



The English Riviera

GEOPARK

Official application for nomination of the region

Area entered:
Torbay, Devon, The United Kingdom

Application submitted by:
Torbay Council

Date: 12 February 2007

CONTENTS

A. The English Riviera Geopark – Summary	3
A.1 Name of the region	3
A.2 Location	3
A.3 Description of Torbay	3
A.4 Detailed description of the organisation in charge	3
A.5 Enclosures	4
B. Scientific description of the European Geopark territory	5
B.1 Introduction	5
B.2 Full geological description of the region	5
B.3 List and description of the geological sites	6
B.4 Details on the interest and international, national or regional significance of these sites	6
B.5 Current or potential pressure on the Geopark and these sites	6
B.6 Current status in terms of protection of the sites	7
B.7 Site management data	8
B.8 List and description of non-geological sites	8
C. Arguments for nominating the region as a European Geopark	9
C.1 Comprehensive analysis of the region’s potential for the development of economically sustainable geotourism	9
C.2 Description of existing geological institutions and activities	11
C.3 Policies for the protection, enhancement and economic development of the geological heritage	21
C.4 The territory’s interest in joining the network	21
D. General information on the territory	22
D.1 Economic activity	22
D.2 Provisions for the protection of the region	23
D.4 Existing facilities and details of their collaboration with the Geopark	28
D.5 Future facilities planned	29
APPENDIX A	30
APPENDIX B	32
APPENDIX C	35
APPENDIX D	39

A. THE ENGLISH RIVIERA GEOPARK – SUMMARY

A.1 Name of the region

The Geopark is within the administrative boundaries of Torbay, Devon, in the South West of England, UK.

A.2 Location



A.3 Description of Torbay

Torbay, the area combining the three towns of Torquay, Paignton and Brixham, is a south and east facing bay sheltered from the prevailing south westerly winds, situated on the south coast of Devon. It grew up from a small fishing village during the 19th and early 20th century as an all year round sea-side resort with a reputation for a mild climate and dramatic coastal views from the surrounding coastal hills. Torbay, and particularly the town of Torquay, became a Victorian sea-side resort of great style and refinement and acquired the name of “The English Riviera”.

Torbay’s administrative boundaries include 62.4 km² of land and 41.5 km² of sea. The terrestrial area is mainly urban or sub-urban in character but approximately 45% of the land area remains undeveloped, as either farmland, woodland or other open space. The coastline is dramatic, thanks to the area’s geology, and has played a significant part in the development of the territory. Torbay has a population of 132,000 residents, with a higher than average number of retired people, who have come to the area to enjoy its mild climate and attractive environment.

A.4 Detailed description of the organisation in charge

The lead partner in the development of the Geopark is Torbay Council, the local government organisation for the area. The Council is responsible for a wide range of public services including environmental protection, economic development, children’s services, transport, housing, leisure and culture. The Council is the largest single employer in the area and works in close partnership with public and private agencies and the voluntary sector to agree and deliver overall ambitions for the community. One such partnership is ERGO, the body responsible for developing the Geopark in the area.

The English Riviera Geopark Organisation

The English Riviera Geopark Organisation (ERGO) is responsible for the overall coordination and management of the Geopark. The key agencies concerned with managing Torbay's heritage established this organisation in 2007, which is a formally constituted body charged with overseeing the Geopark. Its membership is described in more detail in section C.2. below, whilst the organogram shown at Fig 2. indicates the overall roles of each partner. The full constitution of the ERGO can be found in **Appendix A**.

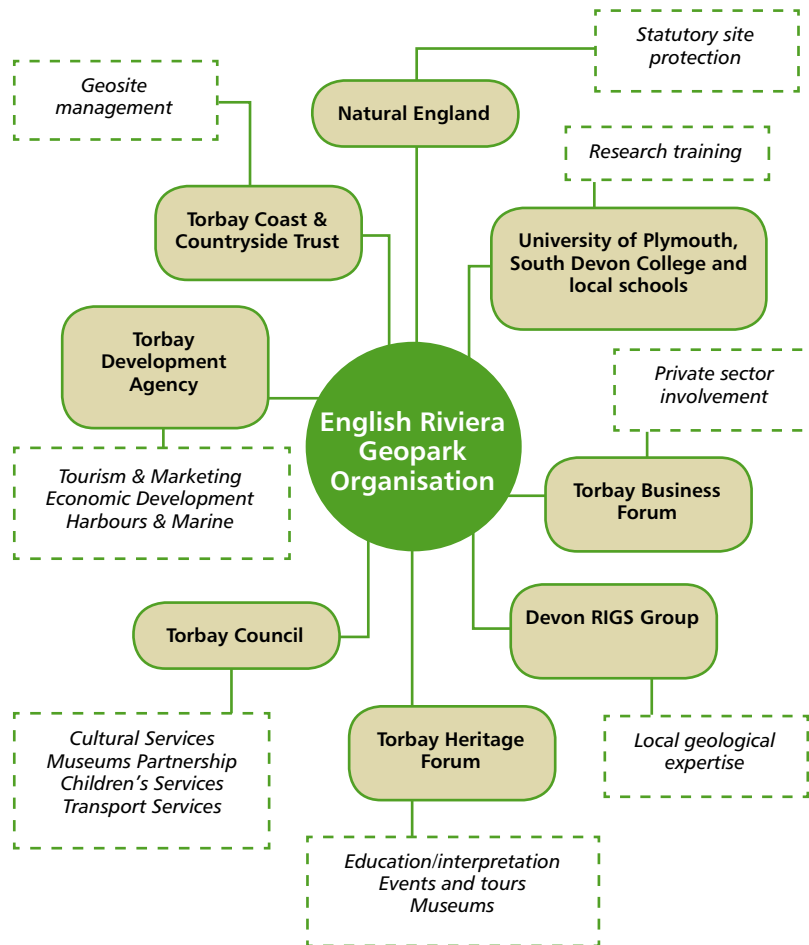


Fig 2. Membership of the English Riviera Geopark Organisation

The key aims of the ERGO are:

1. To coordinate the management of the English Riviera Geopark
2. To promote, support and facilitate, encourage and enable local projects, initiatives and events that help protect and raise awareness of Torbay's geological heritage
3. To strengthen existing partnerships and develop new networks to ensure that the geological qualities of the English Riviera Geopark are sustained and promoted for current and future generations

Details of ERGO contact person:

Ms. Mel Border - Geopark Co-ordinator

Torbay Coast and Countryside Trust

Cockington Court, Cockington, Torquay, Devon, England TQ2 6XA

Tel: +44 (0)1803 606035

E-mail: geopark@counttryside-trust.org.uk

A.5 Enclosures

The attached Geopark Management Plan contains a description of Torbay (p.8) together with maps, photographs and web-links to relevant community strategies and plans.

B. SCIENTIFIC DESCRIPTION OF THE EUROPEAN GEOPARK TERRITORY

B.1. Introduction

The county of Devon lies within the south-west peninsula of England and enjoys some of the mildest climate to be found within the British Isles. With a dramatic and beautiful coastline, luxuriant countryside, picturesque villages and rugged upland moors, it has inevitably become one of the most important tourist destinations in Britain. This landscape is the expression of a rich and varied geological history and every year large numbers of geological groups use this resource for teaching, recreation and research (Page, 1999a, b).

The Torbay district in particular is geologically famous for its limestone cliffs and quarries, historically a rich source of characteristic fossils of Devonian age. In addition, excellent exposures of Permian "Red Bed" sequences are present and the limestones themselves include important Quaternary karstic features such as bone caves. This limestone has also created a range of habitats supporting living species of national and international importance.

The English Riviera includes one of the highest concentrations of protected geological sites in the UK with 16 Geological Conservation Review Sites (GCRS), 6 County Geological Sites (CGS) and a further 10 proposed CGSs, many of which sit within the 11 nationally protected Sites of Special Scientific Interest.

A considerable literature exists describing aspects of the geology of Torbay (see bibliography **Appendix C**), much of which is historical. Relatively recent reviews referring to the district include Edmonds et al. (1975) and Durrance and Laming (1982 – second edition in preparation). Crucially, however, the British Geological Survey has recently resurveyed the area and the publication of a new geological map with revised stratigraphical terminology was published in 2003. In addition, as part of a national project by governmental body the Joint Nature Conservation Committee, scientific descriptions of all nationally protected sites of geological importance are being described in a series of 'Geological Conservation Review' volumes. Those published to date include Campbell et al. (1998) on the Quaternary and Benton et al. (2002) on the Permian and Triassic "Reds Beds". Volumes on Marine Devonian and Mineralogical sites are currently under production.

B.2. Full geological description of the region

Devonian System: Devon's geological fame is in part linked to its inspiration for the establishment of the original Devonian System in 1839 by Sir Roderick Murchison, one of Europe's great geological pioneers. It is the only county in Britain to lend its name to a geological period and many of the original localities on which the faunal characteristics of the system were established still exist today. The Torbay district itself is dominated by limestones of Devonian age, including a number of classical palaeontological localities, crucial to the original definitions of the system by Murchison. This historical importance is recognised through the inclusion of a category for 'Devonian (Marine) carbonates and clastics, Devon' within the International Union of Geological Sciences global Geosites survey, a project supported by UNESCO (Wimbledon et al. 2000).

The Devonian limestones of Torbay include parts of a Middle Devonian barrier reef system, with both reefal and lagoonal phase facies, locally containing rich coral-stromatoporoid (coralline sponge) faunas or brachiopod-trilobite assemblages. The barrier structure lay across Torbay and is best seen in the massive stromatoporoid-rich exposures of Long Quarry Point. Elsewhere, bedded limestones with masses of branching, colonial rugose corals, such as at Dyer's Quarry would represent quieter back-reef conditions. Shelly faunas are well developed locally, occasionally associated with bioclastic debris derived from relatively high energy conditions associated with coral-stromatoporoid reefal developments, or in quieter micritic and muddy limestone facies. The former development includes the famous "Lummaton Shell Bed", historically one of the most important sources of Devonian fossils in Europe and especially rich in brachiopods, but with many trilobites, also ammonoids, bivalves, gastropods, rostroconch molluscs, ostrocods, algae, tabulate and rugose corals, bryozoans, crinoids and conodonts. Lagoonal deposits are also present in the district and include fine grained limestones with gastropods near Brixham.

Smaller exposures of clastic rocks of the Lower and Upper Devonian age are also present. The former include the sandstone-dominated Staddon Group and the overlying Meadfoot Group, which has its type locality in Torquay. Both have yielded characteristic brachiopod faunas and the former is also notable for an unusually fauna of burrowing, homolonotid trilobites.

Overlying the Meadfoot Group and immediately below the massive development of limestones are shales with some limestones bands which yield a varied fauna including brachiopods, corals, and rare trilobites and ammonoids – the latter confirming an early Middle Devonian age and best exposed in St Mary's Bay south of Brixham.

The Upper Devonian of Torbay shows the classical transition from shallow water limestones to deep water shales, well known throughout Europe and leading to the extinction of much of the reef fauna. Two distinct early Upper Devonian rock types are present in Torbay: the first is a grey shale well exposed in Babbacombe Cliffs; the second is a reddish nodular limestone, locally seen in faulted wedges at Petit Tor and near Saltern Cove. Both rock types yield occasional ammonoid cephalopods, indicating deepening marine conditions. Later Upper Devonian shales and slates yield typical ostracods and conodonts and include the remarkable submarine slide deposits of the Saltern Cove Goniatite Bed, notable for the occurrence of early Upper Devonian ammonoids and orthocone nautiloids mixed with late Upper Devonian conodonts.

Permian: "Red Beds" unconformably overlie the Devonian rocks and include a range of conglomeritic and sandy deposits, often characteristic of flash-flood deposits and desertic wadi fills. Of particular note are traces of strange burrows at Saltern Cove, presumably once occupied by small reptiles sheltering from intensely hot surface climatic conditions. Occasionally the surface of the Devonian limestones shows evidence of karstic weathering prior to deposition of Permian deposits, including deep fissures near Brixham.

Structural geology: The district was folded and faulted during the Variscan Orogeny from the latest Carboniferous to the earliest Permian. Several phases of deformation are locally recognisable, as at Brockenbury Quarry, and most Devonian localities show some evidence of faulting and locally deformation may be associated with recrystallisation of the limestone or the development of slaty cleavage.

Mineralisation: Low-temperature hydrothermal fluids, apparently of Permian-Triassic age produced a significant deposit of low-grade iron ore at Sharkham Point, near Brixham, which was once commercially mined. Another suite of fluids led to the formation of thin gold and palladium-bearing veins in the Devonian limestones of Hope's Nose, the former characteristically forming small, delicate feather-like crystals. Very rare selenium minerals are also present, together making these deposits unique in Britain and possibly in Europe.

Quaternary: The Neogene left little trace across south west England, but relatively high sea levels at this time cut the high level marine platform, or plateau, conspicuous on the limestone massif of Berry Head.

The development of karstic features and caves in the limestones is characteristic of the Pleistocene, however, and several caves in the district are famous for their rich deposits of ice age and interglacial mammal bones. Kents Cavern in particular, long ago established as a show cave, has yielded interglacial and glacial mammal faunas including mammoth, straight tusked elephant, narrow nosed rhinoceros, woolly rhinoceros, hyaena, cave lion, European sabre toothed tiger, cave bear, bison, hippopotamus, horse, reindeer and some human remains. A second and much smaller cave at Brixham has also yielded elements of these faunas.

On the coast raised beaches are locally well developed, formed during periods of high sea level during interglacial periods, including at Hope's Nose and Thatcher Rock, Torquay. Elsewhere, cold stage deposits include periglacial loess and Head (soil and stones transported downslope due to solifluxion). Rising sea levels after the end of the last ice-age drowned parts of coastal woodlands, the remains of which can occasionally be seen at low tide on certain beaches.

B.3 List and description of the geological sites

Please refer to pages 20 – 35 of the Geopark Management Plan.

B.4 Details on the interest and international, national or regional significance of these sites

Please refer to Section 7.3 of the Geopark Management Plan which provides Statements of Interest and Reasons for Registration for each of our 32 Geosites.

B.5. Current or potential pressure on the Geopark and these sites

The English Riviera Geopark is an established tourist resort with a well-developed infrastructure and robust facilities for accommodating large numbers of tourists throughout the year. Many of the geosites within the area are popular visitor attractions in their own right and are

managed to reduce visitor pressures to an acceptable level. The managers of these sites are active partners in the ERGO and will ensure that any additional pressures resulting from the further promotion of geotourism and geoeducation are properly managed and impacts are minimised.

The current or potential pressures on the geosites are summarised below and are detailed in the Geopark Management Plan (Section 5.3):

- Natural degradation and vegetation growth
- Coastal protection and flood defence
- Waste disposal (landfill and effluent)
- Mineral / aggregate extraction and restoration of working sites
- Agricultural and other land management practices
- Overuse or misuse

B.6 Current status in terms of protection of the sites

The introduction of the Wildlife and Countryside Act in 1981 first established the present mechanisms for legally designating and protecting 'Sites of Special Scientific Interest' under UK law. This process was strengthened by the Countryside and Rights of Way Act 2001, as presently administered in England by Natural England (until 2006 known as Natural England, itself a descendent of the former national Nature Conservancy Council). The same laws also cover the legal framework for designating 'National Nature Reserves' and 'Local Nature Reserves'.

Various Town and Country planning laws have also developed environmental themes, and most notably the Planning and Compensation Act (1991) requires all local structure and development plans to contain nature conservation policies. These policies are required to specifically mention the need to identify and protect sites of biological, geological and geomorphological importance at both national and local level. Crucially, sites of local importance for nature conservation can be protected through this system by invoking relevant development planning laws. Torbay's statutory Local Plan for 1995 – 2011, developed in accordance with this legislation, includes relevant policies and strategies to protect natural heritage sites as listed in Appendix B. The Regional Spatial Strategy for the South-West of England is the over-arching strategic framework for the Torbay Local Plan and emerging Local Development Framework, and details of relevant policies can also be found in this Appendix.

Five basic categories of protected natural site or area relevant to geological conservation have consequently been established in the district through this and associated legislation:

Sites of Special Scientific Interest (SSSIs): These sites are considered to be of at least national importance, although many can also be of international importance. Although designated and monitored by Natural England, the governmental agency for nature conservation in England, SSSIs remain owned and managed by the original owner or occupier in accordance with a consultation system comprising a list of designated operations which cannot be carried out unless formally approved by the agency. All geological sites included within SSSIs have been selected through a national survey, the Geological Conservation Review (GCR; Ellis et al. 1998). Of the 12 SSSIs in Torbay, 11 have a primary geological interest and 9 are owned by Torbay Council and / or managed by Torbay Coast and Countryside Trust.

Commencing in 1977, the Geological Conservation Review was established to identify and describe sites of national and international importance needed to show all the key scientific elements of the Earth heritage of Britain. A total of 16 sites were identified in Torbay as making a special contribution to our understanding and appreciation of Earth science and the geological history of Britain, which stretches back hundreds of millions of years. Approximately 100 different categories exist i.e the GCR blocks. The 16 GCR sites fall within 4 different categories:

- Marine Devonian
- Permian Triassic
- Mineralogy of south-west England
- Quaternary of SW England

All of the GCR sites are now protected through the designation of 11 *Sites of Special Scientific Interest*.

National Nature Reserves (NNRs): Declared by Natural England and owned or leased and managed by that agency or another approved body (for instance a County Wildlife Trust),

these sites represent some of the best and most fragile examples of Britain's natural heritage. Torbay includes the recently declared Berry Head NNR, with a unique complex of Pleistocene cave systems, some of which are below present sea level, others acting as a maternity roost for Greater Horseshoe Bats. Important areas of limestone grassland are also present. This reserve is managed by Torbay Coast and Countryside Trust.

Local Nature Reserves (LNRs): Natural England approval is required for the declaration of LNRs, which must be owned or leased by a local authority or other approved body. Sugar Loaf and Saltern Cove LNR, Torbay, has important Devonian and Permian exposures as well as an significant modern intertidal communities (Macadam). This reserve is managed by Torbay Coast and Countryside Trust.

County Geological Sites: These sites are selected and managed by the Devon RIGS Group, an NGO whose voluntary membership includes members of the local universities of Plymouth and Exeter, together with a range of representatives from other locally based organisations, including the British Geological Survey, Natural England, the Environment Agency and Devon County Council. Sites considered to be of at least county importance for geological heritage are notified to the relevant local planning authority and protected through both local development plans and policies and voluntary agreements. Six CGS have so far been recognised in the Torbay district (Taylor and Grainger 1995; Appendix A) and a further systematic survey is underway to identify and describe further sites.

South Devon Area of Outstanding Natural Beauty (AONB): Although primarily a landscape designation, the southern-most part of Torbay forms part of this larger site. Enhanced planning controls as enforced within AONBs, serve to maintain a natural character and prevent damaging and inappropriate development.

See Section 7 of the Geopark Management Plan for details of the current designated status of each geosite.

B.7 Site management data

See **Appendix D** for details of management objectives on a site by site basis.

B.7.1 Ownership

Ownership falls into three main categories.

1. Public ownership

These sites are owned by Torbay Council and are managed through various departments of the Council, depending upon the nature of the land.

2. Charitable trust

These sites are managed by Torbay Coast and Countryside Trust (under 60-year lease from Torbay Council). The Trust is dedicated to the conservation of the heritage of Torbay and employs Rangers in an Estate Management team to manage habitats and patrol and monitor the condition of geosites, and an Education team to undertake work with schools and the general public to raise awareness of Torbay's heritage.

3. Private ownership

A variety of owners including South West Water and Kents Cavern Ltd account for the remaining sites. The relevant public agencies advise on and regulate management of these sites.

B.7.2 Management Plans

Several geosites already have active management plans, specifically those with SSSI status. Other geosite management plans are being developed gradually. All geosites are expected to achieve their management objectives over time and this process is overseen through the Torbay Local Biodiversity Action Plan (LBAP), which includes a chapter on Earth Heritage sites. The LBAP can be viewed at www.countryside-trust.org.uk/lbap.htm

B.8 List and description of non-geological sites

The following list of heritage assets is included in the Torbay Heritage Strategy 2003 (available at www.countryside-trust.org.uk/environmenttorbay/hstrategy.htm). This list includes those heritage assets that help to define the Bay and its evolution and is not all-inclusive. These themes are being used to help visitors and local residents understand the Bay's development through the centuries. A description of these key assets is included in the Heritage Strategy (pp 5-6).

Theme	Key Heritage Assets
The making of the Bay and its original inhabitants	Geological Sites of Special Scientific Interest Limestone grassland plant communities Cirl buntings Marine life Coastal landscapes
The first humans	Kents Cavern William Pengelly collection, Torquay Museum Wall's Hill Broadsands tomb
Early settlement / rural life	Torre Abbey St. Michael's Chapel Paignton Bishop's Palace Ancient lanes Cockington Court and Village Higher Brixham Churston Ferrers Galmpton Orchards, rural landscapes Occombe Farm
Maritime life	Brixham Harbour Brixham Heritage Fleet Brixham Museum collections Paignton Harbour Shipwrecks
A nation at war	Berry Head Ancient Monument Brixham Museum Collections Battery Gardens Ancient Monument WWII slipways, Torquay Harbour
The Tourist resort	Torquay Harbour Victorian Villas Oldway Mansion and Gardens The Pavilion Paignton Pier The Palace Theatre Paignton Picture House Princess Gardens / Rock Walk Coastal walks Railway heritage Torquay Museum Brunel Woods

C. ARGUMENTS FOR NOMINATING THE REGION AS A EUROPEAN GEOPARK

C.1. Comprehensive analysis of the region's potential for the development of economically sustainable geotourism

Tourism is already Torbay's largest economic sector, supporting approximately 25% of employment in Torbay and the economic development strategy for Torbay identifies tourism as a main priority. Surveys of tourist behaviour show that the environment of Torbay, and natural attractions, plays a major part in the typical tourist's visit. For example in 2003 a survey by South West Tourism showed that 44% of visitors walked on the Coast Path; 27% visited Cockington Country Park; 12% visited Berry Head and 8% Kents Cavern. These figures are from a total visitor population of around 1.5m.

The community in Torbay is very aware of the superb natural setting that it enjoys. In consultations carried out in 2006 towards the preparation of the Torbay Community Plan, residents placed "A Green Torbay" at the top of their list of priorities. Development strategies for the area now include the use of the area's natural assets to assist in economic regeneration with a widespread recognition that modern visitors demand better information about and access to the heritage of the area they travel to.

The Torbay Development Agency has developed Torbay's Economic Regeneration Framework (see www.torbay.gov.uk/efstrategy) for the period to 2016 and that strategy supports the bid for 'Geopark' status for Torbay. Geopark status complements the thrust of evolving the nature of tourism in Torbay seeking to capture the potential of the maritime and natural heritage of the area. The strategy fully recognises that the culture and heritage of Torbay are areas that contribute strongly to the economy and can support the further sustainable growth of the economy.

One of the key themes of the Strategy is to reposition the Visitor Offer and the Leisure Economy. Several measures link directly to Geopark-related activities. The following extracts are from the Strategy:

P1.1 – Redirecting Torbay's tourism offer for greater value to the economy:

recognising the need for a new direction in Torbay's tourism offer to attract a much broader base and longer season of visitors including those coming for short breaks, business visitors and, particularly, to attract those visiting with a specific activity, leisure or other specialist purpose.

P1.2 – Maritime Leisure – Leading the way: attracting visitors who come to participate in a specific leisure or other specialist activities, based on the quality of Torbay's environment for marine leisure activities – sailing, diving and other watersports. There is also an important maritime heritage as the basis for festivals and events.

P1.3 – Investing in leisure for visitors and residents: providing activity based rather than location based tourism. Carry out more joint marketing and develop other facilities with an environmental theme (eg Paignton Zoo / Living Coasts / Kents Cavern to be a base for 'hands-on' exploration, and learning/studying stays). The strategy supports the bid for 'Geopark' status for Torbay which complements the environmental theme strongly.

P1.4 – Securing the Potential of Torbay's culture and heritage: maritime, environmental and other leisure development opportunities are based around Torbay's unique maritime and coastal heritage. The culture and heritage of Torbay are areas that contribute strongly to the economy and that can be cultivated for further growth. The focus should be on the maritime heritage, culture and the arts and sports and supporting the agreed Culture and Heritage strategies which seek to capture the economic benefits of those two areas.

This strategic context shows that Torbay's regeneration agency is properly engaged with and aware of the potential of the Geopark. The TDA is an active partner in the English Riviera Geopark Organisation which is stewarding actions on the ground to realise this potential.

The potential for geotourism in Torbay is excellent and is based upon these key attributes:

Site management

- Good distribution of geosites throughout the area, the overwhelming majority being open to the public. The geology of these sites is generally robust and can accept visitor pressures. There is potential to improve access to some of these sites.
- Management of the majority of geosites is carried out through a single organisation (TCCT) with strong links to other managers / owners. TCCT has received national recognition for the quality of its conservation work.
- A strong management partnership (ERGO) includes all of the key players in the area

Infrastructure

- An excellent footpath network, including the South West Coast Path (the UK's longest trail), links the main geosites. TCCT is responsible for the management of this trail.
- An excellent public transport network (buses, ferries, trains) serves the area, as well as a busy regional airport at Exeter.
- An excellent tourist infrastructure exists with very high capacity (eg hotel spaces, parking). Future development plans include a greater emphasis on sustainability in the tourism sector and a reducing reliance on the private car as the main mode of transport for visitors.

Geotourism

- A dynamic Tourist Board with national and international marketing skills and resources including three Tourist Information Centres (TICs). The business sector is closely integrated in this work, through the Attractions Marketing Group.
- A network of museums and other cultural sites and resources, co-ordinated through the Cultural Partnership. One of these museums (Torquay) has internationally significant geological and archaeological collections.
- The TICs, museums and other cultural sites will develop as Gateway sites to the Geopark, holding information and staging exhibitions about the Geopark.
- Existing programmes of interpretation and events, with experienced guides and event organisers
- Growing links with other neighbouring areas with related designations (eg Jurassic Coast World Heritage Site; North Devon Biosphere; Cornish Mining World Heritage Site)
- A growing level of existing geotourism activity: one geological trail existing and a second one in development for 2007; geological cruises growing year on year; guided walks also growing in number and popularity.
- High potential to expand existing activities under the Geopark banner, eg: cycle-routes and tours; canoeing; scuba-diving; rock-climbing.
- A high level of existing educational activity organised by staff skilled in environmental education; school and college field visits to geosites are already in action and ready to be further developed; much of this activity is by schools visiting Torbay from elsewhere in the country.
- The Coastlands partnership co-ordinates outdoor leisure activities for schools, based at two outdoor activity centres, with a third centre opening in 2007
- Encouraging further visits by Cruise liners, Foreign language students and International visitors is part of Torbay's development strategy, and Geopark status will be used to reinforce this work
- A network of volunteer Geo-Rangers will assist the Geopark Officer in the future.

C.2 Description of existing geological institutions and activities

C.2.1. Institutions

Under the umbrella of the **English Riviera Geopark Organisation** several key agencies work together to develop and implement the Geopark Management Plan. Their responsibilities and skills are co-ordinated through ERGO and are allocated as follows:

Torbay Council (www.torbay.gov.uk)

Torbay Council is the local government body and is responsible (amongst other things) for public education and cultural development, including schools, museums, libraries, sports facilities, parks and beaches. Schools are encouraged to use the local area for field trips and, in conjunction with the Torbay Coast and Countryside Trust, many such visits are organised each year. These often include geological interpretation and study. The Council directly manages one museum, Torre Abbey, which is currently closed for a major repair programme, and grant-aids two other museums run by charitable trusts (Torquay and Brixham Museums, see below). Other functions of the Council are also relevant, such as Highways and Public Transport.

Torbay Development Agency (www.torbay.gov.uk/index/council/torbay-partnerships/tda.htm)

The TDA is responsible for economic development, tourism and marine services, including Tor Bay Harbour. The TDA manages Torbay's tourism development programme and has enthusiastically used the geological heritage of the Bay in its marketing material. This includes use of the Geopark logo and concept in its publications and on its website; and promotion of Geopark cruises through its Tourist Information Centres.

Torbay Coast and Countryside Trust (www.countryside-trust.org.uk)

TCCT is an independent charity responsible for the management of the majority of Torbay's public open space, including the main geological sites of importance. The Trust's charitable objects are to carry out and encourage conservation, recreation and education programmes and

it is heavily committed to protecting and promoting the area's geology. This it does through direct site management; through its education programme, in partnership with local schools; through its events programme, which includes around 150 events each year, many of these being of a geological nature; through on-site interpretation boards, exhibits and leaflets; and through its volunteer network which assists the Trust in its overall work.

Torbay Cultural Partnership

This is a network of organisations representing all cultural sectors in Torbay. It includes under its wing the Torbay Heritage Forum, which works to protect and promote Torbay's heritage and was the original sponsor of the Geopark for Torbay. The Forum includes representatives from all three museums, Kents Cavern, independent tour guides, the Torbay Civic Society and other local community groups, and the tourism sector. The Cultural Partnership also includes representatives of the arts, nature conservation, libraries, sport, youth, older people etc.

Natural England (www.naturalengland.org.uk)

The government agency with statutory duties for nature conservation and earth heritage in England, this agency has played an active role in direct geological conservation in Torbay for many years. This is partly through the exercise of its statutory role to protect designated sites, and partly through funding initiatives designed to improve the condition of, or public awareness of, the natural world.

Devon Regionally Important Geological Sites Group (www.devonrigs.org.uk)

Devon RIGS was established in 1991 and is a voluntary organisation exclusively concerned with geological conservation in Devon. Composed of qualified members the group seeks to promote geological conservation by working with local authorities, landowners and others. Devon RIGS works to protocols established through UKRIGS.

University of Plymouth (www.plymouth.ac.uk)

The University of Plymouth is one of the UK's most prominent and dynamic universities with an educational history dating back to 1862. Consistently ranked as one of the top three modern universities, Plymouth has over 30,000 students in addition to almost 3,000 staff. The Faculty of Science which includes a School of Biological Sciences and a School of Earth, Ocean and Environmental Science is one of a only handful in the UK to achieve excellent ratings from the Higher Education Council for England (HEFCE) for every area of its undergraduate work

South Devon College (www.southdevon.ac.uk)

In 2006 the 30-year old South Devon College moved to its new home in Paignton, a modern campus development with some of the best facilities in the South-west of England. Degrees offered include : integrated crafts, interior design, business, computing, early years care and education, outdoor education, exercise and fitness, hospitality management, tourism management, visual studies. The College has close links with the University of Plymouth.

Torbay Business Forum

The Forum brings together the varied business community of Torbay in order to promote co-operation and integrated activities. The Forum appoints a member to sit on ERGO and provides an essential link to the tourism sector in particular.

C.2.2 Other Geological Organisations

A range of other organisations work in the area to promote geological subjects and understanding. These include:

The Ussher Society (www.ussher.org.uk)

The Ussher Society named after William Augustus Edmond Ussher, was founded in 1962 to promote the study of Geology and Geomorphology of South-west England and related areas. On several occasions the society have held their annual conference in Torbay

British Geological Survey BGS (www.bgs.ac.uk)

Founded in 1835, the British Geological Survey (BGS) is the world's longest established national geological survey and the United Kingdom's premier centre for earth science information and expertise.

Geology Section of the Devonshire Association (www.devonassoc.org.uk/)

The Devonshire Association was founded in 1862. The DA covers the whole county and all areas of scholarly enquiry. The Geology section run activities/ events and talks within the area.

South West Regional Group of the Geological Society (www.geolsoc.org.uk/template.cfm?name=South_West_Regional_Group)

The South-West Regional Group (SWRG) is well established and active, and celebrated its 25th Anniversary in January 2000. It aims to provide a local regional focus for all Geological Society Fellows and activities. It arranges a regular programme of meetings and activities to meet the requirements of its active membership; including ProGeo - an annual one-day conference for professional geoscientists in the South West.

South West Open University Geological Society (www.swougs.org/)

The South West Open University Geological Society (OUGS) organises field trips, as well as lectures, revision events, conservation and other activities. The society is open to Open University past and present students and non-students alike.

C.2.3 Activities

Since 2004 the partners working together on the development of the Geopark have generated a considerable amount of activity to manage, promote and develop the Geopark. Individual partners have normally taken responsibility for specific actions but all activities fall under the umbrella of the Geopark and, more recently, the ERGO.

Activities undertaken in the area since 2004 are as follows:

Research, information and education scientific activity

- Leveridge, B.E., Whittaker, A. and Shail, R.K. (In Press) The Marine Devonian of Great Britain, Geological Conservation Review Series, Joint Nature Conservation Committee, Peterborough
- Leveridge, B.E. (2006) The Variscan Orogeny: the development and deformation of Devonian/ Carboniferous basins in SW England. In *The Geology of England and Wales*, (eds P.A. Brenchley and P. Rawson). Geological Society of London Special Publication. 227 - 52
- McFarlane D. A. and Lundberg J. The 19th Century Excavation of Kents Cavern. In *The Journal of Caves and Karst Studies*, v. 67, no. 1, p. 39 - 47
- Shepherd, T.J et al (2005) Permo–Triassic unconformity-related Au-Pd mineralisation, South Devon, UK
- Hunt, J. (2005) Rates of Flowstone Growth
- BGS. (2004) Torquay. England and Wales Sheet 350. Solid and Drift Geology. 1:50000. British Geological Survey, Nottingham

Malcolm Hart, Professor of Micropalaeontology, University of Plymouth is currently researching the ash fall deposits in the Devonian and comparing to Montserrat in the Caribbean Sea where ash fall deposits from a modern volcano are landing on the sea floor.

In addition to use by other Universities, the area is used every year by Plymouth University for student project work; all final year students (B.Sc(Hons)Geology, BSc(Hons)Applied geology, BSc(Hons)Earth Sciences) produce a research dissertation on the limestones, corals, etc.

Environmental Education

The following organisations are heavily involved in facilitating environmental education for local groups and for those visiting from other areas within the UK and Europe: Grenville House, Kents Cavern, Living Coasts, Paignton Zoo, Torbay Coast and Countryside Trust, Torbay Youth Service. Therefore a wealth of Environmental education activities has taken place in the area for the following groups:

- Primary and secondary schools
- Colleges and Sixth Forms
- Youth Groups
- Nurseries and Pre-Schools
- Brownies and Scout Groups
- Adult Education Groups
- Retired Groups
- Professional organisations
- Tourist Groups

Torbay Coast and Countryside Trust for example has hosted around 150 visits by groups and around 5000 students to Trust sites each year. These include: Cockington Country Park (Torquay), The Seashore Centre at Goodrington Sands (Paignton), Ocombe Organic Farm (Paignton) and

Berry Head National Nature Reserve (Brixham). Whilst Kents Cavern has hosted visits for around 7000 students, of which approximately 5500 have been from Continental Europe.

Educational materials.

In the last 2 years new materials have been developed specifically for local environmental educators to facilitate visits by groups covering objectives within the following QCA schemes of work (QCA develop schemes of work to assist teachers in delivering the UK National Curriculum):

Primary:

Unit 3: Rocks and Soils

Unit 4: Going to the seaside

Unit 6: Investigating our local area

Unit 8: Investigating our local environment

Unit 23: Investigating coasts

Secondary:

Unit 8: Coastal environments

Unit 13: Limestone landscapes of England

Unit 19: Tourism – good or bad?

- Materials for Coastal Geography Day at Berry Head National Nature Reserve – Formation of headlands, bays stacks and arches, rock type, erosion and deposition – using a model of coastal erosion. Comparison of different rock types found around Torbay. Comparison of Torbay and land south of Berry Head. Impact of man, different uses of the coastline and the importance of the bays geology to the tourism industry.
- Materials for Coastal Geography Day at Goodrington Beach - A range of geographical activities that cover both human and physical aspects of the subject. Examine beach profiles and erosion in a hands-on exercise. The geology of the bay with contrasting cliff structures of limestone and sandstone. Fossilised corals found on the beach, along with patches of peat from an ancient forest. Plus looking at orientation, using landmarks to map the physical features of the beach. Investigating the effect of tourism on the beach and assessing the amenities offered using maps and answering questions. Followed by a debate introducing groups to the potential conflicts of interest between the environmentalists, the holidaymakers and the local residents, how they would manage Goodrington and it would benefit them.
- Powerpoint on Local Coastal Features
- Materials for Rocks and Soils Day - Become a rock and soil scientist and discover how igneous, sedimentary and metamorphic rocks are formed and what makes rocks and soil types different. Practical activities include testing three different types of soil for particle size, sink rates, texture and colour to determine who has eaten the Ranger's lunch and a giant rock cycle. The children also learn about how Goodrington beach has changed over the last 375 million years and can take part in a fossil hunt.

Marketing and Public Relations

The Geopark has received plenty of exposure through the local media. In the last two years, press articles have appeared regularly in the Western Morning News, a daily paper serving the South West peninsula of England, and the Herald Express, the daily paper for the Torbay area. The original application in 2004 was covered by the BBC and ITV, the regional television network, on their early evening news programs. ITV will again be featuring the second application for membership in their news programs.

Local radio stations have covered stories on the Geopark. On 11th April 2006, BBC Radio Devon broadcast their breakfast show live from Kents Cavern and focused on the Geopark. Shorter news items about activities relating to the Geopark have been covered by other two local radio stations including Palm FM and Gemini FM.

The English Riviera Tourist board included the Geopark in editorial at the front of the Accommodation Guide in 2005, 2006 and 2007. Over 250,000 copies of this guide are distributed annual around the country through call centre enquiries. The "What's On" Torbay publication with an annual circulation of 250,000 carried full page adverts and editorial on the

Geopark in 2005 and 2006.

Other publications used to market the Geopark in the last two years are:

- English Riviera promotional CD Guide included in all Press Packs
- English Riviera Walking Festival leaflet
- English Riviera Walks interpretation booklet
- Days out on the English Riviera leaflet 2005 and 2006
- Kents Cavern education leaflet
- Torbay Coast and Countryside Trust promotional leaflets

Guided Tours

A busy programme of guided walks and tours on the themes of the Geopark has been made available each year and this is growing in scale and popularity. The programme is promoted through Torbay Coast and Countryside Trust's events diary, 40,000 copies of which are distributed around Torbay; through the websites and publications of partners, such as the Tourist Information Centres; and in 2007 through the ERG's own website. The boat tours, known as Coral Coast Cruises, have proved very popular as they offer a superb way of seeing the area's most impressive geological exposures.

Name of Event	Type of Event	Date
The Torquay Coast	Walk	05/03/05
Understanding Torbay's Geological Roots	Walk	16/04/05
Understanding Torbay's Geological Roots	Walk	14/04/05
Fascinating Fossils at St Mary's Bay	Family event	21/05/05
Coral Coast Cruise	Boat trip	29/05/05
Devonian Discovery at Hopes Nose	Walk	12/06/05
Coral Coast Cruise	Boat trip	18/06/05
Fascinating Fossils at Saltern Cove	Family event	26/06/05
Coral Coast Cruise	Boat trip	23/07/05
Coral Coast Cruise	Boat trip	04/08/05
Coral Coast Cruise	Boat trip	18/08/05
Coral Coast Cruise	Boat trip	25/08/05
Coral Coast Cruise	Boat trip	27/08/05
Fascinating Fossils at Saltern Cove	Family event	17/09/05
Redgate Beach Ramble	Walk	18/09/05
Understanding Torbay's Geological Roots	Walk	15/10/05
Fascinating Fossils at St Mary's Bay	Family event	15/10/05
Understanding Torbay's Geological Roots	Walk	29/10/05
Understanding Torbay's Geological Roots	Walk	12/11/05
Berry Head Evening Stroll	Walk	11/04/06
Berry Head Treasure Hunt	Family event	15/04/06
Goodrington Walk	Family event	16/04/06
Coral Coast Cruise	Boat trip	23/04/06
Roam the Reserve	Walk	23/04/06
Fascinating Fossils at St Mary's Bay	Family event	06/05/06
Berry Head Walk	Family event	14/05/06
Roam the Reserve	Walk	28/05/06
Foray in the Forts	Family event	29/05/06
Flora and Geology of Berry Head	Walk	18/06/06
Roam the Reserve	Walk	24/06/06
Small Blue Investigation	Walk	01/07/06

Name of Event	Type of Event	Date
Limestone loving flowers of Berry Head	Walk	08/07/06
Evening Amble -Broadsands and Elberry Cove	Walk	11/07/06
Coral Coast Cruise	Boat trip	16/07/06
Coral Coast Cruise	Boat trip	03/08/06
Roam the Reserve	Walk	03/08/06
Roam the Reserve	Walk	09/08/06
Coral Coast Cruise	Boat trip	10/08/06
Saltern Cove Fossils	Family Event	13/08/06
Coral Coast Cruise	Boat trip	17/08/06
Roam the Reserve	Walk	17/08/06
Coral Coast Cruise	Boat trip	24/08/06
Coral Coast Cruise	Boat trip	31/08/06

Adult education courses

Local colleges host a wide range of adult education classes and courses and a number of courses with a geological theme have been run in recent years.

Introduction to Torbay's Geology	2-day adult education course held at 2 venues in Torbay	04/02/05 07/2/05 11/02/05 14/02/05
The Geology of Torbay	6-week adult education course	Commencing 30/09/05
Torbay's Geological Roots	2-day adult education course held at 3 venues across Torbay	28/09/05 29/09/05 30/09/05 12/10/05 13/10/05 14/10/05
Understanding the Geology of Torbay	6-week adult education course at Torquay Museum	November - December 06

Proposed programme January to August 2007

Name of Event	Type of Event	Date
Torquay Geology and Heritage	Walk	02/02/07
Back to the future	Family Event	23/02/07
Understanding the Geology of Torbay	6-week adult education course at Torquay Museum	March-April 07
Paignton Geology and Heritage	Walk	02/03/07
Building with Torbay's Rocks - Torquay	Walk	13/04/07
Saturn, Venus and the Moon	Walk/Talk with telescope	21/04/07
Fascinating Fossils and St Mary's Bay	Family Event	06/05/07
Step Back in Time – Hopes Nose circular walk	Walk	15/05/07
Step Back in Time – Goodrington and Saltern Cove	Walk	17/05/07
Scrappy Workshop	Family Event	31/05/07
Geopark Cruise	Boat trip	31/05/07
Who lived in a house like this? Fossil Exploration	Family Event	01/06/07
Berry Head Flora and Geology	Walk	10/06/07

Name of Event	Type of Event	Date
Geopark Cruise	Boat trip	21/06/07am
TCCT Members Geopark Cruise	Boat trip	21/06/07pm
Building with Torbay's Rocks - Paignton	Walk	13/07/07
Geopark Cruise	Boat trip	26/07/07
Geopark Cruise	Boat trip	02/08/07
Geopark Cruise	Boat trip	09/08/07
Fascinating Fossils at Saltern Cove	Family Event	12/08/07
Splosh! Marine Arts Festival of Past and Present	Family Event	12/08/07
Splosh! Marine Arts Festival of Past and Present	Family Event	13/08/07
Splosh! Marine Arts Festival of Past and Present	Family Event	14/08/07
Geopark Cruise	Boat trip	16/08/07
Geopark Cruise	Boat trip	30/08/07
Building with Torbay's Rocks - Brixham	Walk	31/08/07

In addition to these programmes, individual tailored tours are available through a number of guide services and these are promoted through TCCT's publications, through those of partners and, in 2007, through the ERG's own website.

Website

To enable easy public access to information about the Geopark the new English Riviera Geopark website went online in February 2007: www.englishrivierageopark.org.uk.

Talks and presentations

Presentations on the Geopark have been made at two international geological conferences: the ProGeo conference in Portugal in September 2005; and at the 2nd Global Geopark Conference in Belfast in September 2006. Locally, members of the Geopark steering group have given talks themed on the Geopark:

Paignton Art Centre	Adults	31/01/05
Brixham Community College	Adults	02/02/05
Torquay Museum	Adults	04/02/05
Brixham Community College	Adults	09/02/05
Torquay Museum	Adults	11/02/05
Paignton Art Centre	Adults	21/02/05
Brixham Community College	Adults	24/09/05
Torbay Tourism Forum	Local business community	06/10/05
Torquay Museum	Adults	18/11/05
Belgrave Hotel	Adults	02/11/05
Torquay Museum	Adults	27/02/06
Business Breakfast Club	Local business community	08/03/06
South Devon Geography Association	Teenage Children	06/04/06
Devonshire Association Symposium	Adults	13/05/06
Cockington	Adults	08/11/06
Torquay Museum	Adults	12/01/07
Torbay Business Forum	Business Forum	08/03/07
Industry Briefing Day	Local business community	08/03/07

Information centres / exhibitions

Torbay has a number of sites where visitors and residents can access information about the area and the Geopark features in many of these.

The primary locations for tourists are the Tourist Information centres, which occupy prominent positions in the three towns of Torquay, Paignton and Brixham. Here visitors can pick up information on events, trails, boat trips, public transport and all other tourist-related needs.

Several of the key heritage sites also provide information and exhibitions. There are three principal "Gateway" sites which visitors are encouraged to use as launch-points for Geopark-related activities and a number of other sites with relevant information. These are:

Gateway Sites

- Berry Head, where there are two Visitor Centres with exhibition material about the geology and the other heritage features of the site.
- The Seashore Centre at Goodrington, which is the start of the Saltern Cove Trail and includes exhibitions about the geology and natural history of the area.
- Kents Cavern where there are extensive exhibitions about the geology of the area.
- Torquay Museum provides information and has a gallery devoted to the geology of the area.

Other sites

- Brixham Heritage Museum provides heritage exhibitions and information
- Cockington Court is Torbay Coast and Countryside Trust's head quarters and the base for the Geopark Co-ordinator.
- Libraries in the three towns provide internet access and a full range of information about the Geopark
- Paignton Zoo Environmental Park (Paignton) and Living Coasts (Torquay's marine zoo) both have a strong environmental theme
- Occombe Farm is a demonstration organic farm promoting the connections between food, farming and the environment
- Torre Abbey

Interpretation panels and leaflets

There are interpretation panels at several of the geosites, including Berry Head, Sharkham Point, Saltern Cove, the Coast Path at Dyer's Quarry, the Coast Path at Anstey's Cove, Roundham Head, Kents Cavern and Maidencombe. These are due to be supplemented by specific, Geopark-themed panels in 2007, thanks to the award of a grant from the National Lottery, amounting to £5,000. New panels will be installed at Berry Head, Goodrington Beach, Oddicombe and Kents Cavern.

There is a variety of leaflets interpreting the geology of the area relating to several sites. These include: the Saltern Cove Geological Trail; the Berry Head leaflet; Kents Cavern interpretive leaflets; and the Guide to the South West Coast Path through Torbay.

In addition, in 2007, thanks to the National Lottery funding mentioned above, a new leaflet promoting the Geopark will be published.

Geopark sites will also be featured in the new Discover Devon Geology leaflet currently in the process of being produced.

Trails and tourist facilities linked to trails

The South West Coast Path runs along the coastline through the English Riviera Geopark, visiting many of the key geosites of Torbay. Along this path there are also the three Gateway Sites detailed above.

There are various publications detailing other trails and circuits including: the Cockington Walking and Cycling trails and the John Musgrave Heritage Trail.

Within the Geopark there are several promoted walks and details of these can be found at <http://www.torbay.gov.uk/index/leisure/countryside/walks.htm>

The BBC website has details of a walk through part of the Geopark. The walk was written up when the Geopark was called the Coral Coast. www.bbc.co.uk/devon/outdoors/walks/walk_through_time/index.shtml

Because Torbay has an existing significant tourist infrastructure, the facilities associated with

these trails (eg accommodation, public transport, public toilets, refreshments) are extensive and readily available to visitors.

C.2.4 Community integration

The development of the Geopark has been well-integrated into the various networks and policy communities present in Torbay, and these are detailed below.

Torbay Heritage Strategy

The decision to apply for Geopark status was first taken in 2002 by the Torbay Heritage Forum, which is a consultative and co-ordinating voluntary organisation concerned with Torbay's heritage. This decision arose during the research and development of the Torbay Heritage Strategy which involved consultation with a very wide range of community and heritage representatives. The Heritage Forum is now part of the Torbay Cultural Partnership.

Community Plan

Since 2004 the Forum has worked with Torbay Council and other partners on the development of Torbay's Community Plan. This is the key over-arching strategic plan for the whole of Torbay and it has been consulted upon widely through many different media, including questionnaires, roadshows, press coverage and focus groups. The application for Geopark status has featured strongly in these consultations, has received widespread support from the community and is therefore one of the definitive targets within the Community Plan published in 2007. Several other strategic plans that operate under this umbrella, which in turn have been subject to consultation, also feature the Geopark, including the Marine Strategy and Economic Development Framework.

Ward Partnerships

A core element introduced to Torbay's democratic structure in recent years is the Ward Partnership. These operate at local level, typically covering an area of up to 3,000 households, and enable people to engage with decision-makers and discuss issues affecting their lives. The Ward Partnerships are built into the decision-making systems of the main public agencies and in this way local concerns can more readily be taken into account at the strategic level. The Community Plan has been developed with the full input of the Ward Partnerships.

Education sector

A number of organisations exist within the area that promote, facilitate and assist community integration within the education sector. One of the most active is "Coastlands", an umbrella group of organisations that provide environmental education, outdoor adventure activities and residential opportunities across South Devon. The network includes: Grenville House Outdoor Education Centre, Living Coasts, Paignton Community College and Sports College, Paignton Zoo, Sharpham Trust, Torbay Coast and Countryside Trust and Torbay Youth Service. In addition, the Geopark is represented within the Devon Education for Sustainability Working Group (DESWG) through a TCCT representative. This group is made up of a dedicated group of teachers, local government officers, members of NGOs, representatives of higher education institutions and other environmental and development education providers. It takes the leading role in Devon in developing Education for Sustainable Development materials and providing a resource group to help schools to develop their own Education for Sustainability initiatives. It is coordinated by the Devon Geography Advisor and Devon Curriculum Services. Adult and Community Learning (ACL) is also well represented within Torbay through the three community colleges of Brixham, Paignton and Torquay as well as in many other community groups, voluntary organisations. ACL balances non-accredited learning for self development and pleasure with reaching out to individuals and groups who have traditionally least benefited from adult learning.

Evidence of support from the tourism sector

The initial project to create a Geopark in 2004 received support from the tourism sector either financially or as services in kind. The following tourism organisations have supported the Geopark activities in one form or another.

Organisation	Type of Organisation	Support
Torbay Coast & Countryside Trust	Community and visitor Provider	Financial and services
Torquay Museum	Museum	Services
Paignton Zoo	Visitor Attraction	Services
Living Coasts	Visitor Attraction	Services
Quaywest	Visitor Attraction	Financial

Organisation	Type of Organisation	Support
Kents Cavern	Visitor Attraction	Financial and services
Babbacombe Model Village	Visitor Attraction	Financial
Paignton Pier	Visitor Attraction	Services
Belle Cruises	Water transport	Services
Oddicombe Cliff Railway	Transport	Services
Occombe Farm	Farm Shop and Centre	Financial and services
Bygones	Visitor Attraction	Services
Riviera International Centre	Leisure & Conference Centre	Financial and services
Torbay Hospitality Association	Trade Association	Services
Torbay Business Forum	Trade Association	Services
Museum Partnership	Trade Association	Services
The Belgrave	Hotel	Financial
The Palace	Hotel	Services
Redcliffe Hotel	Hotel	Financial
Herald Express	Local Newspaper	Services
BBC Radio Devon	Regional Radio Station	Services
Palm FM	Local Radio Station	Services
BBC TV South West	Regional TV Broadcaster	Services
ITV Westcountry	Regional TV Broadcaster	Services
Torquay Boys Grammar School	Secondary School	Services
Torquay Girls Grammar School	Secondary School	Services
Churston Grammar School	Secondary School	Services
South Devon College	Tertiary College	Services
Torquay Tourist Information Centre	Tourist Information Centre	Financial and services
Brixham Tourist Information Centre	Tourist Information Centre	Services
Paignton Tourist Information Centre	Tourist Information Centre	Services

Riviera Centre Green Tourism

The Riviera International Conference Centre (RICC) has a silver award for Green Tourism and work with their customers and event organisers to reduce the effect of their individual events have on the environment. As part of this commitment, the RICC has made been working with the English Riviera Geopark Organisation to look at ways of bringing the Geopark aims into their Green Tourism mandate when attracting large conferences to Torbay.

Torbay Hospitality Association

The THA is the trade association for the accommodation sector on the English Riviera. It is committed to promoting its members and communicating information to them. The English Riviera Geopark has their full support.

Torbay Business Forum

The Torbay Business Forum is the main business association that the Torbay Development Agency turns to for input from the business community. This forum has supported the Geopark since 2004.

The English Riviera Attractions Partnership

This partnership is made up of the 14 visitor attractions, private sector, public sector and voluntary sector and includes the beaches and parks. The areas director of tourism attends the partnership meetings. The overall aim of the partnership is to work together to enhance the success of their member attractions and promote the English Riviera as an exciting resort. The Geopark is fully supported by this association and is represented on the ERGO steering group.

University of Plymouth and South Devon College

University of Plymouth's School of Earth, Ocean and Environmental Sciences (SEOES) was formed in August 2003 by combining the School of Environmental Sciences with Geological Sciences and Marine Science from the Institute of Marine Studies. The School integrates, at undergraduate level, the subject areas of Environmental Sciences, Chemistry, Geosciences, Marine Sciences, Marine Sports Science and Marine Studies. With 85 academic & technical staff, about 50 research staff and 1100 undergraduate students, the School is one of the largest academic institutions in environmental and marine sciences in Europe. The SEOES has provided much input to the English Riviera Geopark through Prof Malcolm Hart, Associate Dean of the SEOES and Dr Kevin Page who both sit on the ERGO steering group.

South Devon College has recently moved to a state-of-the-art campus and is a dynamic contributor to learning and business innovation in the region. The business development manager sits on the ERGO steering group.

South Devon Geographical Association,

The Geographical Association (GA) is a subject association with a mission to further the teaching of geography and to communicate the value of learning geography for all. Currently there are nearly 40 branches affiliated to the GA in England, Wales and Northern Ireland. Each branch arranges its own local programme of events for the benefit of the geographical community in the area. The national GA has around 7,000 memberships including teachers in primary and secondary schools and further education, academic geographers, universities and teacher educators and trainers. The South Devon branch is run by the Geography heads from the three Grammar schools in Torbay who are represented on the ERGO steering group.

Herald Express

The Herald Express is Westcountry Publication's Torquay-based newspaper. It serves a wide surrounding area of coastal and inland communities in South Devon which attracts millions of tourists each year to swell its 100,000-plus resident population. The Herald Express together with its sister paper the Western Morning News have published numerous articles on the Geopark and these can all be viewed at www.thisissouthdevon.co.uk after searching for "Geopark".

C.3. Policies for the protection, enhancement and economic development of the geological heritage

See Geopark Management Plan Section 8 and 9.

C.4 The territory's interest in joining the network

Designation as a Geopark is a goal that has inspired our community and, as the descriptions above evidence, has generated enthusiastic support from all sectors. The reason for this is that the concept of a Geopark fits so well with our area's development and regeneration plans. One of Torbay's key strategic aims is to support and enhance its tourism industry by making better use of the natural heritage with which we have been blessed and the Geopark concept will assist us in delivering that aim.

More specifically, we expect to realise the following benefits as we develop the potential of the English Riviera Geopark:

- The use of the Geopark brand as a marketing tool will have a huge benefit to Torbay. We expect to use the Geopark throughout our marketing activities and to encourage partners within Torbay, in the South-West, in England and internationally, to use this brand as a driver for increased customer awareness and increased visitor numbers as a result.
- Allied with the active promotion of the brand we will develop new geotourism products that offer visitors an improved range of activities associated with the Geopark. As the Geopark develops these will add to existing programmes and extend the range and variety of programmes, including geo-site based walking, biking, canoeing, boat trips, rock climbing, diving, sailing, educational tours, local food trails, art events, festivals, geo-days and other cultural activities.
- The marketing of the Geopark brand and the development of new products will give Torbay access to new tourist markets. We will be able to build additional activity and business upon our existing well-established tourism base, diversifying our appeal and attracting new segments of the market.

- This increased tourism activity will sustain existing jobs in the tourism industry of Torbay and create new jobs as existing businesses grow and new businesses are formed to capitalise upon the opportunities offered by the Geopark. The Geopark will attract visitors on the shoulders of the main tourist season and will help us achieve our goal of year-round, sustainable tourism supporting long-term, better-paid jobs in this sector.
- We already have a good range of geological interpretation and geotourism activities but we know that with the achievement of Geopark status we will be able to work together much more effectively under the synthesising effect of the Geopark brand. Through improved co-ordination and the achievement of targets we will see the heritage sector respond and grow accordingly.
- At the same time as our image and reputation amongst the tourist community improves and broadens in appeal we expect our own community to respond with an increase in civic pride. Geopark status will raise the profile of our natural heritage and encourage greater activity amongst schools, colleges, community and resident groups and the like.
- In turn, increased civic pride and the new opportunities offered by the Geopark will result in increased voluntary activity, with local residents becoming involved in both geosite conservation and geotourism and geo-education.
- The increased focus on geosites and the way people gain access to the geological heritage will bring more resources to bear on the conservation of these sites. This will result in improvements in the quality and extent of conservation possible.
- The promotion of codes of conduct for a range of activities within the Geopark will be more readily achieved when carried out under the banner of the Geopark. The brand communicates not only a message of enjoyment and exploration, but also a message of conservation and sustainability, which will be useful in communicating with visitors and residents alike.
- Torbay already has an international outlook and attracts tourists from all over the world. The opportunities offered by the Geopark to develop new links with partners both in Europe and across the globe are tremendous and we look forward to playing an active part in communicating across the network.
- These improved international links will, we hope, lead to our direct participation in international projects and programmes. Through these we will gain access to experience and best practice in geotourism, interpretation and geosite protection amongst the network.
- We also hope to be able to improve opportunities to access funding from national and international sources for geotourism development and associated works.
- An additional benefit will be that Geopark status will stimulate further research activity and links to and between educational establishments. This will be effective at a local level and we expect to encourage more undergraduates to visit Torbay as part of their studies. We also expect Geopark status to raise awareness amongst the international scientific community of Torbay's geology.
- Finally, as active members of the European Geopark Network we hope that our experience and skills may be of some value to the network. We have good experience of managing mass tourism; providing environmental education; and minimising urban pressures on the geological heritage, and we look forward to sharing these experiences more widely.

D. GENERAL INFORMATION ON THE TERRITORY

D.1 Economic activity

The Torbay Development Agency was established in 2004 as Torbay Council's arms length economic regeneration body and is also responsible for management of the Tor Bay Harbour and tourism services. The TDA works to a private sector board and works closely with important regional organisations including the South West of England Regional Development Agency, a non departmental government body responsible for the SW of England's economic development and South West Tourism the regional tourist board. Since its establishment TDA has already delivered a variety of projects in support of economic growth in Torbay including

work to restore launching facilities to Torquay Harbour, new business incubation facilities at South Devon College and significant plans for the regeneration of the town of Brixham are nearing implementation to include housing, a new supermarket, employment space linked to the fishing industry and a new fish market for the highest value fishing fleet in England and Wales. The business incubation scheme is vitally important, working with the local college to promote entrepreneurship and encourage learning and research to be applied to commercial ventures this scheme will improve the growth and survivability of Torbay's new business start ups.

Within Torbay there are existing sectoral strengths in the following:

- Tourism and leisure
- Retail
- Advanced engineering
- Fishing
- Marine
- Environmental/Marine Science
- Health and Social Care
- Other Value Added Manufacturing

And our strengths include:

- Place, environment, quality of life and leisure opportunities
- High awareness of Torbay as a visitor destination and of the English Riviera brand
- South Devon College – First class technical college
- Some high value activity in hi-tech engineering, health, environmental
- Some underexploited skills in hi-tech manufacturing
- A number of significant employers
- Sectoral strengths in tourism, fishing and some manufacturing operations
- Proximity to Dartmoor National Park and surrounding Areas of Natural Beauty

While Torbay has suffered declining visitor numbers and bed nights in recent years future growth is forecast and there is significant under exploited potential, particularly regarding opportunities in the cultural, heritage and marine leisure sectors. Torbay has significant potential to provide attractive leisure and recreation opportunities for both visitors and residents based on the environmental attractions of the area. The returning potential associated with Paignton Zoo and their marine aviary centre Living Coasts, for example can be maximised by more joint marketing and the development of other facilities with this environmental theme. The attractions of Torbay and the marketing that supports it can also complement the exceptional surrounding environment and activities and attractions such as Dartmoor.

D.2 Provisions for the protection of the region

Tourism is a key sector for Torbay's economy supporting approximately 25% of employment in Torbay and the regeneration strategy for the tourism industry has been outlined in Section C1 above. In addition to tourism the Economic Development Framework for Torbay identifies the following sectors as important:

- Retail
- Advanced engineering
- Fishing
- Marine
- Environmental/Marine Science
- Health and Social Care
- Other Value Added Manufacturing

By identifying the key sectors and actions the strategy aims to meet the changes and challenges to the existing economy by strengthening its ability to adapt and prosper and by encouraging diversification to meet new opportunities.

The economic strategy is also reinforced by the identification by Torbay's directly elected Mayor

and its strategic partnership (the partnership brings together at a local level the different parts of the public sector as well as the private, business, community and voluntary sectors) of the economy as the crucial issue facing Torbay. Currently Torbay’s wealth per head as measured by Gross Value Added stands at 63% of the UK average (approximately 70% of the EU average). The Community Plan developed by the strategic partnership also identifies that

“Taking advantage of the fantastic opportunities for Torbay to reposition and update its tourism offer to take advantage of growth opportunities, a growing season and increased leisure spending particularly marine and outdoor leisure. The maritime heritage and environment of Torbay lends itself to this type of development.” Draft Torbay Community Plan 2006

The community plan also includes sections on the wider sustainability of Torbay recognising that the high quality environment is a reason for visitors and businesses to be here and must be protected.

“Tourism in Torbay” the tourism strategy for the period 2005-2015 also identifies that there is a growing awareness among customers of the value of art, culture and history and those factors inform destination choice. The strategy builds on this by encouraging adding to the distinctiveness of Torbay as destination by building on precisely those strengths that support this application namely the sustainability of the area in both economic and environmental terms, enhancing the appreciation and use of the remarkable natural resources of Torbay and the significant heritage sites within the area.

Within the wider South West both the Regional Economic¹ and Tourism² strategies support this type of activity and the Regional Economic strategy in particular recognises Torbay as a priority area for investment and development. Geopark status for Torbay would accord entirely with the aspirations of both of these strategies

D.3 Analysis of the present status of protection of the region

Overview of Priority Sectors in Torbay

(extract from the Torbay Economic Regeneration Framework www.torbay.gov.uk/efstrategy)

Sector	Overview	Key Issues/Challenges
Tourism and Leisure	Torbay’s economy has historically been, and remains, heavily dependent upon the tourism and leisure sector. The size of the tourism industry is notoriously difficult to quantify because of the interrelations with other industries. South West Tourism estimates that tourism expenditure in Torbay totalled £398m in 2003 and employed 13,388 people, supporting 25% of employment in Torbay. Although Torbay has suffered declining visitor numbers and bed nights in recent years, this decline now appears to have stabilised but Torbay’s core customer base has an increasingly aging and less wealthy profile, and this lack of higher expenditure has stifled investment. Despite the maturity of the tourism industry in Torbay, future growth is forecast and there is significant underexploited potential, particularly regarding opportunities in the marine leisure sector. Tourism is also identified as a priority sector in the Regional Economic Strategy (RES).	<ul style="list-style-type: none"> ■ Some negative visitor perceptions of Torbay being old-fashioned, run down, and down market. ■ The outdated nature and lack of quality of much of the accommodation stock and visitor facilities in Torbay and lack of a branded hotel. ■ The need to engage the private sector in the development and implementation of tourism strategies. ■ The aging and less wealthy profile of visitors. ■ Lack of new / innovative tourism businesses. ■ Transport issues – especially traffic congestion, but also poor rail links and perceptions regarding car parking. ■ Increasing competition from other resorts and destinations both within the UK and overseas.

¹ Available from <http://www.southwestrda.org.uk/>

² Available from <http://www.towards2015.co.uk/>

Sector	Overview	Key Issues/Challenges
Retail	<p>Retail activities employ more than 7,000 people in Torbay. The retail sector is growing and is of considerable importance to Torbay's economy. The retail sector is an LSC priority sector, fits with local strategies and is intrinsically linked to the tourism sector.</p> <p>Retail also supports large numbers of small, independent businesses, has relatively low barriers to entry, and therefore offers opportunities for new business formation and growth. There are opportunities to develop the sector and attract new retailers to Torbay in line with plans to increase the quality of the tourism product in Torbay.</p>	<ul style="list-style-type: none"> ■ Increasing competition from new shopping developments in Exeter and Plymouth. ■ Torbay's location, transport issues and the limited size of existing retail premises provide barriers to attracting major retailers. ■ There is a conflict between the retailers that fit the local demographics and those that will attract more affluent visitors. ■ Visitor numbers are down – negative impacts on retail. ■ Torquay town centre is disadvantaged by having a very linear shape and no focal point. ■ Most retail jobs are part-time, low skilled and low wage.
Advanced Engineering	<p>Advanced engineering is dominated by the electronics sub-sector in Torbay – the largest manufacturing sector in Torbay. Employers in the sector offer relatively high wages and good career opportunities. Advanced engineering is a regional priority sector, giving scope for Torbay to contribute to and benefit from regional sector development initiatives and clustering opportunities.</p> <p>Despite the closure of Nortel and job losses elsewhere in the sector, Torbay has developed a concentration of engineering-based manufacturing operations of considerable economic importance to the local economy, suggesting a local competitive advantage, a pool of skilled labour and opportunities for further development in this sector</p>	<ul style="list-style-type: none"> ■ Sensitivity to variations in the global economy, which have a major impact on the decisions of multi-national companies. ■ Low cost competition from Asia Pacific and Eastern Europe, causing some firms to consider relocating manufacturing operations. ■ Transport links and the peripherality of Torbay as a business location – impact upon travel times and transportation costs. ■ Relatively weak relationships between businesses and under-developed supply chains.

Sector	Overview	Key Issues/Challenges
Fishing	<p>The fishing industry remains important to Torbay, particularly in Brixham - the largest fishing port in England and Wales in terms of volume and value. Torbay Council estimate there are 375 full-time fishermen and a total of 2,500 jobs which are dependent upon the fishing industry in Torbay.</p> <p>Despite declining employment, the fishing industry remains significant, not only in terms of the direct value it adds to the local economy, but because of strong cultural heritage and links with tourism. The regeneration plans for Brixham will help to promote links between fishing and tourism.</p> <p>Processing, marketing and catering activities to add value to local fish offer strong prospects, given that Brixham fish is arguably underdeveloped as a brand. Recreational fishing also offers growth prospects.</p>	<p>cover time in line with national trends and as a result of pressures from European legislation.</p> <ul style="list-style-type: none"> ■ The fish market in Brixham is in critical need of investment. ■ The declining image of the fishing sector raises concerns about long-term employment opportunities and may be a barrier to recruitment.
Marine	<p>Marine industries in Torbay comprise a number of smaller companies involved in a variety of industries connected with the sea, from marine engineering, to port operations, to marine leisure.</p> <p>The sector is estimated to employ approximately 665 people in 125 marine businesses in Torbay.</p> <p>This is considered under-developed in Torbay considering Torbay's coastal location, the quality of the marine environment, and the strong maritime heritage. This suggests potential growth prospects, particularly linked to growth in marine leisure and provision of waterside premises.</p>	<ul style="list-style-type: none"> ■ Torbay faces competition from the growing marine leisure sector in South Hams, Plymouth and Weymouth. ■ Development of the marine engineering sector will be restricted by the conflicting land use with the tourism industry.

Sector	Overview	Key Issues/Challenges
Environmental/ Marine Science	<p>Astra Zeneca is the key company in the environmental/marine science sector and is a significant, relatively large employer in Torbay. This sector employs 119 people and is under-represented in Torbay relative to the national average, although the sector is forecast to grow. The environmental and marine sectors are both identified as regional priority sectors and, more generally, knowledge-based industries fit well with regional and local strategies. The high quality of life in Torbay, and access to good quality sea water, are likely to appeal to these knowledge-based businesses specialising in marine research and development. There is an opportunity to develop these activities in Torbay – linked to the development of a wider regional marine science cluster. This is a high wage sector with significant career opportunities and potential to develop links with South Devon College to address skills gaps/shortages.</p>	<ul style="list-style-type: none"> ■ Opportunities to develop new businesses in this area are likely to be small in scale and few in number. ■ The lack of a knowledge base (except for Astra Zeneca) and the current unavailability of relevant courses at South Devon College are likely to provide barriers to the development of this sector in Torbay. ■ Concentrations of clustered activity elsewhere in South Devon, particularly in Plymouth, will provide significant competition to Torbay in attracting businesses.
Health and Social Care	<p>The health and social care sector employs some 9,000 people in Torbay – approximately 20% of all employees. This sector is growing and is of considerable importance to Torbay’s economy, with strong growth forecast to continue. Torbay has a relatively high concentration of health and social care institutions as a result of its aged and aging local population, with high health and social care demands. The scale of the sector, variety of skill levels and range of new developments mean that there are a wide range of career opportunities. Torbay has a pool of highly skilled, qualified labour, which is expected to increase with links to the Peninsula Medical School. There are opportunities to develop knowledge-based research and development activities, particularly associated with the hospital.</p>	<ul style="list-style-type: none"> ■ Public sector health services are largely dependent on health policy but the strategy does have some scope to influence the development of higher-value research and development opportunities.

Sector	Overview	Key Issues/Challenges
Other Value Added Manufacturing	<p>In Torbay this sector comprises concentrations in the manufacture of plastic products (particularly UPVC windows, doors, etc) and food and drink (particularly meat, bread and biscuits). Together these activities employ some 1,450 people, accounting for almost one third of total manufacturing output in Torbay, and are growing steadily over time. Torbay possesses existing supply chains and a workforce with relevant skills, which suggests that Torbay's locational disadvantages are less significant in this sector. There are specific opportunities to create high-value added services within the food and drink sector including high quality retail food, and specific marketing activities to encourage local sourcing of produce, including Brixham fish.</p>	<ul style="list-style-type: none"> ■ Skills gaps in manufacturing activities in Torbay, particularly for technical staff, and basic skills needs at operator level. ■ The peripherality and poor transport access of Torbay, relative to other local concentrations in this sector, provides a threat to Torbay's ability to attract and retain businesses. ■ Although growth of the total food and drink sector has been stable, the performance of individual sub-sectors has been very unstable and can vary greatly from year to year. ■ Employment in rubber and plastics manufacture is forecast to decline over time.

D.4 Existing facilities and details of their collaboration with the Geopark

Torbay has a number of sites where visitors and residents can access information about the area and the Geopark features in many of these. The primary locations for tourists are the Tourist Information centres, which occupy prominent positions in the three towns of Torquay, Paignton and Brixham. Here visitors can pick up information on events, trails, boat trips, public transport and all other tourist-related needs.

Geological interpretation in the Geopark is found at a number of gateway sites strategically located in the south, middle and north of the territory. In the south is the Berry Head visitor centre, in the middle is the Seashore centre and on the northern headland of the Thatcher Point is Kents Cavern, a show cave. Many of the artefacts associated with 19th century excavation of Kents Cavern are housed at Torquay Museum which has a gallery devoted to the geology of the area.

The Torbay Coast & Countryside Trust provides a comprehensive interpretation network making use of a range of publications, pamphlets and interpretation boards. Trust rangers and other specialists also provide expertise and guidance within Trust areas of responsibility. This includes the SSSI limestone areas of Berry Head, Hopes Nose and Walls' Hill. Berry Head National Nature Reserve possesses a Visitor Centre where the interrelationships of geology, geography and natural history are well interpreted. At Goodrington Beach, Paignton, the Trust runs The Seashore Centre, an education and visitor centre interpreting the marine life of the bay.

Kents Cavern, Torquay, a SSSI within the limestone area (and a nationally important Scheduled Ancient Monument as Britain's oldest recognisable human dwelling), is privately owned and administered. Interpretation throughout is at an extremely professional level and recently there has been considerable capital expenditure in expanding interpretation, visitor facilities and educational concepts associated with the caves and their artefacts. Kents Cavern has an international reputation and attracts about 100,000 visitors a year. It holds a number of national and regional quality awards.

Local rock has been used for building stone over the centuries and this built heritage is an important characteristic of the Geopark. A Napoleonic fort at Berry Head, the historic 12th century Torre Abbey, windmills, viaducts, Regency and Victorian manor houses all offer marvellous opportunity to view the rich geological heritage of the region.

These sites provide interpretation for visitors and strong collaboration exists between the operators of these sites and the management of the Geopark. Full details of the management structure of the Geopark can be found in the accompanying English Riviera Geopark Management Plan.

D.5 Future facilities planned

Torbay is currently entering a period of dramatic growth and diversification, as its new regeneration strategies and improved governance systems begin to take effect. Successful funding bids for Torquay Waterfront, Brixham Harbour, South Devon College and Ocombe Farm are examples of recent high-profile achievements that are creating a growing momentum and sense of change in the Bay. These are all developments that have succeeded because they built partnerships, often between the public / private / voluntary sectors. Many other significant capital projects are planned, including a new casino, improved transport infrastructure and the creation of a maritime centre of excellence.

In terms of geo-tourism, specifically, a major project is currently being developed for Berry Head to overhaul its visitor facilities, improve the conservation of its heritage features and reach out to new audiences both locally and further afield. This £750,000 (€525,000) project is due to be completed in 2009.

At The Palace Hotel, Torquay, a major infrastructure project is planned to construct 50 new holiday apartments, themed upon the links to the natural heritage of the area and with specific reference to the geological heritage. This will see the hotel invest in upgraded trails and interpretation in the area, creating a viewing platform over Long Quarry Point and re-creating access to Redgate Beach, all part of the Wall's Hill SSSI.

There are also plans to redevelop the Goodrington Beach site, including the Seashore Centre, to provide it with bigger facilities even closer to the seafront.

Finally, Torbay would benefit from a new Gateway Geopark Site where a purpose-built Geopark Visitor Centre could welcome visitors to the Bay as they arrive, direct them to the facilities they need and encourage them to take advantage of all the geo-activities on offer. This remains a long-term dream.

CONSTITUTION OF THE ENGLISH RIVIERA GEOPARK ORGANISATION (ERGO)

1. Aims

- i) We coordinate the management of the English Riviera Geopark (ERG)
- ii) We promote, support and facilitate, encourage and enable local projects, initiatives and events that help protect and raise awareness of Torbay's geological heritage.
- iii) We strengthen existing partnerships and develop new networks to ensure that the geological qualities of the ERG are sustained and promoted for current and future generations.

2. Frequency of Meetings

The English Riviera Geopark Organisation (ERGO) shall meet once every three months. The venue shall rotate around Torbay.

3. Membership

- i) Membership of the ERGO is open to organisations that support the aims of the ERGO.
- ii) Voting rights shall be held by all registered member organisations that have signed up to the code of conduct, each registered member organisation having one vote. The organisation is responsible for determining who has that vote.
- iii) Decisions will preferably be taken by consensus, or by voting by a show of hands, secret ballot or a postal vote as is deemed most appropriate and inclusive.
- iv) Voting to elect representatives on other bodies shall take place at any meeting, with positions lasting until re-election at each AGM.
- v) The ERGO may co-opt individuals as full voting members if it so decides.
- vi) A subscription fee shall be payable by all members and the amount of the fee shall be set at the Annual General Meeting.

4. Annual General Meeting

- i) Six weeks written notice shall be given to all members of the intention to hold an AGM.
- ii) The business of the AGM shall be:-
 - a. to receive and adopt the annual report of the officers,
 - b. to receive and adopt the accounts,
 - c. to elect officers as deemed appropriate,
 - d. to discuss and vote on any other motions of which 10 working days prior notice has been given in writing.
 - e. to set the subscription fee
- iii) Ten per cent of the registered membership or 5 registered members, whichever is the greatest, shall constitute a quorum for the AGM or other General Meetings.

5. Officers

- i) The officers will consist of a chairperson, treasurer and secretary. These are jobs and not positions of authority.
- ii) All posts will be re-elected at the next AGM, or at an EGM, where officers step down.

6. Extraordinary General Meetings

Extraordinary general meetings can be called by 5 or more registered members, on giving at least one calendar month's written notice to all other registered members, specifying date, time, location, agenda and motions for the meeting; each registered member signing the notice with their names, which shall also be printed at the bottom of the notice.

7. Operational Boundaries

The ERGO will operate within Torbay, but will develop and maintain links with neighbouring district, county, regional, national and international initiatives.

8. Financial Matters

- i) All monies raised by the ERGO shall be applied to further the objectives of the ERGO and for no other purpose.
- ii) The treasurer shall keep proper account of the finances. The bank account will be shared with the Torbay Heritage Forum.
- iii) Any withdrawals from the account will require the signature of 2 out of 3 designated elected officers of the Torbay Heritage Forum.
- iv) The accounts for the financial year shall be inspected by a qualified person, appointed at the AGM or an EGM, who is not an elected officer.

9. Constitution

This definitive constitution can only be changed by a motion at the AGM or an EGM, which is supported by consensus or at least the agreement of two thirds of the meeting.

10. Winding Up

- i) The ERGO shall be wound up by a vote at the AGM or an EGM.
- ii) Any monies held shall be paid to a heritage charity chosen at the same meeting.

11. English Riviera Geopark Steering Group

A English Riviera Geopark Steering Group shall be established in order to:

- i) Spearhead the work of the Organisation and drive forward the implementation of the Strategy
- ii) Carry out initial reviews of the Strategy for ratification by the Organisation
- iii) Plan the meetings of the Organisation and prepare discussion documents
- iv) Take operational decisions in accordance with a delegation scheme as previously agreed by the Organisation.

The membership of the steering group shall be selected at the AGM, shall include the elected officers and should cover the following subject areas:

- a) Geoscience sector
- b) Local authority
- c) Tourism and hospitality sector
- d) Voluntary sector
- e) Natural heritage
- f) Built heritage, landscapes, parks and gardens
- g) Museums, cultural and industrial heritage sector
- h) Education and community sector

January 2007

EXTRACTS FROM NATIONAL, REGIONAL AND LOCAL PLANS

1. NATIONAL GUIDANCE

Planning Policy Statement 9: Biodiversity and Geological Conservation

In the context of this PPS, biodiversity is the variety of life in all its forms as discussed in the UK Biodiversity Action Plan. Geological conservation relates to the sites that are designated for their geology and/or geomorphological importance. (A list of designated sites included in the Geological Conservation Review is held by the Joint Nature Conservation Committee (JNCC), www.jncc.gov.uk/earthheritage).

Planning for Biodiversity and Geological Conservation: A Guide to Good Practice

This provides good practice guidance on ways regional planning bodies and local planning authorities can help deliver the national policies in PPS9 and comply with legal requirements set out in the Circular 06/05.

http://www.communities.gov.uk/pub/843/PlanningforBiodiversityandGeologicalConservationAGuidetoGoodPractice_id1164843.pdf

2. REGIONAL GUIDANCE

The Draft Regional Spatial Strategy (submitted to Government)

(see website: http://www.southwest-ra.gov.uk/nqcontent.cfm?a_id=836)

Para 7.2.5

Development has the capacity to result in irreversible changes to the environment and natural resources, so it is crucial for the planning system to limit the impact of future development on the environment and where possible to use development in a positive way to enhance assets and increase biodiversity. The requirement for all LDDs to be subject to Strategic Environmental Assessment and sustainability appraisal should help in identifying potential solutions to mitigate unavoidable impacts. Successful application of this will also help to ensure that the environment and sustainability are considered more holistically and that decisions are made based on firm evidence. This approach fully supports national policy in PPSs 7, 9 and 15. Whilst the following sections are set out under the different headings of landscape, nature conservation, historic environment and so on, local authorities should adopt a systematic approach to the environment in their LDDs and a common approach to environmental assets which cross local planning authority boundaries, particularly taking an ecosystem approach.

ENV1 Protecting and Enhancing the Region's Natural and Historic Environment

The quality, character, diversity and local distinctiveness of the natural and historic environment in the South West will be protected and enhanced, and developments which support their positive management will be encouraged. Where development and changes in land use are planned which would affect these assets, local authorities will first seek to avoid loss of or damage to the assets, then mitigate any unavoidable damage, and compensate for loss or damage through offsetting actions. Priority will be given to preserving and enhancing sites of international or national landscape, nature conservation, geological, archaeological or historic importance. Tools such as characterisation and surveys will be used to enhance local sites, features and distinctiveness through development, including the setting of settlements and buildings within the landscape and contributing to the regeneration and restoration of the area.

Para 7.3.24

MPAs should maximise the opportunities to protect and enhance biodiversity and geodiversity during the operational life of workings and promote environmentally beneficial reclamation and aftercare of mineral workings. Due regard should be given to aims of Biodiversity Action Plans and Geodiversity Action Plans (where produced) and the landscape character of locally affected areas.

3. LOCAL GUIDANCE

The Explanatory Text for the Nature Conservation Chapter of the Adopted Torbay Local Plan (1995-2011) includes the following statements:

12.4 Torbay also benefits from being one of Britain's 'classic' geological regions. Many sites are of national and international importance and are used for demonstration and teaching purposes. Since the early 19th Century, pioneer geologists have studied rocks and fossils in and around Torbay. This work gave rise to the first recognised geological time period - hence the

name 'Devonian'. Much of Torbay's geological interest occurs in the cliffs and quarries of the Coastal Zone and several nationally important geological sites are scheduled as Sites of Special Scientific Interest (Policy NC2). Inland, there are a number of Regionally Important Geological Sites that are protected by Policy NC3.

12.23 County Geological Sites also known as Regionally Important Sites are designated by the Devon RIGS Group. Geology plays a significant part in the development of the wildlife environment and biodiversity through factors such as soil formation and topography. These sites do not have statutory protection but have the same status as County Wildlife sites. Torbay's six Regionally Important Sites are, located at Chapel Hill and Quarry Woods Quarry in Torquay, at Barcombe Mews Quarry and Goodrington Quarry/Road Cutting in Paignton, at Brokenbury Quarry in Churston and at Breakwater Quarry in Brixham.

The following policies apply:

Policy No.	Policy
NCS	NCS Nature conservation strategy Development should preserve or enhance the biodiversity, wildlife and geological value of the terrestrial and marine environment. Planning conditions or obligations will be sought to include measures to mitigate the effects of development upon features of nature conservation value or require the provision of new or alternative features.
NC1	NC1 Protected sites - internationally important sites Development that would harm the integrity of a Special Area of Conservation (SAC), Special Protection Area (SPA), or which conflicts with the conservation objectives for such a site, will not be permitted.
NC2	Development proposals likely to affect, directly or indirectly, areas of special nature conservation significance, including designated or proposed Sites of Special Scientific Interest and National Nature Reserves will only be permitted where:- (1) the development would cause no harm to the nature conservation value of the site; (2) the development can be controlled through the use of planning conditions to prevent damaging impacts; (3) the justification for the development can be shown to outweigh the likely harm to national nature conservation interests and no alternative sites exist elsewhere; and (4) mitigation measures can be taken to minimise damage, including the provision of new habitats where practicable.
NC3	NC3 Protected sites - locally important sites Development proposals likely to harm, directly or indirectly, locally designated wildlife or geological sites of regional or countywide significance, local wildlife sites, local nature reserves and sensitive intertidal habitats will only be permitted where:- (1) there are no reasonable, less damaging, alternative sites; (2) the reasons for the development can be shown to outweigh the damage to nature conservation interests; (3) every effort has been made to minimise any damage to nature conservation interests; and (4) mitigation measures can be provided to manage remaining wildlife features and secure habitat creation or enhancement elsewhere within the site or locally.

Policy No.	Policy
<p>NC4</p>	<p>NC4 Wildlife Corridors Proposals for development which would have an adverse effect on a wildlife corridor will only be permitted where the retention, integrity and beneficial management of the links between wildlife habitats can be achieved. The policy will apply to the following wildlife corridors:- <i>Torquay</i> (1) Browns Bridge Road / Scotts Meadow Fringes (2) Nutbush Lane / Sherwell Valley / Rainbow (3) Warberries / Walls Hill (4) Meadfoot / Lincombe Slopes / Ilsham (5) Cockington Lane / Torbay Road <i>Paignton</i> (6) Preston Down Road / Hollicombe (7) Clennon Valley / Goodrington (8) Roselands / Grange Road <i>Brixham</i> (9) Summercombe / St. Mary's Park Proposals that have an adverse effect on other natural features that form important links between wildlife habitats will require appropriate mitigation measures to be implemented as part of the development.</p>
<p>NC5</p>	<p>NC5 Protected species Development which would harm, directly or indirectly, a protected species, will only be granted planning permission where there is an over-riding need. Such proposals would have to ensure:- (1) the survival of groups, numbers, genetic diversity and individual members of the species; (2) disturbance of the species or its habitat is reduced to a minimum; and (3) provision of adequate alternative habitats to sustain at least the current levels of population.</p>

REPRESENTATIVE SCIENTIFIC BIBLIOGRAPHY

- ANNIS, L.G. 1927. The geology of the Saltern Cove area, Torquay. *Quarterly Journal of the Geological Society of London* 83: 492-500.
- BAKER, A. and PROCTOR, C. 1996. The caves of Berry Head. In: CHARMAN, D.J. et al.: 147-162.
- BEER, K. E. and SCRIVENER, R. C. 1982. Metalliferous mineralisation. In: DURRANCE, E. M. and LAMING, D. J. C. (eds): 117 - 147.
- BENTON, M.J., COOK, E. and TURNER, P. 2000. Permian and Triassic Red Beds and the Penarth Group of Great Britain. GCR Series No. 24, Joint Nature Conservation Committee, Peterborough, 337pp
- BOWEN, D.Q., SYKES, GA., REEVES, A. et al. 1985. Amino acid geochronology of raised beaches in south-west Britain. *Quaternary Science Reviews* 4: 279-318.
- BRAITHWAITE, C.J.R. 1967. Carbonate environments in the Middle Devonian of South Devon, England. *Sedimentary Geology* 1: 283-320.
- CAMPBELL, J.B. and SAMPSON, C.G. 1971. A new analysis of Kents Cavern, Devonshire, England. *University of Oregon Anthropological papers* 3.
- CAMPBELL, S., HUNT, C. O., SCOURSE, J. D., KEEN, D. H. and STEPHENS, N. 1998. *Quaternary of South-West England*. GCR Series No. 14, Joint Nature Conservation Committee, Peterborough, and Chapman and Hall, 439pp.
- CASTLE, C. 1977. Conodonts from the Middle-Upper Devonian boundary beds at Barton Quarry, Torquay (Abstract). *Proceedings of the Ussher Society* 4: 62.
- CASTLE, C. 1978. Conodont faunas from Babbacombe Cliff, Torquay. *Proceedings of the Ussher Society* 4:
- CHAMPERNOWNE, A. 1874. On a contortion of the limestone of Torquay, and the presence of *Calceola sandalina* at its base. *Report and transactions of the Devonshire Association for the advancement of Science* 6: 548-551.
- CHARMAN, D.J., NEWNHAM, R.M. and CROOT, D.G. (eds) 1996. *Devon and East Cornwall Field Guide*. Quaternary Research Association: 224pp.
- CLARK, A.M. and CRIDDLE, A.J. 1982. Palladium minerals from Hope's Nose, Torquay, Devon. *Mineralogical Magazine* 46: 371-377.
- COWARD, M.P. and MCCLAY, K.R. 1983. Thrust tectonics of South Devon. *Journal of the Geological Society of London* 140: 215-238.
- DAVIDSON, 1864-1882. A monograph of British Devonian brachiopoda. *Monograph of the Palaeontographical Society, London*.
- DE LA BECHE, H.T. 1839. Report on the geology of Cornwall, Devon and West Somerset. *Memoir of the Geological Survey*, London: 648pp.
- DURRANCE, E. M. and LAMING, D. J. C. 1982. *The Geology of Devon*, University of Exeter, 346pp.
- EDMONDS, E. A., MCKEOWN, M. C. and WILLIAMS, M. 1975. *British Regional Geology: South-West England*, H.M.S.O., 138pp.
- ELLIOT, F.G. 1961. A new British Devonian alga, *Palaeoporella lummatonensis*, and the brachiopod evidence of the age of the Lummaton Shell Bed. *Proceedings of the Geologist's Association* 72: 251-260.
- EMBREY, P.G. and SYMES, R.F. 1987. *Minerals of Devon and Cornwall*. British Museum (Natural History), London and the Mineralogical Record Inc., Tucson: 154pp.
- EVANS, J.W. 1919. Devonian of Great Britain (Sedimentary Rocks). *Handbuch der regionalen Geologie* 3: 104-137.
- GOLDRING, R. 1978. Devonian. In: MCKERROW, W.S. (ed.) *The ecology of fossils – an illustrated guide*. Duckworth, 384pp.

- GOODGER, K.B., BUGLASS, A. and SCRUTTON, C.T. 1984. Sequence of coralline faunas and depositional environments in the Middle Devonian Daddyhole Limestone Formation stratotype section, Torquay, Devon. *Proceedings of the Ussher Society* 6: 13-24.
- GORDON, W.T. 1922. Native gold at Torquay, Devonshire. *Nature* 109: 583.
- HOLWILL, F.J.W. 1966. Conglomerates, tuffs and concretionary beds in the Upper Devonian of Waterside Cove, near Goodrington Sands, Torbay. *Proceedings of the Ussher Society* 1: 238-241.
- HOUSE, M.R. 1963. Devonian ammonoid successions and facies in Devon and Cornwall. *Quarterly Journal of the Geological Society London* 199: 1-27.
- HOUSE, M.R. 1964. A new goniatite locality at Babbacombe and its problems. *Proceedings of the Ussher Society* 1: 125-126.
- HOUSE, M.R. 2002a. Devonian (Frasnian) goniatites from waterside Cove and Staverton Wood, South Devon. *Geoscience in south-west England* 10: 267-280.
- HOUSE, M.R. 2002a. Devonian (Givetian) goniatites from Wolborough, Barton and Lummaton, South Devon. *Geoscience in south-west England* 10: 281-292.
- HOUSE, M.R. and SELWOOD, E.B. 1966. Palaeozoic palaeontology in Devon and Cornwall. In: HOSKING, K.F.G. and SHRIMPSON, G.J. (eds). Present views of the Geology of Cornwall and Devon: 45-86. Penzance.
- HOUSE, M.R., RICHARDSON, J.B., CHALONER, W.G., ALLEN, J.R.L., HOLLAND, C.H. and WESTOLL, T.S. 1977. A correlation of the Devonian rocks of the British Isles. *Geological Society of London Special Report* 8: 110pp.
- JUKES-BROWNE, A.J. 1906. The Devonian limestones of Lummaton Hill, near Torquay. *Proceedings of the Geologist's Association* 19: 291-302.
- KENNARD, A.S. 1945. The early digs in Kents Hole, Torquay, and Mrs Cazalet. *Proceedings of the Geologist's Association* 17: 213-268.
- KENNEDY, R.J. 1994. British Devonian trilobites. *Monograph of the Palaeontographical Society, London*, Part 1: 33pp.
- LAMING, D. J. C. 1966. Imbrications, paleocurrents and other sedimentary features in Lower New red Sandstone, Devonshire, England. *Journal of sedimentary petrology* 17: 23-28.
- LAMING, D. J. C. 1969. A guide to the New Red Sandstone of Tor Bay, Petit Tor and Shaldon. *Report and transactions of the Devonshire Association for the advancement of Science* 101: 207-218.
- LAMING, D. J. C. 1982. The New Red Sandstone. In: DURRANCE, E. M. and LAMING, D. J. C. (eds): 148 - 178.
- LISTER, A.M. 1987. Giant deer and the giant deer from Kents Cavern, and the status of *Strongyloceras spelaeus* Owen. *Transactions and proceedings of the Torquay natural History Society* 91: 189-198.
- LLOYD, W. 1933. The geology of the country around Torquay (2nd edition). *Memoir of the geological survey, England and Wales*, 169pp.
- MACFADYEN, W. A. 1970. *Geological Highlights of the West Country: a Nature Conservancy Handbook*, Butterworths, 296pp.
- MATTHEWS, S.C. 1970. Conodonts from the Lummaton Shell Bed (Middle Devonian. Torquay). *Proceedings of the Ussher Society* 2: 170-172.
- MAYALL, M.J. 1979. Facies and sedimentology of part of the Middle Devonian limestones of Brixham, South Devon, England. *Proceedings of the Geologist's Association* 90: 171-179.
- MORRIS, S.F. 1988. A review of British trilobites including a synoptic supplement of Salter's monograph. *Monograph of the Palaeontographical Society, London*: 316pp.
- MOTTESHEAD, D.N., GILBERTSON, D.D. and KEEN, D.H. 1987. The raised beaches and shore platforms of Torbay: a re-evaluation. *Proceedings of the Geologist's Association* 98: 241-257.
- ORME, A.R. 1960. The raised beaches and strandlines of South Devon. *Field Studies* 1: 109-130.
- PENGELLY, W. 1868. The literature of Kents Cavern, prior to 1859. *Report and transactions of the Devonshire Association for the advancement of Science, Literature and Art* 1: 469-522.
- PENGELLY, W. 1869-1884. The literature of Kents Cavern. *Report and transactions of the Devonshire Association for the advancement of Science, Literature and Art*, 3: 191-202 (Part II); 4: 467-490 (Part III); 10: 141-181 (Part IV); 16: 189-488 (Part V).

- PERKINS, J.W. 1971. Geology explained in south and east Devon. Devon and Charles, 192pp.
- POLLARD, J.E. 1975. A problematic trace fossil from the Tor bay breccias of south Devon: Written discussion of a paper taken as read. *Proceedings of the Geologist's Association* 20: 105-108.
- PROCTOR, C. 1996. Kents Cavern. In: CHARMAN, D.J. et al.: 163-167.
- PROCTOR, C. and SMART, P.L. 1991. A dated cave sediment record of pleistocene transgressions on Berry Head, Southwest England. *Journal of Quaternary Science* 6: 233-244.
- REED, F.R.C. 1920-1922. Notes on the fauna of the Lower Devonian beds of Torquay. *Geological Magazine* 57: 299-306, 341-347; 58: 313-324; 59: 268-275, 303-309.
- RICHTER, D. 1967. Sedimentology and facies of the Meadfoot Beds (Lower Devonian) in south-east Devon (England). *Geol. Rundsch.* 56: 543-561.
- RIDGWAY, J.M. 1974. A problematical trace fossil from the New Red sandstone of south Devon. *Proceedings of the Geologist's Association* 85: 511-517.
- RIDGWAY, J.M. 1975. A problematic trace fossil from the Torbay breccias of south Devon: Written discussion of a paper taken as read – Reply by the author. *Proceedings of the Geologist's Association* 20: 108-109.
- ROGERS, E.H. 1956. Stratification of the cave earth in Kents Cavern. *Proceedings of the Devon Archaeological and Exploration Society* 5: 68-92.
- RUSSELL, A. 1929. On the occurrence of native gold at Hope's Nose, Torquay, Devonshire. *Mineralogical Magazine* 22: 159-162.
- SCRIVENER, M.F. 1987. *An introduction to the geology of the Torquay district*. Torquay Natural history Society, Torquay, 18pp.
- SCRIVENER, R.C., COOPER, B.V., GEORGE, M.C. and SHEPHERD, T.J. 1982. Gold-bearing carbonate veins in the Middle Devonian limestone of Hope's Nose, Torquay. *Proceedings of the Ussher Society* 5: 393.
- SCRUTTON, C.T. 1965. The ages of some coral faunas in the Torquay area. *Proceedings of the Ussher Society* 1: 186-188.
- SCRUTTON, C.T. 1967. Marisastridae (Rugosa) from south-east Devonshire. *Palaeontology* 10:266-279.
- SCRUTTON, C.T. 1968. Colonial Phillipsaestraeidae from the Devonian of south-east Devon, England. *Bulletin of the British Museum, Natural History (Geology)* 15: 181-281.
- SCRUTTON, C.T. 1977a. Reef facies in the Devonian of eastern South Devon, England. *Memoir de la Bureau de recherche geologique et minière* 89: 125-135.
- SCRUTTON, C.T. 1977b. Facies variations in the Devonian limestones of eastern South Devon. *Geological Magazine* 114: 165-193.
- SCRUTTON, C.T. 1978 (ed.). Palaeontological Association International Symposium on the Devonian System (P.A.D.S. 78): A field guide to selected areas of the Devonian of South-West England. Palaeontological Association: 73pp.
- SEDGWICK, A. and MURCHISON, R.I. 1840. On the physical structure of Devonshire, and on the subdivisions and geological relations of its older stratified deposits, &c. *Transactions of the geological Society, London, Series 2*, 5: 633-704.
- SELWOOD, E. B. 1966. Thysanopeltidae (Trilobita) from the British Devonian. *Bulletin of the British Museum, Natural History (Geology)* 13: 191-220.
- SELWOOD, E. B. and DURRANCE, E. M. 1982. The Devonian rocks. In: DURRANCE, E. M. and LAMING, D. J. C. (eds): 15 - 41.
- SELWOOD, E. B., FRESHNEY, E. C. and DURRANCE, E. M. 1982. The Variscan structures. In: DURRANCE, E. M. and LAMING, D. J. C. (eds): 66 - 84.
- SHANNON, W.G. 1921. Some additions to the palaeontology of south-east Devon. *Report and transactions of the Devonshire Association for the advancement of Science* 53: 246-253.
- STANLEY, C.J. and CRIDDLE, A.J. 1990. Precious and base metal selenide mineralization at Hope's Nose, Torquay, Devon. *Mineralogical Magazine* 54: 485-493.
- STRAW, A. 1983. Kents Cavern. *Devon Archaeology* 1: 14-21.
- STRAW, A. 1996. The Quaternary record of Kents Cavern – a brief reminder and update. *Quaternary Newsletter* 80: 17-25.

USSHER, W.A.E. 1903. The geology of the country around Torquay. *Memoir of the geological survey, England and Wales*, 142pp.

VAN STRAATEN, P. and TUCKER, M.E. 1972. The Saltern Cove Goniatite Bed is an intraformational slump. *Palaeontology* 15: 430-438.

VATCHELL, E.T. 1953. Kents Cavern, its origins and history. *Transactions and proceedings of the Torquay natural History Society* 11: 51-73.

WHIDBORNE, G.F. 1888-1907 A monograph of the Devonian fauna of the south of England. *Monograph of the Palaeontographical Society, London*, Part 1 344pp; Part 2: 122pp; Part 3: 247pp.

SITE-SPECIFIC MANAGEMENT OBJECTIVES

Site name	Main threats	Conservation objectives	Management recommendations/ actions
Babbacombe Cliffs SSSI	Growth of trees and other vegetation obscuring exposures; Civil engineering works to stabilise slopes. Maintenance as woodland without intervention.	Ensure that future coastal or footpath main-tenance works do not lead to any net loss of exposure of 'Babbacombe Shales'. Clear and maintain key exposures of Barton Limestone, etc. in wooded slopes above beach, including access routes.	Initiate survey of exposures of Barton Limestone, etc. in wooded slopes and establish clearance and maintenance programme.
	Coastal protection; Civil engineering including cliff stabilisation and footpath maintenance projects; Collection of rare fossil faunas.	Ensure that cliff stabilisation and other works at Oddicombe Beach do not lead to any loss of key exposures of the stratotype of the Oddicombe Breccias Fm..	Ensure that TC is aware of geological significance and consults with EN/TCCT before initiating any works.
	Natural degradation and vegetation growth; Coastal protection; Civil engineering including cliff stabilisation	Ensure that the collection of geological samples from in-situ is only for research or education.	Ensure that TC is aware of geological significance and consults with EN/TCCT before initiating any works.
Barcombe Mews Quarry CGS	Natural degradation and vegetation growth; Fly-tipping; Domestic housing and related developments; Misuse, e.g. inappropriate recreational activities	Maintain exposure in safe accessible condition for schoollevel use.	Ensure that vegetation and any tipped material is regularly cleared and face is inspected for any potential safety issues.
Barton Quarry CGS (proposed)	Vegetation growth obscuring exposures; Waste disposal, including fly-tipping. Civil engineering including stabilisation of faces, and industrial and domestic development.	Ensure that there is no further net loss of geological exposures in the site or removal of potentially scientifically important scree material. Maintain access to scientifically important areas of quarry face. Ensure that the collection of geological samples from in-situ is only for research or education.	Initiate survey of site to document surviving features and identify areas for vegetation clearance. Discuss significance of site with owners and managers to ensure aims of designation and management are fully understood.

Site name	Main threats	Conservation objectives	Management recommendations/ actions
Berry Head to Sharkham SSSI / Sharkham Point to Berry Head CGS (proposed)	Coastal protection; Civil engineering associated with sewage outfall.		Ensure that development and maintenance of sewage outfall does not prejudice key geological exposures (e.g. through liaison with SWW).
	Coastal protection; Civil engineering to stabilise cliffs and landslip, including linked to development in coastal zone; Unsustainable recreational fossil collecting.		Ensure that development plans for adjacent derelict site do not permit construction close to the top of the active landslip systems which in turn may require potentially damaging stabilisation works. Discourage unsustainable recreational fossil collecting to ensure specimens remain available for other visitors to see.
	Coastal protection; Civil engineering to stabilise cliffs, including as a result of development close to cliff edge.		Ensure that any proposals for coastal works do not lead to the loss of key geological features.
	Natural degradation and vegetation growth; Inappropriate restoration of site which has led to high and unstable faces; Civil engineering to stabilise faces; Conservation management restricting access inappropriately.		Ensure that safety and other works do not lead to the loss of key geological exposures.
	Coastal protection; Civil engineering to stabilise cliffs.		Ensure that any proposals for coastal works do not lead to the loss of key geological features.
	Coastal protection works; Civil engineering and other development affecting foreshore.		Ensure that any proposals for coastal works do not lead to the loss of key geological features.
	Natural degradation and vegetation growth; Waste disposal/ dumping; Unsustainable recreational collecting.		Ensure that collection of samples is only carried out for scientific and educational purposes.
	None likely.		None necessary.

Site name	Main threats	Conservation objectives	Management recommendations/ actions
Berry Head to Sharkham SSSI / Sharkham Point to Berry Head CGS (proposed) <i>continued</i>	Natural degradation and vegetation growth; Coastal protection Civil engineering including cliff stabilisation, potential linked to cliff top development.		Ensure that any proposals for coastal works do not lead to the loss of key geological features.
	Natural degradation and vegetation growth leading to collapse of entrances; Coastal protection; Inappropriate restoration of quarry leading to high and unstable faces; Civil engineering to stabilise faces; Conservation management restricting access inappropriately; Damage to systems and deposits by inexperienced or irresponsible users.		(a) Ensure that conservation of bats in caves is fully integrated with geoconservation objectives. (b) Consider gating any cave entrances currently not with physical access controls, in liaison with cave specialists. (c) Promote further research on the caves of Berry Head to ensure that scientific importance is more widely appreciated.
Breakwater Quarry CGS	Natural degradation and vegetation growth; Waste disposal/ fly tipping; Civil engineering and development.	Maintain documented exposures. Improve access subject to safety considerations.	Ensure that vegetation growth engineered stabilisation does not lead to loss of exposure. Investigated potential for improved access for educational groups.
Brockenbury Quarry CGS	Natural degradation and vegetation growth; Waste disposal / fly tipping; Civil engineering and development.	Maintain documented exposures. Improve access subject to safety considerations.	Ensure that vegetation growth engineered stabilisation does not lead to loss of exposure. Investigated potential for improved access for educational groups.
Brixham Cavern CGS (proposed)	Natural degradation (e.g. due to unsuitable environmental conditions in cave); Development in proximity of cave that may lead to stability, etc., issues;	Maintain what remains of cave system is favourable condition. Including through stabilisation if necessary. Ensure that environmental conditions within cave are stable and do not lead to damage to features including bone deposits	Initiate full engineering and environmental survey of cave to determine what measures might be required to stabilise conditions. Incorporate recommendations of survey into a Cave Management Plan and implement.

Site name	Main threats	Conservation objectives	Management recommendations/ actions
Brixham Cavern CGS (proposed) continued	Scheduled Ancient Monument status or presence of bats inappropriately inhibiting geological research; Overuse or misuse leading to damage to deposits.	Maintain restricted access to cave and gating in good order to ensure that site is only used for scientific, archaeological or managed educational purposes. Produce and implement an agreed Cave Conservation Plan.	Initiate full engineering and environmental survey of cave to determine what measures might be required to stabilise conditions. Incorporate recommendations of survey into a Cave Management Plan and implement.
Chapel Hill CGS	Natural degradation and vegetation growth; Civil engineering including roadworks and stabilisation.	Ensure that exposure is not damaged or concealed by road works including installation of signs and other infrastructure.	Maintain exposure free of vegetation, etc. Liaise with highways authorities to minimise risk of inadvertent damage.
Churston Cove-Churston Point CGS (proposed)	Coastal protection; Civil engineering associated with cliff stabilisation, e.g. linked to development;	Maintain current level of cliff / fore-shore exposure and ensure that there is no net loss, in particular key features of the stratotype of the Churston Member. Ensure that the collection of geological samples from in-situ is only for research or education.	Ensure that coastal defence and other works do not lead to a net loss of key exposures.
Daddyhole SSSI	Natural degradation and vegetation growth; Coastal protection; Civil engineering including cliff stabilisation; Overuse or misuse including unsustainable recreational collecting.	Maintain current level of cliff and foreshore exposure and ensure that there is no net loss of key geological features, in particular key features of the stratotype of the Daddyhole Md. Ensure that the collection of geological samples from in-situ is only for research or education purposes in the area of Daddyhole Quarry Sampling of the fossil-rich bedding surface at Triangle Point should only be permitted under exceptional circumstances and only then of small samples from inconspicuous areas, following full agreement of EN/TCCT.	Ensure that cliff stabilisation does not prejudice key exposures, whilst improving safe access to Triangle Point.
	Coastal protection; Civil engineering to stabilise adjacent cliff; Attempts to collect fossils from in-situ exposures.		Place signs and/or interpretation to help protect sensitive exposures from irresponsible attempts to collect specimens Provide/ excavate steps to improve safe access for visitors in conjunction with safety works on slopes above.

Site name	Main threats	Conservation objectives	Management recommendations/ actions
Dyer's Quarry SSSI	Natural degradation and vegetation growth; Coastal protection; Civil engineering including cliff stabilisation;	Maintain current level of exposure and ensure that there is no net loss of key geological features. Ensure that the collection of samples is only for research purposes, in particular the fossil-rich quarry floor should only be sampled under exceptional circumstances and only then of small samples from inconspicuous areas, following full agreement of EN/TCCT.	Place signs and/or interpretation to help protect sensitive exposures from irresponsible attempts to collect specimens. Provide/ construct steps to improve safe access for guided visitors only, in conjunction with safety works on slopes/ rock faces above.
	Natural degradation and vegetation growth; Coastal protection; Civil engineering including cliff stabilisation; Attempts to collect in-situ corals, etc. and abrasion by visitors.		Ensure that the coral-rich surfaces are not damaged by: (a) Preventing fossil collecting from in-situ. (b) Directing access to defined areas/ routes to minimise abrasion to delicate features.
Hollicombe Head - Corbyn's Head CGS (proposed)	Coastal protection; Civil engineering to stabilise cliffs and development of coast.	Maintain current level of cliff and foreshore exposure and ensure that there is no net loss, in particular of key features of the stratotype of the Corbyn's Head Mb.	Ensure that cliff stabilisation and foreshore works do not prejudice key exposures, including through liaison with TC and owners of cliff-top properties.
Hope's Nose to Wall's Hill SSSI / Black Head-Anstey's Cove CGS (proposed)/ Hope's Nose (south) CGS (proposed)	Natural degradation and vegetation growth; Waste dumping by site users; Unsustainable recreational collecting.	Maintain current level of cliff and foreshore exposure and ensure that there is no net loss, including to stratotype of Long Quarry Mb. Protect fossil-rich platforms at Hope's Nose and Long Quarry, only exceptionally allowing sampling, following full consultation with EN/TCCT. Monitor/police exposures of gold-bearing veins to prevent further loss. Ensure that the collection of in-situ samples elsewhere is only for research or education. Improve public access.	Monitor site and periodically clear hazardous rubbish. Collecting fossils in quarry is permissible for educational reasons, providing that rare species are deposited in an appropriate institution. Investigate provision of safe access to quarry including steps.
	Natural degradation; Waste disposal (by site users); Attempts to collect in-situ fossils and abrasion by site users walking across outcrops.		Educate site users and direct them to avoid walking over key areas of fossil-rich exposure to minimise abrasion including (also contamination by rubbish). Ensure that only small in-situ samples are only taken for research purposes and from areas agreed with EN/TCCT, to minimise damage.

Site name	Main threats	Conservation objectives	Management recommendations/ actions
<p>Hope's Nose to Wall's Hill SSSI / Black Head-Anstey's Cove CGS (proposed)/ Hope's Nose (south) CGS (proposed) continued</p>	<p>Civil engineering associated with maintenance of sewage/storm water outfall; Non-scientific collecting of fossils.</p>		<p>Ensure that samples are only collected in this area for research purposes to minimise loss of unusual shelly fauna (also seen in quarry).</p>
	<p>Natural degradation and vegetation growth; Coastal protection (unlikely); Maintenance of flower-rich grassland in quarry floor if machinery used; Attempts to collect in-situ fossils..</p>		<p>Educate site users and direct them to avoid walking over key areas of fossil-rich exposure to minimise abrasion including (also contamination by rubbish). Ensure that only small in-situ samples are taken for research purposes and from areas agreed with EN/TCCT, to minimise damage.</p>
	<p>Natural degradation and vegetation growth; Civil engineering including cliff/ quarry face stabilisation.</p>		<p>Ensure that any proposed cliff stabilisation works do not prejudice geological important exposures.</p>
	<p>Natural degradation and vegetation growth; Civil engineering works to stabilise rock faces; Attempts to collect in-situ corals, etc..</p>		<p>Ensure that no non-scientific collection from in-situ takes place.</p>
	<p>Coastal protection; Civil engineering including cliff stabilisation.</p>		<p>Ensure that coastal defence and other works do not lead to a loss of accessible exposure, especially at Anstey's Cove.</p>
	<p>None likely.</p>		<p>None necessary</p>
	<p>Coastal defence to maintain sewage/ storm water outfall; Waste disposal (contamination of deposits by effluent); Civil engineering associated with maintenance of outfall; Illegal collecting from unique deposits, including use of mechanical tools.</p>		<p>Monitor/police to ensure that no further illegal collecting occurs, especially after sewage outfall diverted (including through monitoring mineral dealing websites). Initiate scientific survey to locate and remove any surviving remnants of deposit.</p>
	<p>Natural degradation and vegetation growth; Non-scientific attempts to collect fossil shells form raised beach.</p>		<p>Ensure that the collection of in-situ samples is only permitted for scientific purposes to safeguard resource.</p>

Site name	Main threats	Conservation objectives	Management recommendations/ actions
Kent's Cavern SSSI	Degradation due to inappropriate environmental conditions; Leakage of effluent, etc. from houses above; Engineering, etc. works to maintain or improve public access; Inappropriate aspects of touristic cave use.	Maintain cave system in favourable condition by ensuring that touristic use is compatible with conservation. Ensure that environmental conditions within cave are stable and do not lead to damage to features including bone deposits.	Use Cave Management Plan to direct future patterns of use and maintenance.
	Natural degradation due to inappropriate environmental conditions; Leakage of effluent, etc. from houses above; Engineering, etc. works to maintain or improve public access; Inappropriate aspects of touristic cave use.	Maintain restricted access to non-public areas of the cave to minimise risk of disturbance or damage. Encourage scientific and archaeological studies to improve understanding of the system. Implement an agreed Cave Conservation Plan.	Use Cave Management Plan to direct future patterns of use and maintenance.
	Natural degradation and vegetation growth; Civil engineering to stabilise faces.		Maintain exposures by minimising impacts of any external works.
Lummaton Quarry SSSI	Natural degradation and vegetation growth; Fly-tipping and dumping from industrial units; Civil engineering to stabilise faces and industrial development; 8. Non-scientific or illegal fossil collecting.	Maintain exposures and ensure that there is no net loss, including due to both vegetation growth and development. Maintain gated, secure access to upper levels of quarry. Manage surviving exposure of Lummaton Shell Bed by only permitting scientific collecting.	Maintain access to exposures in quarry faces by controlling vegetation growth and maintaining fenced access at base. Ensure that users of industrial units do not dump materials within the geological site boundary fence – ensure that TC enforces compliance.
	Vegetation growth; Civil engineering to stabilise faces or for safety reasons; Agricultural and other land management practices; Non scientific or illegal fossil collecting.		Maintain gated, secure access to exposures. Monitor site to ensure that no unconsented collecting takes place, involve operators of industrial units as observers if possible. Continue to clear vegetation to maintain exposures.

Site name	Main threats	Conservation objectives	Management recommendations/ actions
Lummaton Quarry SSS continued	Natural degradation and vegetation growth; Fly-tipping; Engineering, works or development; Non scientific fossil collecting.		Control vegetation as far as is possible to maintain access to key exposures.
Meadfoot sea road SSSI	Natural degradation and vegetation growth, especially trees and scrub; Civil engineering to stabilise exposures and slopes and development; Maintenance of woodland without integration with geoconservation objectives; Collecting of fossils from outcrops reported in litt..	Maintain existing exposures and ensure that there is no further loss, for instance due to coastal defence or other civil engineering projects.	Initiate survey to locate fossiliferous exposures of Meadfoot Group reported in litt. and clear of vegetation/ improve access.
	Coastal protection; Civil engineering works.		Ensure that civil engineering and other works do not effect exposures.
	Natural degradation and vegetation growth; Coastal protection; Civil engineering to stabilise cliffs and protect coastal road; Recreational attempts to collect fossils.		Ensure that works to protect coastal road do not lead to loss of key fossiliferous exposures.
New Cut, Lincombe Drive SSSI	Natural degradation and vegetation growth; Engineering or building works industrial; Maintenance or landscaping of private gardens; Non-scientific or illegal fossil collecting.	Improve and maintain exposure. Ensure that any sampling is only for scientific purposes as the exposure is very small.	Clear vegetation from exposure and liaise with site owners to ensure that they understand the significance of the site.

Site name	Main threats	Conservation objectives	Management recommendations/ actions
Petit Tor-Maiden-combe CGS (proposed)	Natural degradation and vegetation growth; Coastal protection; Civil engineering to stabilise cliff or rock faces; Non-scientific collection of in-situ fossils.	Maintain exposure and ensure that no net loss occurs, especially to stratotype of Petit Tot Mb. and Watcombe Fm. Ensure that collection of samples from in-situ is only for scientific and educational purposes.	Ensure that the collection of samples from in-situ is only for scientific and educational purposes.
	Natural degradation and vegetation growth; Coastal protection; Fly-tipping; Civil engineering to stabilise slopes; Maintenance of combe without integration of geoconservation objectives; 8.Non-scientific collecting of fossils, especially from in-situ.		Initiate survey of Combe to locate key geological exposures and clear of vegetation and improve access. Ensure that the collection of samples from in-situ is only for scientific and educational purposes.
	Coastal protection; Civil engineering to stabilise cliffs.		Monitor proposals for coastal defence works, in particular around beach access points, and ensure that no key exposures are lost.
Roundham Head SSSI	Natural degradation and vegetation growth; Coastal protection; Civil engineering to stabilise cliff, potentially linked to cliff-top developments.	Maintain current level of cliff and foreshore exposure and ensure that there is no net loss, in particular of key features of the stratotype of the Torbay Breccia Fm.	Ensure that cliff stabilisation and foreshore works do not prejudice key exposures, including through liaison with TC and owners of cliff-top properties.
Saltern Cove SSSI / Crystal Cove CGS (proposed)	Coastal protection; Civil engineering to stabilise cliffs, and/or linked to cliff top development.	Maintain exposures and ensure that there is no net loss of geological features, including stratotype of Saltern Cove Fm. Ensure that collection of samples from in-situ is only permitted for scientific and educational reasons.	Ensure that coastal defence and other works do not threaten exposures.
	Coastal protection; Civil engineering to stabilise cliff.		Ensure that coastal defence and other works do not threaten exposures.
	Coastal protection; Civil engineering to stabilise cliff and/or slopes; Non-scientific collecting of in-situ fossils.		Ensure that coastal defence and other works do not threaten exposures. Collection of specimens from in-situ should only be for scientific reasons.

Site name	Main threats	Conservation objectives	Management recommendations/ actions
Saltern Cove SSSI / Crystal Cove CGS (proposed) <i>continued</i>	Coastal protection; Civil engineering to stabilise cliff, Non-scientific collecting of fossils.		Ensure that coastal defence and other works do not threaten exposures. Collection of specimens from in-situ should only be for scientific reasons.
	Coastal protection; Civil engineering for instance to stabilise cliffs;		Ensure that coastal defence and other works do not threaten exposures.
	Coastal protection; Civil engineering to stabilise cliffs; Collection of in-situ Beaconites or non-scientific removal of loose specimens.		Ensure that coastal defence and other works do not threaten exposures. Collection of specimens from in-situ should only be for scientific reasons, although only in exceptional cases, in consultation with EN/TCCT should any Beaconites be removed.
	Coastal protection; Civil engineering, including to stabilise cliffs.		Ensure that coastal defence and other works do not threaten exposures.
	Coastal protection; Civil engineering including to stabilise cliffs Non-scientific collection of in-situ samples.		Ensure that coastal defence and other works do not threaten exposures. Collection of specimens from in-situ should only be for scientific reasons.
Quarry Woods Quarry CGS	Natural degradation and vegetation growth; Waste disposal and fly-tipping; Engineering works or development; Agricultural uses including storage or dumping of materials.	Maintain exposure including all described features.	Clear vegetation and maintain exposure. Investigate potential for educational use.

For more information please contact

Torbay Coast and Countryside Trust
Cockington Court
Cockington
Torquay TQ2 6XA

Tel: 01803 606035

Email: geopark@countryside-trust.org.uk
www.englishrivierageopark.org.uk



This document can be made available in other languages, on tape, in Braille, large print and in other formats. For further information please contact 01803 208832.