, evidence based planning guidance for use by the authorities with jurisdiction over the study area. The full results of the study (including the evidence base) are presented in the Project Report. This documents presents the key findings of the study and main recommendations.

1.2 Scope of the project

The study area for the project comprised the tidal extents of the Yealm, Plym, Tamar, Lynher and Tavy, plus an appropriate area inland to cover developments which may impact on estuarine ecology. The study area extends out to sea as far as a line between Rame Head and Gara Point.

The study considered the direct, indirect and cumulative effects of development within the shoreside, intertidal and subtidal zones. Subtidal developments have been limited to those that are directly linked to intertidal or shore-based developments. The outputs of this study are intended for use by local authorities. The focus has therefore been on development and activities which are under control of the planning regime. Where activities have been identified which are potentially damaging but are beyond the control the planning system, these have been noted, but they were not the primary focus of this study.

¹ The Tamar Estuaries Consultative Forum is a partnership that exists to allow collaboration and consultation in the performance of the members statutory powers and functions.

2 NATURE CONSERVATION INTERESTS

Plymouth Sound and its associated tributaries comprise a complex suite of marine inlets. The ria systems entering Plymouth Sound (St John's Lake and parts of the Tavy, Tamar and Lynher), the large bay of the Sound itself, Wembury Bay, and the ria of the River Yealm are of international marine conservation importance because of their wide variety of salinity conditions and sedimentary and reef habitats. The high diversity of habitats and conditions gives rise to communities both representative of ria systems and some very unusual features, including abundant southern Mediterranean-Atlantic species rarely found in Britain. The estuary contains a series of nature conservation designations which are summarised below and illustrated in **Figure 1**.

- Plymouth Sound & Estuaries SAC
- Tamar Estuaries Complex SPA
- Tamar-Tavy Estuary SSSI
- Plymouth Sound Shore & Cliffs SSSI
- Western King SSSI
- St John's Lake SSSI
- Rame Head & Whitsand Bay SSSI
- Kingsand to Sandway Point SSSI
- Wembury Point SSSI
- Yealm Estuary SSSI
- Wembury Voluntary Marine Conservation Area (VMCA)
- Warleigh Point Devon Wildlife Trust Reserve
- Churchtown Farm Cornwall Wildlife Trust Reserve

Presented below is a list of the issues from which the estuary is currently at threat:

- Physical loss of habitat, e.g. through land claim.
- Physical damage, e.g. through anchoring and trawling.
- Toxic contamination, e.g. from organotins (Langston *et al.*, 2003).
- Non-toxic contamination, e.g. increased nutrient levels from agricultural runoff (Langston *et al.*, 2003).
- Low dissolved oxygen, e.g. in the upper Tamar from natural low river flows
- Biological disturbance, e.g. bait collection.

3 KEY DEVELOPMENT ISSUES

The study analysed planning policy and development plans to determine the predicted levels of development within the study area. It was found there is a requirement in regional policy to construct 14,000-16,000 new dwellings in the Plymouth area by 2016 and 150-200 ha of employment land. Several major land allocations for development and dwelling provisions have been made for 2006-21 which are:

- estimated potential 3500 dwellings in Plymouth's Northern Corridor;
- estimated potential 4000 dwellings in Plymouth's Waterfront Regeneration Areas;
- estimated potential 2500 dwellings in Plymouth's Eastern Corridor;
- approximately 25ha for expansion of mineral extraction works in Plymouth's Eastern Corridor;

- the new community at Sherford;
- the employment allocation at Language; and
- the provision of 1000 dwellings at Torpoint and Saltash.

In addition, general development will take place to meet this requirement. This general development typically comprises small scale, piecemeal type proposals.

The predicted levels of development have been analysed to determine how they may influence the conservation status of the Sound and estuaries. In assisting with this process a matrix of potential environmental impacts with mitigation measures was produced which is presented in Table 1.

The larger development schemes, such as Sherford, Language, Plymstock etc. tend to be located inland away from the foreshore or the estuary viewshed. This limits the direct impacts of these developments on the estuary such as loss of foreshore habitat. However, the large specified developments have the potential to affect the estuaries indirectly. For example, the increase in residential development can place additional pressure on sewage treatment plants and potentially increase the input of nutrients, hydrocarbons and metals into the estuary.

In addition, the smaller scale general development, which is not included within the major land allocations, has the potential to damage nature conservation interests (particularly through cumulative effects), if they are situated adjacent to or on the foreshore. These smaller scale developments can sometimes involve the loss of small areas of foreshore and construction of jetties. This can cause direct loss of coastal habitat and species within the footprint of the development. Waterfront developments may also increase the levels of disturbance to birds if located near bird feeding or roosting areas. If dredging is required, this can also have potential effects on sediment and water quality as well as affecting the communities within the footprint of the dredge. Although on their own the impacts of these developments may not be significant, if many occur the cumulative effects can potentially be serious.

Table 1 Matrix of development types, potential associated ecological impacts and suggested impact reduction measures

Type of development	Potential impacts on ecology of the estuary	Suggested measures to reduce impacts
<p>Waterfront development, coastal defence schemes and other schemes which involve construction of structures adjacent to the shoreline or below mean high water springs</p>	<ul style="list-style-type: none"> • Temporary disturbance to birds during construction if the development is situated close to important bird feeding/breeding or roosting areas • Risk of pollution incidents during construction • Damage to foreshore habitats during construction if construction plant need to access the shore • Loss of intertidal or subtidal habitat within footprint of the development if it involves land claim • Loss of fish nursery areas if the development involves land claim or disturbance to the foreshore • Loss of bird feeding or roosting habitat if the development involves land claim • Potential changes to morphology of the estuary if the scheme involves land claim or construction of structures below mean high water springs • Increase in levels of bird disturbance if the development is situated close to bird feeding areas and will encourage increased numbers of people to use the land/sea interface • Potential impact on bat roosts due to modification of waterfront properties and/or loss of tree roots • Potential impact on otters • Potential impact on lichen communities on river side trees, exposed substrate and mining heritage buildings in the Upper Tamar 	<ul style="list-style-type: none"> • If the development is situated near bird feeding areas, undertake construction outside bird over-wintering period • During construction follow relevant Environment Agency Pollution Prevention Guidelines • If the development involves land-take, create compensatory habitat elsewhere in the estuary, for example by managed realignment. • Minimise working area during construction and only allow construction plant onto the shore if strictly necessary • Design structures to minimise impacts on coastal processes, for example construct jetties on open piled structures rather than solid infill. • Adopt more natural coastal protection measures where possible such as beach nourishment. • Use materials for construction with complex surfaces with crevices or indentations to encourage colonisation by marine flora and fauna. • Use sustainable urban drainage schemes (SUDS) to minimise run-off and associated impacts. • Ensure planning applications are screened for potential impact to bat roosts. Developments should be informed by a Bat Roost Survey if necessary. • Ensure that bridges and culverts are designed to accommodate the safe passage of otters. • Developments with potential to impact on river side trees, exposed substrate and mining heritage buildings on the Upper Tamar should be informed by a Lichen Survey.
<p>Marinas / jetties</p>	<ul style="list-style-type: none"> • Temporary disturbance to birds 	<ul style="list-style-type: none"> • If development is near bird feeding

Type of development	Potential impacts on ecology of the estuary	Suggested measures to reduce impacts
	<p>during construction, if the development is situated close to important bird feeding areas.</p> <ul style="list-style-type: none"> • Loss of seabed habitat within footprint of slipways, jetties or other structures • Risk of pollution incidents during construction • Risk of water quality impacts during operation from input of antifouling or boat-cleaning chemicals etc • Potential disturbance to sediments during construction and subsequent redistribution of contaminated sediments within the estuary • Disturbance to fish passage during piling or blasting works. • Increase in general levels of bird disturbance within the estuary from increase in levels of boating • Potential changes to morphology of the estuary through interruption of coastal processes 	<p>areas, undertake construction outside bird over-wintering period</p> <ul style="list-style-type: none"> • During construction follow relevant Environment Agency Pollution Prevention Guidelines • If the development involves land-take, create compensatory habitat elsewhere in the estuary, for example by managed realignment. • Locate development away from important bird feeding areas. • Encourage best practise by the provision of waste receptor facilities etc. • Design new structures so as to minimise effects on coastal processes e.g. open piling rather than solid infill • Undertake works any works which could affect migration of fish outside Salmon and Allis shad migration season (March to October)
Dredging	<ul style="list-style-type: none"> • Damage to seabed habitat and species within footprint of the dredge • Potential change in type of seabed habitat if the dredge exposes a different type of substratum. • Potential temporary disturbance to birds during the dredge due to presence of dredging plant. • Redistribution of contaminated sediments within the estuary • Increases in levels of suspended sediment during the dredge, with subsequent effects on fisheries • Increases in sediment deposition during the dredge with subsequent impacts on fisheries, shellfisheries and seabed habitats • Changes to estuary hydrology through alteration of coastal processes • Impacts on hydrodynamics and 	<ul style="list-style-type: none"> • Undertake dredging works outside salmon migratory season (in consultation with the Environment Agency) • Choose appropriate dredging plant to minimise levels of suspended sediment. • If the dredge is likely to cause loss of intertidal habitat (either directly or indirectly through alterations to the tidal or wave regime), create compensatory habitat, such as through managed realignment • Consider beneficial use schemes such as water column recharge to minimise loss of material from the estuarine system and minimise effects of disposal. It should be noted that there may be conflicts between water column recharge schemes and the need to reduce mobilisation of contaminated and suspended sediments.

Type of development	Potential impacts on ecology of the estuary	Suggested measures to reduce impacts
	<p>sedimentology of the estuary complex</p> <ul style="list-style-type: none"> • Impacts of dredged arisings at disposal site 	
Footpaths / cycleways adjacent to the estuary	<ul style="list-style-type: none"> • Temporary disturbance to birds during construction, if the development is situated close to important bird areas (such as feeding areas or roost sites). • Increase in levels of disturbance to birds during use of the footpath and cycleway if the development is situated close to important bird areas (such as feeding areas or roost sites). 	<ul style="list-style-type: none"> • If development is near bird feeding areas, undertake construction outside bird over-wintering period • Consider constructing screening in sensitive areas to minimise disturbance to bird feeding or roosting area

4 PLANNING GUIDANCE

The following section contains the key recommendations for planning policy within the Sound and estuaries. The guidance essentially comprises two elements. The first is recommendations for forward planning policy to be adopted by local authorities. The second is essentially a set of guidance and information aimed at development control officers and developers.

4.1 Recommendations for forward planning policy

The guidance is provided below in three key areas:

- checklist of estuary conservation issues to be covered in LDF policy;
- the use of Sustainability Appraisals in estuary conservation; and
- provision of indicators for the monitoring of land-use plan implementation.

This initial guidance suite is intended to ensure that across the estuary, management and policy provision from the county councils and all local authorities is consistent and has an objective of explicitly protecting the nature conservation interests of the estuaries. In the course of the policy review (see main document), policies aimed at environmental protection were found in all documents to differing degrees. However, there was an overall lack of specific coastal/estuarine management policy or measures to directly address the values of the estuary. In order for the estuary to maintain or enhance its nature conservation values as the area grows however, there is a need for specific policy which is more focussed than the general environmental policy found in existing documents.

4.1.1 Checklist of estuary conservation issues

Presented in Box 1 is a checklist of coastal conservation issues which should be covered in a LDF Core Strategy or other DPD policy. It is hoped that this checklist will be used by local authorities to help ensure that policies promote sustainable use of the estuaries and protection of estuary biodiversity. The checklist accords with the guidance offered in PPS 9 and also PPG 20 Coastal Planning, but is more focussed on actual coastal management and current best practice rather than risk reduction or tourism development.

Box 1: Checklist of estuary conservation issues which should be covered in a LDF Core Strategy of other DPD policy

- Identify the role of Plymouth Sound and Estuaries SAC, Tamar Estuaries SPA, the coastal SSSIs and the other non-statutory designations. Recognise the ecological value of the nature conservation interests of the Plymouth Sound and estuaries and the levels of connectivity between the marine, intertidal and terrestrial habitats.
- Provide a strategic framework for the protection, restoration or creation of priority coastal BAP habitats, such as mudflats, and the protection and enhancement of the population and habitats of priority BAP species.
- Promote development away from foreshore areas and put in place a framework for restricting development on the foreshore to those developments which can clearly demonstrate the absolute need for a foreshore location.
- Provide a framework for considering effects on biodiversity of the estuaries when reaching planning decisions. In particular, consider effects of recreation on level of bird disturbance. For example, an assessment of impacts could be required to support all applications which have the potential to affect the intertidal or subtidal. Planning applications could be supported by an assessment of the impacts of anticipated increased levels of disturbance on local nature conservation interests.
- Promote sustainable development by ensuring that any foreshore development schemes are accompanied by a construction plan, which clearly demonstrates how levels of construction phase noise and disturbance have been minimised. Such plans should, wherever possible have regard to the seasonal or episodic requirements of estuary wildlife and demonstrate how construction activity has been planned to reduce any impacts on such wildlife.
- Ensure that adequate waste water treatment plants are provided for new housing allocations so as to ensure that the overall levels of waste water sourced nutrients, contaminants and pathogens within the estuary do not increase.
- Promote the use of sustainable urban drainage systems for all new schemes. Ensure that run-off from sites during construction is also reduced to minimum levels.
- Promote the use of ongoing site management plans for all major developments to promote the use of sustainable water management on the site.
- Encourage coastal habitat creation and enhancement.
- Manage land use in step with naturally coastal functioning processes.
- Protect the estuaries from pollution by discouraging the storage or use of hazardous chemical away from any locations subject to flooding.
- Monitor on a yearly basis the levels of development within the district in order to allow assessment of cumulative impacts on the nature conservation values of the estuary.

Case study: Poole Harbour Commissioners – Note on Information for Appropriate Assessment

Poole Harbour Commissioners has promoted best practise in estuary management by producing a guidance note on the information that must be provided by developers for developments which might affect the Poole Harbour SPA. The note is available on the harbour commissioners website. The note specifies the type of supporting information that must be submitted by developers in order to allow an assessment under the Conservation (Natural Habitats &c) Regulations 1994. The note specifies the information for a decision of likely significant effect and also the information required to support appropriate assessments.

The harbour steering group have requested that applications are supported by a description of the scheme, maps and photographs of the site (including viewlines) and a description of maintenance requirements and any environmental benefits. Where appropriate assessment is required, further information must be provided including an assessment of current disturbance levels, and assessment of the value of the site to birds and as intertidal habitat.

The production of this note has increased the level of transparency for developers about the information that must be submitted and ensures consistency across of the SPA. It is considered that this represents an example of best practise in the provision of planning guidance notes.

4.1.2 The Role of Sustainability Appraisal in Protecting the Estuary

As plans (such as Local Development Frameworks (LDFs)) are reviewed or replaced, a Sustainability Appraisal (SA) is now required under government guidance and to meet with the objectives of the Strategic Environmental Assessment Regulations. The use of SA provides a critical opportunity to ensure that policy is produced via an assessment of its overall sustainability in regard to impacts on the Sound and estuaries.

Given the importance of the Sound and estuaries and the potential for sub-regional growth to impact the estuary it is recommended that in producing their Sustainability Frameworks (the core mechanism within an SA), that the protection of the estuary's nature conservation is seen as a critical sustainability issue. The following matters are considered to be essential to consider in any SA:

- The impacts and the cumulative impacts of the policy suite on estuary nature conservation values;
- The need to ensure that current policy provision has regard to the objectives contained within the Water Framework Directive (WFD);
- The need to ensure that policy provision has regard to the measures contained within River Basin Management Plans (produced under the WFD) expected in 2009;
- Has full regard to the need for an appropriate assessment under the Habitats Directive in regard to the impact of the policy suite on the features of the estuaries European Sites. Note – the Office of Deputy Prime Minister are currently considering how, appropriate assessment should be provided for land use plans, however, the use of the SA is a likely mechanism for this.

A draft indicative Sustainability Framework is provided in **Table 2**, which is indicative of the types of issues for consideration aimed at protecting threats to estuary nature conservation interests.

Table 2 Sustainability Framework

Sustainability Framework	
Ecological Objectives	RSS or LDF Policies for evaluation against sustainability objectives
Prevent deterioration of estuary ecosystems	
Comply with water related standards and objectives for protected areas (established under EU legislation). For example SACs and SPAs under the Habitat Regulations or sites under the Shellfish Waters Directive	
Water Quality Objectives	
Restoration of estuary water quality to 'good status'	
Reduce pollution from priority substances and cease discharges from priority hazardous discharges	
Prevent or limit input of pollutants into the estuary	
Water Resource Management Objectives	
Promotion of water efficient development	

4.1.3 Monitoring of the Implementation of Land-Use Plans

The effectiveness of land-use plans are reviewed on an annual basis and indicators are set by local authorities for the monitoring of their implementation. In order for the monitoring of plans to have a specific focus on estuary nature conservation values, there is a need to ensure that a suite of appropriate monitoring criteria is established across the estuary, which enables a handle to be kept on the manner in which the estuary is responding to development. Such provisions can be used as an evaluative tool in the review of LDF policy, however there is a need to ensure that an estuary wide review and assessment of monitoring is provided. In this respect TECF may provide a critical role, in ensuring that policy is reviewed on a consistent basis, and where appropriate amended to prevent the incremental and/or cumulative degradation of nature conservation interests.

A draft suite of monitoring indicators is provided below, however, the actual suite, would need to be developed and refined on an estuary wide basis.

Table 3 Potential management objectives and monitoring indicators

Objectives	Indicators
Ecological Objectives	
Ensure all major developments have construction and operation method statements detailing good environmental practice	100% of major developments produced construction and operation method statements.
All waterfront developments be supported by an assessment of environmental impacts both locally and on the wider estuary i.e. cumulative effects	100% waterfront developments be supported by cumulative and local environmental assessments
Prevent loss of natural foreshore in the estuary system and enforce provision of compensatory habitat in the event of essential development	No further net loss of foreshore within the estuary system
Water Quality Objectives	
Comply with 'Good Ecological Status' as described in the Water Framework Directive	Compliance with 'Good Ecological Status' as described in the Water Framework Directive
Water Resource Management	
Promotion of water efficient development	Number of developments using SUDS

4.2 Guidance for Development Control

4.2.1 Consultation

During the workshop, it was identified that there is often a lack of clarity as to which organisations should be consulted on development applications within the coastal zone. In order to address this, presented in **Appendix 1** is a list of organisations that should be consulted. Presented in this table are contact details for each organisation as well as a short description of their role and the type of development for which they should be consulted. It should be noted that not every organisation requires consulting for every type of development. It is suggested that these organisations are contacted by developers prior to submission of an application. In addition, they should be consulted during the preparation of any environmental assessments such as EIAs.

Case Study: Poole Harbour Channel Deepening Environmental Impact Assessment

Poole Harbour Commissioners recently carried out an Environmental Impact Assessment (EIA) for proposed deepening of the approach channel to the port. As part of the assessment detailed consultation with stakeholders was carried out from the outset. A series of "topic" groups of relevant stakeholders were formed such as for archaeology and nature conservation. Meetings of each topic group were held on a regular basis to discuss the scope of the EIA, predicted impacts of the scheme, mitigation proposals, provisional findings of the EIA and monitoring. This process encouraged open dialogue between the EIA team, the scheme proponent and stakeholders. It helped ensure that stakeholders concerns were addressed at an early stage in the EIA and that mitigation proposals could be developed where necessary. Public open meetings were also held to encourage wide public engagement in the scheme. In addition, all information was made available via a website.

4.3 Cumulative and In-combination Effects

4.3.1 Introduction

Cumulative impacts are defined as (Hyder Consulting, 1999):

“Impacts that result from incremental changes caused by other past, present or reasonably foreseeable future actions together with the project”.

In the UK, when an Environmental Impact Assessment is carried out, there is a requirement to consider the cumulative impacts of development. In addition, a requirement exists to consider ‘in combination’ impacts under ‘Article 6(3) of the Habitats Directive and Regulations 48(1) of the Conservation (Natural Habitats &c.) Regulations 1994. This states that:

“A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for a plan or project which:

- a) is likely to have a significant effect on a European site in Great Britain (either alone or in combination with other plans or projects), and*
- b) is not directly connected with or necessary to the management of the site;*

shall make an appropriate assessment of the implications for the site in view of that site’s conservation objectives”.

In-combination assessment is required because although, in isolation, the impacts associated with a particular project may not result in an adverse effect on integrity of a European Site, the impacts in-combination with those of other projects may have an adverse effect. Therefore, when carrying out such an assessment it is necessary to consider the impacts from past, present and reasonably foreseeable future plans or projects on a particular environmental resource. If, for example, two projects are predicted to have no adverse effect on the integrity of a European site, it is not sufficient to conclude that in-combination there will be no adverse effect on integrity. A combination of the various impacts may result in the two projects, in-combination, having an adverse effect on integrity.

Case study: Felixstowe South Reconfiguration: Hutchison Ports UK Ltd

Hutchison Ports (UK) Ltd have put forward a number of planning applications for port developments in the area of Felixstowe, Suffolk. The proposals lie close to the Stour and Orwell Special Protection Area. In accordance with the Conservation (Natural Habitats) Regulations 1994, there was a requirement to undertake an in-combination assessment of the various proposals. As part of the most recent planning application, an in-combination assessment was undertaken by Royal Haskoning of the effects of Bathside Bay container port proposals in-combination with Felixstowe South Reconfiguration proposals and other past port development projects. The in-combination assessment involved considering the additive effects of the various schemes and subsequent effects on the SPA. A separate in-combination assessment report was produced which formed an appendix to the Environmental Statement.

4.3.2 Methodology for Cumulative Impact Assessment

Methodologies for assessing cumulative effects are in general still under development. Although there has been much discussion in the literature, there are few established practical methods for undertaking cumulative assessment. However, guidance on undertaking in-combination assessments in relation to effects on European sites is provided in Habitats Regulations Guidance Note 4 (English Nature, 2001). It is recommended that the methods within this guidance are followed for all developments which have the potential to have cumulative effects on the Sound and estuaries.

Cumulative impacts can be additive or interactive. Additive impacts occur where one unit of change to the environment may be added to (or subtracted from) another unit. Interactive impacts are such that the net accumulation of the units of change to the environment is more or less than the sum of all the units of change. Cumulative impacts can also have an effect in terms of the overall temporal impact, scale of impact and/or spatial impact.

The key aspects for consideration, therefore, when conducting a cumulative impact assessment are:

- The temporal and geographic boundaries of the effects of activities;
- The interactions between the activities and the overall ecosystems;
- The environmental effects of the project, and past and future projects and activities; and,
- The thresholds of sensitivity of the existing environment.

Any developments which are likely to have a significant effect on the SPA or SAC will require an in-combination assessment under the Habitats Regulations. With regard to coastal development within Plymouth Sound and estuaries which is not subject to appropriate assessment, it is recommended that planning authorities nevertheless consider the cumulative effects of development, when considering applications. This is particularly important for developments which involve loss of intertidal habitat.

It is recommended that the following procedures are followed to undertake the cumulative or in-combination assessment:

- At an early stage in a scheme's development, the scheme's proponent should discuss the need for cumulative impact assessment through consultation with the consenting authority.
- Determine the geographical scope of the in-combination assessment through consultation with English Nature and the consenting authority. This should be done by first defining the boundaries of project related effects. The geographical scope should include all schemes which have the potential to interact with the proposed development.
- Define the temporal scope of the in-combination assessment. There is no established cut-off date for considering the effects of past projects. In theory, this can extend back as far as records begun. However, when defining the scope, it is important to bear in mind the objectives of the cumulative assessment and set the time frame accordingly.
- Gather details of other projects or plans in the area. It is recommended that this is done by contact with the local authority who should hold details of schemes

recently consented or applied for in the area. Consultation with English Nature can also be useful for this purposes These should include:

- a) Approved but as yet uncompleted plans or projects;
 - b) Permitted ongoing activities such as discharge consents or abstraction licenses, and
 - c) Plans or projects for which an application has been made and which are currently under consideration but not yet approved by competent authorities.
- Identify impacts of these other projects on the environment then identify pathways by which the different projects may have cumulative effects. Through linked pathways, assess possible interactions among environmental effects of the projects and determine the likelihood and significance of cumulative effects of the projects.
 - Produce a statement of the cumulative effects of the proposed development in combinations with others in the area. For example, for developments that results in a loss of intertidal habitat, the total area that will be lost by all relevant plans or projects should be stated.

In the Plymouth area, one of the current areas of concern among the coastal management community is the cumulative effect of many small intertidal developments through incremental land claim. This issue has already been well studied within the Sound and estuaries. In 1999, 'An Audit of Coastal Change in the Tamar Estuaries' (TECF, 1999) was carried out which determined the levels of historic land claim within the estuaries through analysis of historic maps. The study analysed the levels of land claim for industrial, agricultural, housing and other purposes since pre 1750. The study found that between 1750 and 1999, approximately 650ha of intertidal land was reclaimed. The majority of this land claim occurred between 1750 and 1849. Since the 1970's the rate of land claim has declined. Between 1980 and 1989 approximately 16 hectares was lost and between 1990 and 1999 only 0.27 hectares was lost. It is recommended that this study is used during cumulative impact assessments to consider the effects of loss of intertidal.

4.4 Consents for Development within the Coastal Zone

At the workshop, it was identified that there is often a lack of clarity on what consents are required for development in the coastal zone. There are a number of consents and procedures relating to coastal development and their relevance is dependent upon the location and sphere of influence of the development.

Above the mean low water mark, the Town and Country Planning Act is the main vehicle for regulating development. This is facilitated through the establishment of planning policies by local authorities and the requirement for planning permission to be obtained by prospective developers. Adopted policies have statutory weight and provide a legal framework within which decisions on whether to permit or refuse development applications are made.

It should be noted that certain types of development do not require planning permission (through the Town and Country Planning General Permitted Development Order, 1995) and Ministry of Defence developments are not subject to local planning policy. However, if the development is likely to have a significant effect on the environment, it will require planning permission, accompanied by an Environmental Impact Assessment (EIA).

Below the high water mark, a series of different controls also operate. The main types that are usually affect coastal development are detailed in Table 4. The majority of these consents are administered on behalf of Defra by the Marine Consents and Environment Unit (MCEU). It should be noted that the following list is not exhaustive and confirmation should be sought from the MCEU (and other consenting authorities) as to what consents are required for a particular development (see www.mceu.gov.uk for further information). The mostly commonly required consents in the intertidal zone are Food and Environment Protection Act license and Coast Protection Act consent.

Case Study: Solent Forum Marine Consents Guide

In 2002, the Solent Forum recognised that there was often confusion about what consents and permissions are required when undertaking activities in the marine environment. In order to address this, a guide was produced and published on their website which provides a signposting service to show what consents and licences will need to be obtained when undertaking specific activities. The aim of the guide is to help clarify the type of consent needed, where to go to get it and give basic information on the application process.

Table 4 List of the main consents that can be required for coastal development

Name of consent or legislation	Details	Required for	Organisation that administers the consent
Coast Protection Act 1949, Section 34 Navigation Consent (CPA)	The purpose of the act is to ensure that development on the coast does not adversely affect the safety of navigation	Consent is required for the following <ul style="list-style-type: none"> • the construction, alteration or improvement of any works on, under or over any part of the seashore lying below the level of mean high water springs; • the deposit of any object or materials below the level of mean high water springs; • the removal of any object or materials from the seashore below the level of mean low water springs (e.g. dredging). 	MCEU on behalf of Defra
Food and Environment Protection Act 1985 (FEPA) Licenses	The purpose of the FEPA licensing is to ensure that development and works in the coastal zone do not damage the marine environment or human health, or interfere with legitimate uses of the sea.	Under this Act, a licence is required for the deposit of any articles or substances in the sea or under the seabed.	Licences are issued through the MCEU following consultation with various bodies e.g. English Nature, Environment Agency etc.
Town and Country Planning Act 1990	Regulates development above the low water mark	Any development above the low water mark i.e. on land. Planning permission required for any development normally covered through the Town and Country Planning General Permitted Development Order (1995) that may significantly effect the environment.	Local planning authority.

Name of consent or legislation	Details	Required for	Organisation that administers the consent
<p>The Conservation (Natural Habitats &c) Regulations 1994 – “appropriate assessment”</p>	<p>These regulations control development with SACs and SPAs by restricting consent for developments which may affect the ecology of the sites. The first test to be applied is whether the planned project is likely to have significant impact on the SAC or SPA site. This decision is made by the consenting authority.</p> <p>Should it be concluded the work is likely to have significant impacts on the SPA or SAC, it will normally undertake an appropriate assessment of the works to assess whether the impacts will be adverse.</p> <p>The applicant is normally required to submit information to the consenting authority on the nature of the development and its predicted impacts. Unless the conclusion is there will be no adverse impact, the applicant will have to consider mitigation measures for these effects. If the consenting authority decides there is no alternative approach, and that there are reasons of overriding public interest for it to proceed, the project may only be consented after a suitable compensation package has been agreed.</p>	<p>Any application for proposed works within or adjacent to the Plymouth Sound and estuaries SAC or the Tamar Estuaries Complex SPA</p>	<p>Usually the local authority or the MCEU, upon advice from English Nature.</p>
<p>Telecommunications Act 1984 (as amended by the Communications Act, 2003)</p>	<p>This Act covers the installation of telecommunications cables below the level of MHWS</p>	<p>Consent required for any proposal to install telecommunications cables at sea and in other tidal waters below the level of Mean High Water Springs (MHWS).</p>	<p>Consent is required from the Secretary of State for Environment, Food and Rural Affairs; administered by the MCEU</p>

Name of consent or legislation	Details	Required for	Organisation that administers the consent
Government View Procedure (Crown Estate)	Regulates marine aggregate extraction. It is an extended consultative process which follows the principles of land based planning procedures. The procedure is currently non-statutory and will be replaced in due course by the statutory mechanism	Marine aggregate extraction from seabed owned by the Crown Estate	Administered by the Minerals and Waste Planning Division of the Office of the Deputy Prime Minister (ODPM)
Discharge Consent for the Environment Act, 1995	To regulate the discharge of sewage, trade and other effluents.	Required for all discharges into a water body.	Consents are issued by the Environment Agency under the Environment Act, 1995.
Harbour Revision Orders (HRO)	Authorise works within established harbours, where these lie outside the existing powers of the harbour authority. They are also the vehicle for amending the powers and areas of a Harbour Authority.	For works within established harbours that lie outside of the existing powers of the Harbour Authority.	HROs are made by the Secretary of State for Transport.
Harbour Work Licenses (Harbour Authorities)	Regulate works within harbours aiming to protect safety and navigation. Some harbour authorities have the power to regulate works within their areas through the issue of harbour works licences.	Works within some harbour authorities	Harbour Authorities
Land Drainage Consent	Under the Land Drainage Act 1991, prior written consent is required for any mill, dam, weir or similar obstruction for any culvert (or alteration to culvert) likely to affect the flow in an Ordinary Watercourse.	Required for any mill, dam, weir or similar obstruction for any culvert (or alteration to culvert) likely to affect the flow in an Ordinary Watercourse	Written consent is obtained from the Environment Agency.

Appendix 1

Guidance on Consultation

Presented in the table below are contact details for each potential consultation organisation as well as a short description of their role and the type of development for which they should be consulted.

Organisation	Role	Type of Development to be Consulted for	Contact Details
Associated British Ports (ABP)	ABP's operation within the Port of Plymouth is centred at Millbay Docks. From here they are engaged in commercial activities and are consulted as a major land owner and user of Plymouth Sound.	Any developments that fall within the boundaries of Millbay Docks and the Port of Plymouth.	Associated British Ports, Plymouth Port Office, Millbay Docks, Plymouth PL1 3EF Tel: 01752 662191 Fax: 01752 222070
Defra - Marine Consents and Environment Unit (MCEU)	Responsible, on behalf of the Defra, for the administration of a range of applications for statutory licences and consents to undertake works in tidal waters and at sea. The unit provides advice on the consents required for development below MHWS and the extent of environmental information required to support these consents.	All developments of which any part extends beyond the Mean High Water Springs (MHWS) mark.	Marine Consents & Environment Unit 3 - 8 Whitehall Place (2nd Floor - Area D) London SW1A 2HH www.mceu.gov.uk
Devon County Council	Under the provisions of Schedule 1 of the Town and Country Planning Act (General Development Procedures) Order, 1995, district planning authorities are required to consult with the County Council as Strategic Planning Authority.	Any developments which: 1. Conflict with policies contained within the Development Plan 2. By reason of their scale, nature or location, are of major importance for the implementation of the approved Structure Plan 3. Would prejudice the use of land 'safeguarded' as having minerals or waste disposal potential	Devon County Council Lucombe House, Topsham Road, Exeter, Devon EX2 4QW Tel: 01392 383019 Fax: 01392 382135
Devon Sea Fisheries Committee (DSFC)	Devon Sea Fisheries Committee primary role is the enforcement of European, national and local legislation in relation to the conservation of fish stocks. The Committee's jurisdiction and byelaw making powers extend from the coastline	Any developments below MHWS; especially where dredging is involved.	Devon Sea Fisheries Committee Office No.9, Fish Market, The Quay, Brixham, Devon, TQ5 8AW Tel: 01803 854648 Fax: 01803 859217 www.dsfc.aol.com

Organisation	Role	Type of Development to be Consulted for	Contact Details
	<p>out to 6 miles. All of the Tamar Estuaries, including the western banks of the river are included in the Devon area under an arrangement with Cornwall County Council.</p> <p>They advise on how developments may have a detrimental impact on the commercial fish stocks within the area.</p>		
Caradon District Council	<p>The Development Control Department assesses all Planning Applications for the district and regulates unauthorised development.</p>	<p>Any developments that fall within the administrative boundaries of this council.</p>	<p>Caradon District Council Luxstowe House, Liskeard Cornwall, PL14 3DZ Tel: (01579) 341000 Fax: (01579) 341001</p> <p>www.caradon.gov.uk</p>
Cattewater Harbour Commission	<p>The commission is the Statutory Authority for the Cattewater, having an obligation to conserve, and facilitate the safe use of, the harbour. In addition, the commission is, under the Pilotage Act 1987, the Competent Harbour Authority for the Port of Plymouth and is charged with the assessing the need for pilotage and providing sufficient assets to cover the demand. This duty is carried out within a joined arrangement with the MoD</p>	<p>Any developments that fall within the jurisdiction of the Cattewater Harbour Commission.</p>	<p>Cattewater Harbour Commission 2 The Barbican, Plymouth PL1 2RLR Tel: 01752 665934 Fax: 01752 253624</p> <p>Info@plymouthport.co.uk</p>
Centre for Environment, Fisheries and Aquaculture Science	<p>Cefas is an executive agency of Defra and provides advice on disposal of materials at sea under the Food and Environment Protection Act. They will provide advice on the extent of sediment sampling required to support FEPA applications.</p>	<p>Any developments which require a FEPA license (such as dredging or disposal at sea).</p>	<p>Remembrance Avenue Burnham-on-Crouch Essex CM0 8HA Tel: +44 (0) 1621 787200 Fax: +44 (0) 1621 784989 www.cefas.co.uk</p>

Organisation	Role	Type of Development to be Consulted for	Contact Details
Cornwall County Council	<p>The Planning and Regeneration Service delivers a very wide range of both statutory and non-statutory services which includes:</p> <ul style="list-style-type: none"> • Local & Strategic Planning • Planning Applications • Planning Compliance • Coastal Planning • Stewardship of the natural and historic environment. 	Any developments that fall within the administrative boundaries of this council.	<p>Cornwall County Council County Hall, Truro TR1 3AY Tel: 01872 322000</p> <p>www.cornwall.gov.uk</p> <p>planningconsents@plymouth.gov.uk</p> <p>planningpolicy@plymouth.gov.uk</p> <p>coastal@plymouth.gov.uk</p>
Countryside Agency	The Countryside Agency advice on potential impacts on the landscape character and visual amenities.	All developments that have potential to influence the landscape of an area.	<p>The Countryside Agency 2nd Floor, 11-15 Dix's Field, Exeter EX1 1QA Tel: 01392 477150 Fax: 01392 477151 www.countryside.gov.uk</p>
English Nature	English Nature are the statutory body charged with the role of preserving the wildlife and natural heritage of England, working with land managers and owners on a local basis. English Nature will advise whether "appropriate assessment" is required for development under the Habitats Regulations. They will also advise on the scope of environmental assessment required for developments.	All developments (especially those within SACs, SPA or SSSIs).	<p>www.english-nature.gov.uk English Nature - Devon Team Level 2, Renslade House, Bonhay Rd, Exeter, Devon, EX4 3AW Tel: 01392 889770 Fax: 01392 437999</p>
English Heritage	Government body responsible for the protection of cultural heritage, such as scheduled monuments.	Any developments that have the potential to affect cultural heritage, such as listed buildings, scheduled monuments or conservation areas.	<p>29 Queen Street Bristol www.english-heritage.gov.uk</p>
Environment Agency	Consult on all developments, advising on environmental impacts, also provides on a range of	All developments	<p>Environment Agency - Cornwall Area Sir John Moore House, Victoria Square, Bodmin, Cornwall, PL31</p>

Organisation	Role	Type of Development to be Consulted for	Contact Details
	scientific aspects including standards for sampling/monitoring for water and sediment quality, fisheries and waste management. They will also advise on the need for a flood risk assessment and other Environment Agency consents.		1EB Fax: 01208 78321 www.environment-agency.gov.uk 08708 506 506
Marine Fisheries Agency (MFA)	The MFA is an executive agency of Defra offers advice regarding influences on fish stocks in the local area.	Developments that extend beyond MHWS, in areas important for fishing. To be consulted in combination with SFC.	www.mfa.gov.uk Fish Quay, Sutton Harbour, Plymouth, PL4 0LH Tel: 01752 228001 Fax: 01752 221239 www.defra.gov.uk
National Trust	The National Trust works to preserve and protect the coastline, countryside and buildings of England, Wales and Northern Ireland.	Any developments that may influence National Trust property or land.	Killerton House Broadclyst Exeter EX5 3LE Tel: 01392 881691 Fax: 01392 881954 www.nationaltrust.org.uk
Plymouth City Council	The Planning and Regeneration Service delivers a wide variety of both statutory and non-statutory services which includes Local and Strategic Planning, Planning Applications, Planning Compliance, Coastal Planning and stewardship of the natural and historic environment.	Any developments that fall within the administrative boundaries of this council.	<u>Plymouth City Council</u> Planning & Regeneration, Civic Centre, Plymouth, PL1 2EW Tel: 01752 304354 Fax: 01752 304294 planningconsents@plymouth.gov.uk or planningpolicy@plymouth.gov.uk www.plymouth.gov.uk
Queen's Harbour Master	Established by statute, the Queen's Harbour Master is the harbour authority for the Dockyard Port of Plymouth. They are charged with protecting the Port in the national interest, such that the use by the Royal Navy and other defence interests is assured. Integral in this task is the operational and administrative management of the waters of the Port to the benefit of all users. The	Any developments that fall within the boundaries of or influence the Dockyard Port of Plymouth.	<u>The Queen's Harbour Master, Plymouth</u> Longroon House, RM Stonehouse, Plymouth PL1 3RT Tel: 01752 836485 Fax: 01752 836944

Organisation	Role	Type of Development to be Consulted for	Contact Details
	harbourmaster will advise on the potential for navigational conflict from developments.		
Royal Society for the Protection of Birds (RSPB)	The RSPB provides expert knowledge on the birds present in an area. They can advise on minimising impacts through seasonal development etc.	Any developments that impact sites designated for their importance in bird populations/habitats to support visiting wildfowl.	The RSPB Keble House Southernhay Gardens Exeter Devon EX1 1NT United Kingdom Tel: 01392 432691 www.rspb.org.uk
South Hams AONB Unit	Management of the AONB	Any developments that fall within the South Hams AONB or have the potential to affect the site.	South Devon AONB Unit Follaton House Plymouth Road Totnes, Devon TQ9 5NE 01803 861384 enquiries@southdevonaonb.org.uk
Sutton Harbour Company	The Sutton Harbour Company under the Sutton Harbour Acts and Orders 1847 to 1988 is responsible for navigation, quays, the Sutton Harbour Marina, the Fish Market, roadways and other developments within the Harbour.	Any developments that fall inside the jurisdiction of the Sutton Harbour Company.	Sutton Harbour Company North Quay House, Sutton Harbour, Plymouth PL4 0RA Tel: 01752 204186 Fax: 01752 205403
South Hams District Council	Planning and Building Control seeks to ensure that new development is in line with planning policies. They are responsible for processing any planning applications within the South Hams District.	Any developments that fall within the administrative boundaries of this council	South Hams District Council Follaton House Plymouth Road Totnes Devon TQ9 5NE Tel: (01803) 861234 Fax: (01803) 866151 www.south-hams-dc.gov.uk
Tamar Valley AONB Unit	Management of the AONB	Any developments that fall within the Tamar Valley AONB or have the potential to affect the site.	Tamar Valley Service, Cotehele Quay, Cotehele, St Dominick, Saltash, Cornwall, PL12 6TA Tel. / Fax: 01579 351681 http://www.tamarvalley.org.uk
Tamar	TECF is a non-statutory	Any developments within	TECF

Organisation	Role	Type of Development to be Consulted for	Contact Details
Estuaries Consultative Forum (TECF)	partnership that exists to allow collaboration and consultation. Representatives from many organisations sit on this Forum offering a wide knowledge base. TECF hold much data on the nature conservation interests of the estuary and may also act as a focal point for consultation	the Plymouth Sound & Estuaries SAC, and the Tamar Estuaries Complex SPA.	Coastal Management Planning & Regeneration Department of Development Plymouth City Council Civic Centre Plymouth PL1 2EW Tel: 01752 304339 Fax: 01752 304294 www.tamar-estuaries.org.uk
West Devon Borough Council	The Planning and Development Control departments of the council are involved in processing any planning applications for development within it's administrative border.	Any developments that fall within the administrative boundaries of this council.	<u>West Devon Borough Council</u> Kilworthy Park, Tavistock, PL19 0BZ Tel: 01822 813692 Fax: 01822 813634 www.westdevon.gov.uk
Wildlife Trusts	Responsible for managing and preserving local areas of nature conservation interest, usually within a specific boundary.	Any developments that may potentially influence Local Nature Reserves or Wildlife Areas, either directly or indirectly.	Devon Wildlife Trust 35-37 St David's Hill Exeter, Devon, UK EX4 4DA Tel: 01392 279244 Fax: 01392 433221 contactus@devonwildlifetrust.org www.devonwildlifetrust.org Cornwall Wildlife Trust Five Acres Allet Truro Cornwall TR4 9DJ Tel: 01872 273939 Fax: 01872 225476 info@cornwt.demon.co.uk www.cornwallwildlifetrust.org