1. Background to the Exe Estuary

Image 1a: Aerial view of the Exe Estuary
Source: EEMP

The Exe Estuary in Devon, England encompasses over 3,000 hectares of diverse aquatic and terrestrial habitats. It is designated as an Estuary of international importance for nature conservation.

Protected from the open sea by the sand spits of Dawlish Warren and Pole Sands, the Estuary is naturally an ideal environment in which wild birds can feed and breed. These physical characteristics also make it a perfect open space for shellfish cultivation, tourism and a wide range of recreational activities. This report describes the Exe catchment area, investigates its value as a resource for Devon, and explores trends in diverse characteristics over time. The resulting collection of facts and figures contributes to our understanding of the condition of the Exe and will inform its future management.

Figure 1a overleaf shows the main settlements around the shores of the Exe Estuary.

Geology of the Exe Catchment

Figure 1b illustrates the different types of geology found within the Exe Estuary catchment. In the upper catchment the geology is predominantly Devonian siltstones and sandstones (408 – 360 million years old). The carboniferous rocks (360-286 million years old) in the west of the catchment are typically mudstones altered to low grade shales. The end of the Triassic Period (195 million years ago) was marked by a marine incursion which flooded small areas of the south eastern part of Devon with a shallow sea in which a succession of limestone and shales were deposited. These deposits are known as the ‘Jurassic Beds’.

The majority of soil types are well-drained, fine loams. Exmoor is characterised by low permeability peaty soils and the central catchment demonstrates loamy subsoils over clay subsoil, which are generally slowly
Background to the Exe Estuary

Figure 1a: The Exe Estuary
Source: DCC 2014 and OS 2014

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Figure 1b: **Geology of the Exe catchment**

Source: DCC 2006 and OS 2014 background mapping. EA 2003 data.

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permeable (Environment Agency, 2003). River erosion during the Quaternary Period (10 million years ago) gradually created much of the present day landscape of Devon. The rises in sea levels that occurred with the melting of great ice sheets caused many of Devon’s river valleys to be drowned by the sea, creating the estuaries of the Dart, Taw and Torridge, and the Exe (Devon County Council, 2004).

Geology and soil type are important determinants of erosion levels, sediment dynamics and siltation. The different geological environments provide the basis for a variety of habitats which support a wide range of species within the Exe catchment.

1.1 Land Ownership

The Exe Estuary has seven fundus¹ owners: (i) The Crown Estate, (ii) Manor of Kenton (Powderham Estate), (iii) Lympstone Fishery & Harbour Association, (iv) East Devon District Council (EDCC), (v) Teignbridge District Council, (vi) Devon Wildlife Trust and (vii) Martin McGahey (as shown in Figure 1c).

The Crown Estate and EDDC have leased a substantial part of their fundus to voluntary bodies with commercial proposals, such as the Lower Exe Moorings Association (LEMA) and the Topsham Mooring Owners' Association (TMOA), and with conservation proposals, such as Devon Wildlife Trust (Old Sludge and Exe Reed Beds reserves) and EDDC (Exmouth Local Nature Reserve). Devon Wildfowling and Conservation Association (DWCA) also has a lease agreement with the Crown Estate to practise wildfowling in some intertidal areas of the Estuary.

The fundus of the inner and outer part of Dawlish Warren National Nature Reserve is owned and managed by the Devon Wildlife Trust and Teignbridge District Council respectively, though the Manor of Kenton retains manorial rights over the land.

¹ The seabed in a tidal river below low water mark
Background to the Exe Estuary

Figure 1c: Freeholds on the fundus of the Exe Estuary
Source: DCC 2014 and OS 2014 background mapping.
CE 2006, PE 2006, DCC 2014 and MG 2014 data

1 Approximate boundary derived from map of Crown Estate interests held by DCC
2 As above with additional reference to a map from Deed of Compromise 21/03/1997 supplied by the Powderham Estate
3 Approximate boundary derived from fundus map supplied by Mr Martin McGahey 13/02/2014
4 Manorial rights retained by Manor of Kenton

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1.2 Population

The population of the Exe catchment area has increased considerably between 1981 and 2012, from around 220 000 to 294 000 people (Figure 1d), approximately a 33% increase (DPPSA, 2012, West Somerset Parishes 2011 Census and Taunton Deane 2011 Census). The consequent pressures on the natural and human resources are considerable and require careful management in order to avoid degrading the rich and diverse environment on which people rely.

Figure 1e shows population growth in the vicinity of the Exe Estuary Between 1811 and 2012.

Figure 1e: Population growth in the vicinity of the Exe Estuary (1811 - 2012)
Source: Histpop (Historical census records); ONS 2001; DPPSA 2012
Background to the Exe Estuary

Figure 1d: Population density within the Exe Catchment
1.3 Social and Economic Background

Image 1b: **Exeter Quay**  
Source: Midge Kelly

Image 1c: **Exmouth Marina**  
Source: EEMP

Image 1d: **Main roads crossing the Exe Estuary**  
Source: EEMP

Image 1e: **New housing developments around the Exe Estuary**  
Source: DCC
Human Settlement

Migration trends show an average increase in the number of people living in the areas surrounding the Exe Estuary, although as economic growth has slowed since 2008, so has in-migration.

When the population of Devon increases, the demand for property continues to grow and coastal and waterside properties are in high demand. In 2011, 43.1% of Devon’s population lived in coastal wards (Census, 2011). Figure 1f shows that between 1983 and 2009 average house prices in the districts surrounding the Exe Estuary have increased about eight fold (Land Registry, 2012).

![Figure 1f: House prices in districts adjacent to the Exe Estuary 1983 - 2009](source: ONS and Land Registry 2012)

New Housing Developments

In the next few years, the number of people living close to the Exe Estuary will increase, as a result of housing allocations in the local planning documents of Exeter City, East Devon District and Teignbridge District Councils, and outstanding planning permissions and other developments. In the next 12-19 years the expected housing growth within 10km of the Exe Estuary is approximately 47,000 new homes. This includes 15,000 planned new homes in East Devon and 12,000 planned new homes in Exeter City by 2026. By 2033, 12,400 new homes are planned in Teignbridge.

According to the South East Devon European Site Mitigation Strategy (2013), the number of homes within a 1km distance of the Exe Estuary is set to increase by 20% and within a 10km distance by 29% to 2026. New housing will increase the number of local residents and the consequences of this growth will affect different sectors, such as education, healthcare, local economy and natural environment. The three local authorities around the Estuary have a legal duty to ensure no adverse effects occur to the Estuary as a result of their strategic plans and it is therefore necessary to address the anticipated impacts.
Index of Multiple Deprivation

The Index of Multiple Deprivation (Communities & Local Government, 2010) is a measure which combines data on deprivation in 7 "domains": education, employment, income, health, crime, barriers to services and environment. Scores are ranked to show the relative degree of deprivation of all the Lower Super Output Areas (LSOAs) in England (32,482), 457 of which are in Devon.

As a county, Devon has a level of deprivation which is much lower than the national average but there are some Devon LSOAs that feature in the top 20% nationally - most of these are either in Exeter or North Devon (Ilfracombe and Barnstaple) but there are isolated areas elsewhere. When looking at comparative deprivation within Devon, the areas bordering the Exe Estuary of relatively higher deprivation are in Exmouth, Dawlish and on the edge of Exeter. In contrast there is relative affluence in Exminster, Exton, Topsham and Lympstone (see Figure 1g).

Figure 1g: Relative deprivation in the vicinity of the Exe Estuary
Source: Communities and Local Government 2010
Employment

The 2011 census (Figure 1h) shows that employment in the districts bordering the Exe Estuary is dominated by work in the wholesale and retail sector, followed by health and financial services (Office of National Statistics, 2012). The Met Office based in Exeter is also a major employer in the region.

Figure 1h: The range of economic activities in the vicinity of the Exe Estuary
Source: 2011 NC. Crown copyright 2011
1.4 Managing the Exe Estuary

Managing the Exe Estuary is an essential part of ensuring its sustainable development and use. Management is complex and involves balancing European and national legislation with local Byelaws and other competing priorities. With three local authorities bordering the Exe Estuary and a range of organisations responsible for different activities the need for a co-ordinating management body such as the Exe Estuary Management Partnership is essential to promote an efficient, integrated approach.

The Exe Estuary Management Partnership

Management of the Exe Estuary is based upon the principle of voluntary co-ordination between the different interests involved. The Exe Estuary Management Partnership (EEMP) exists to provide a framework allowing the integration of these interests and responsibilities to achieve common objectives. This means that, whilst the Partnership has no statutory powers, it provides a contact point and communication line to encourage co-operation between the authorities and agencies with legal powers and responsibilities for the Estuary (such as Devon County Council; Exeter City Council; East Devon and Teignbridge District Councils; Dawlish and Exmouth Town Councils; Starcross and Woodbury Parish Councils; Natural England; RSPB; Environment Agency; Devon and Severn Inshore Fisheries and Conservation Authority; and Lympstone Fishery and Harbour Association). This encourages better use and development of existing resources and more effective management by statutory and non-statutory bodies.

The Partnership also provides opportunities for the local community to contribute to the decision making required to safeguard the Estuary through easy access to an Exe Estuary officer, and a twice yearly interactive forum event. The Exe Estuary Officer keeps the public informed through regular newsletters (the Exe-Press), publications, leaflets, information boards, meetings, forums, events and maintenance of an interactive website with up to date information on Estuary-related issues - [www.exe-estuary.org](http://www.exe-estuary.org)
Background to the Exe Estuary

The Statutory Bodies on the Exe Estuary

Devon and Severn Inshore Fisheries and Conservation Authority (D&SIFCA) took over the fisheries and conservation management responsibilities from the Devon Sea Fisheries Committee (which no longer exists) and the Environment Agency on 1st April 2011. Its overall aim is to achieve full compliance with EU, UK and local fisheries and environmental legislation, but it has other key roles relating to the sustainable use of fisheries resources and greater consideration of the wider environmental impacts of fishing activity.

Natural England is the Government agency that champions the conservation of wildlife and geology throughout England. It also manages conservation designation and monitors the quality of designated sites.

The Environment Agency is the public body responsible to the Secretary of State for Environment, Food and Rural Affairs. Its fundamental purpose is to protect and improve the environment for both people and wildlife. In relation to the Estuary, the EA’s remit includes maintaining or improving water quality, controlling environmental pollution and flood and coastal risk management.

There are eight local authorities involved in managing the Exe Estuary – Devon County Council (DCC), three District level authorities (East Devon, Teignbridge and Exeter City), Exmouth and Dawlish Town Councils and the Parish Councils of Starcross and Woodbury. DCC has responsibility for transport, public rights of way, some spatial planning, education, emergency planning, economic development and flood risk in relation to surface run-off, ordinary watercourses and groundwater. The District level authorities have responsibility for many aspects of spatial planning, and have powers to create and enforce Byelaws. Many of the local authorities own land around the Estuary, some of which is managed for recreation and/or as nature reserves.

Harbour Authority

Exeter City Council owns the Exeter Ship Canal and is the main harbour authority for the navigation channel extending from the City of Exeter to the open sea. Duties and powers are imposed through general and local legislation and in some cases by common law. Some duties and powers comprise: pilotage, lighting and buoying responsibilities; waste management and oil pollution; power to charge dues; power to raise, remove or destroy wrecks and to prohibit dangerous vessels from entering the harbour area; dredging operations and hydrographic surveys; Byelaws enforcement; and environmental duties under the EC Habitats Directive.
Background to the Exe Estuary

The Exe Estuary Forum

The Exe Estuary Management Partnership has held Forum events since 2007 and since then twice-yearly meetings have taken place. The Forum gives local residents and organisations the opportunity to learn about the aims of the Partnership, feedback comments on how the Partnership could better communicate with, represent and support them as well as the opportunity to meet and hear from the key people directly involved with managing aspects of the Estuary. The Forum has a chair and a vice-chair who are elected every two years to represent the interests of the local community. The Forum chair and the vice-chair automatically have places on the EEMP Management Group.

Management Boundaries

The Exe Estuary Partnership defines its spatial management boundary as extending to the 5 metre contour line. This boundary encompasses the area which is most directly influenced by Estuary activities. However, some of the data presented extends beyond this specific spatial boundary. Much of the socio-economic data is recorded at electoral ward and parish level, and much of the environmental information extends to the wider catchment area.

The hydrological catchment boundary of the River Exe is a vast area covering some 1530km² and any water that drains from this land will influence the health of the River and Estuary further downstream, for example by causing diffuse pollution. When managing the Exe Estuary the effects of activities upstream and their potential influence on the lower catchment must be considered.
Background to the Exe Estuary

Overview: The Exe Catchment

Key
Area of interest (on main map)
Catchment of the River Exe
County Boundaries

Figure 1: Area managed by the Exe Estuary Partnership
Source: DCC 2014 and OS 2014
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