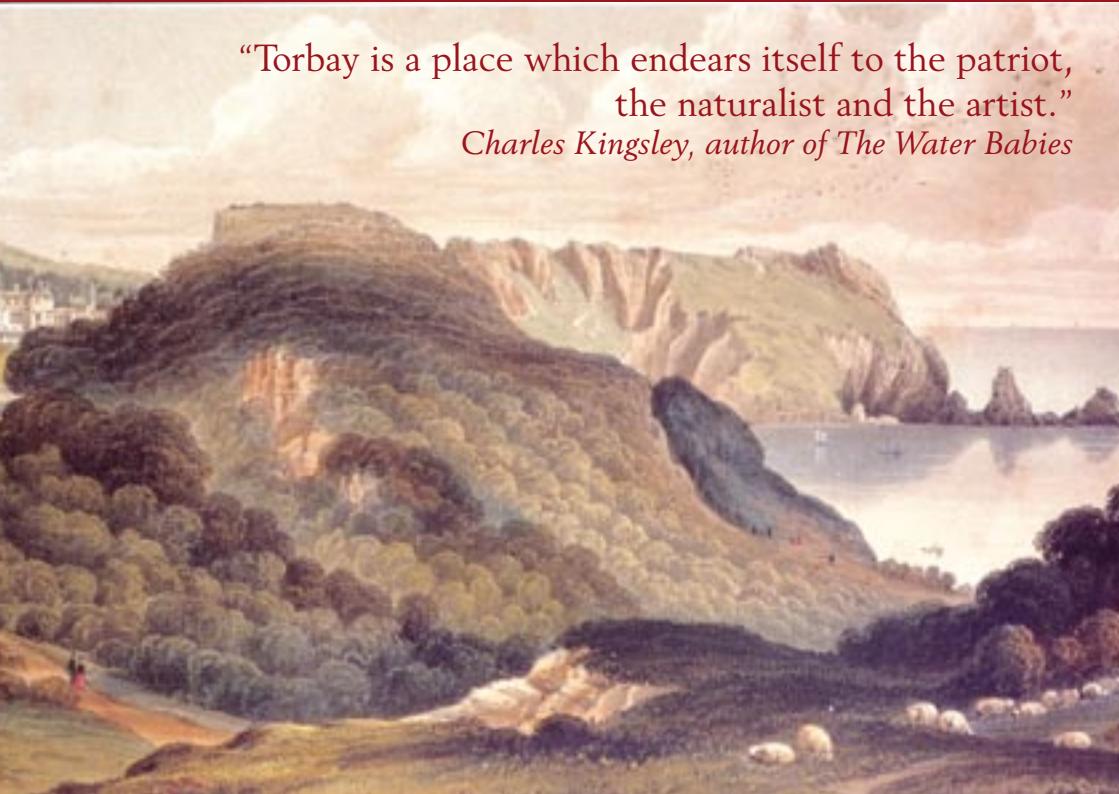


# THE ENGLISH RIVIERA GLOBAL GEOPARK

“Torbay is a place which endears itself to the patriot,  
the naturalist and the artist.”  
*Charles Kingsley, author of The Water Babies*





St Mary's Bay, photo courtesy of English Riviera Tourism Company

## What is a Geopark?

A Geopark is an area of outstanding geological, ecological and cultural interest. To qualify for European Geopark status, it must comprise geological sites of international significance in terms of their scientific quality, rarity, beauty or educational value. In September 2007 The English Riviera became the 32nd member of the European Geoparks Network (itself a part of the Global Network of National Geoparks). The English Riviera Geopark is the only urban Geopark, with a population of 134,000 in an area of 62km<sup>2</sup> and 42km<sup>2</sup> of sea.

The English Riviera has a rich and well-exposed geological heritage, from Devonian reefs to Pleistocene bone-caves.

This geology has strong links to the history of science and culture, not least as Torbay includes sites crucial to the initial characterisation of the Devonian Period. The area includes one of the highest concentrations of protected geological sites in the UK with 11 nationally protected sites and 15 regionally important sites.

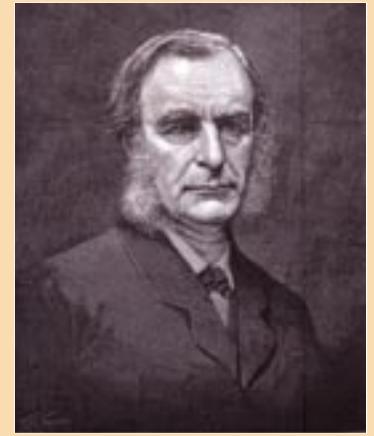
### Did you know?

The geological timeframe universally accepted as the Devonian Period was so named after Victorian members of the Palaeontographical Society found fauna in a range of sites across Devon, including Lummaton Quarry in Torquay.

# THE ENGLISH RIVIERA GLOBAL GEOPARK

### Did you know?

In 1854, one of the Victorian era's natural history luminaries, author Charles Kingsley, marveled at more than one aspect of natural history in Torquay. He explored the marine life along the coastline, resulting in the publication of his research, *Wonders of the Shore* and, residing near Torre Abbey (the resort's oldest building) developed an idea for his classic historical novel *Westward Ho!* In a letter to a friend, Kingsley acknowledged the source of his inspiration: 'Torbay is a place which endears itself to the patriot, the naturalist and the artist. We cannot gaze on its blue ring of water and the great limestone bluffs which bound it to the north and south, without a glow passing through our hearts as we remember the terrible and glorious pageant ... when the Spanish Armada ventured slowly past Berry Head with Elizabeth's gallant pack of Devon captains ... following fast in its wake ...'



Charles Kingsley

# The Geopark today

Situated within the rolling hills of South Devon, the English Riviera's geology has created a beautiful coastline which fundamentally links the rich diversity of landscape with wildlife, people and culture. Upon Torbay's award of Geopark status, the area's importance to the natural sciences was acknowledged by Iain Stewart (Patron of the English

## Did you know?

Honoured for his geological work and cavern exploration in Torbay, William Pengelly (1812-94), was showing a party of people his amazing natural history discoveries at Kents Cavern when a lady enquired: 'Do you really think, Mr Pengelly, that this is more than 4,000 years old?'

'Yes, madam, I think you may add another nought to that number and still another; in fact you can make it as noughty as you like' was the humorous reply.



William Pengelly

Riviera Global Geopark, Professor of Geoscience Communication at Plymouth University, presenter of BBC TV's How Earth Made Us and Earth: The Power of the planet):

"At first glance, the crowded shores of the English Riviera would seem an unlikely scene to create a Geopark. But amid the scattered urban mosaic of Brixham, Paignton and Torquay - tucked away in the valleys, on hilltops, along blood-red bluffs or steel-grey sea stacks - is some of the best geology in southern Britain. But there is more to this Geopark than simply a fascinating window into our planet's distant heritage. The resonance of these truly ancient roots endure in the modern make-up of this intricate coast - its architecture and buildings, its culture and artistic roots, its creation of sense of region and place. Simply, the Geopark is where people, rocks and landscapes meet."

## 'Gateway' sites

'Gateway' sites are those with a very visible Geopark focus and where identification and guides are available for visitors.

### Berry Head National Nature Reserve

Nature meets geology with spectacular results in a location of diverse flora and fauna, dramatic Napoleonic war fortifications and unrivalled views across Torbay.

### The Seashore Centre

On the shores at Goodrington is a community resource equipped with seawater tanks displaying marine wildlife, interactive displays and a video microscope where you can explore our tropical seas of the past.

### Kents Cavern



**Kents Cavern**  
The Ice Age home of Britain's earliest humans is a spectacular cave system which is now a protected national monument, international show cave and the only underground gateway to the Geopark.

**Key sites** 'Key' sites are those that are closely connected to the Geopark.

### Torre Abbey

Our most important and ancient monument, now fully restored, presents centuries of architectural and cultural history.

You can now also explore the most ancient parts of the building where some amazing finds have been unearthed.

*Torre Abbey*

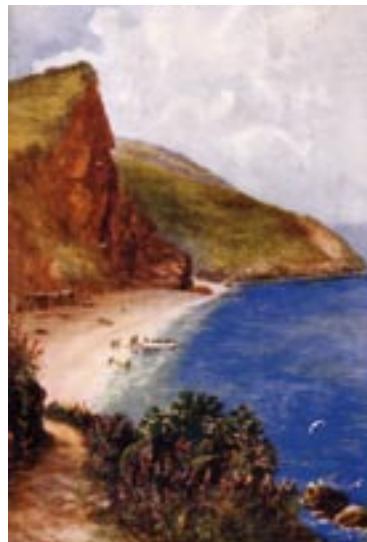


## Torquay Museum

Ranked among the finest in the South West, Torquay Museum covers a wealth of local natural and cultural history, presented in engaging and interactive displays all the family can enjoy.

## Geopark Cruises

Greenway  
Ferries enable you to view the English Riviera's stunning geology from the sea whilst providing full and interesting commentaries that make for a great introduction to the impressive natural beauty of the area.



*Oddicombe and Petitor*

## Occombe Farm

Connecting food, farming and the landscape, Occombe is a working organic farm that welcomes visitors to its nature trails, education centre, farm shop and café.

## Cockington Court and Country Park

Set in 450 acres of beautiful parkland, Cockington brings local traditions and creativity together with its thriving craft centre, organic garden, stables and play area.

*Cockington Court*

## The European and Global Geopark Network

Founded in 2000 the European Geoparks Network (EGN) was initiated by just four areas: Reserve Géologique de Haute Provence (France), the Petrified Forest of Lesvos (Greece), Vulkan eifel (Germany) and Maestrazgo Cultural Park (Spain). By 2004 the success of the EGN was recognised and this led to the global development of the network. As of October 2010 the Global Geopark Network comprises a total of 77 members across 25 countries. Today, working together as a global partnership with common goals to enhance public awareness, understanding and appreciate of

the natural world and the culture of the area whilst promoting sustainable forms of economic development, the network includes some of the most stunning places of natural beauty in the world, in countries as diverse as Australia, Brazil, China, Iran and Malaysia.



## The English Riviera's Geological Timeline

### 400 million years ago

During the geological timeframe universally accepted as the Devonian Period, the English Riviera was located south of the equator. Warm seas during the Devonian era produced marine creatures and corals that accumulated layer upon layer to form outstanding examples of limestone found along the coast at Berry Head, Hope's Nose and Walls Hill.

### 300 million years ago

These limestone deposits were pushed northwards, being folded and broken under pressure as a giant mountain chain developed. This event caused Babbacombe Cliffs to turn 'upside down', so that the dark slates at the bottom of the cliffs are actually younger than the pale limestones of Babbacombe Downs at the top.

### 280 million years ago

Torbay only shifted north of the equator during the Permian Period. The area was then in the middle of an arid desert that produced the area's characteristic red sandstone cliffs, prominent today at Saltern Cove and Goodrington.

### 1.8 million years ago

The dinosaurs came and went and sea levels dropped during the Quaternary Period, when the English Riviera was close to its present position. Freshwater streams carved out a network of cave systems in the limestone at Brixham Cavern and Kent's Cavern. These later became home to our earliest ancestors.

## The 32 Geosites

Babbacombe Cliffs

Barcombe Mews Quarry, Shorton

Barton Quarry

Berry Head to Sharkham point

Black Head and Anstey's Cove

Breakwater Quarry, Brixham

Brokenbury Quarry, Churston

Ferrers

Brixham Cavern

Chapel Hill, Torre

Churston Cove / Churston Point

Crystal Cove

Daddyhole

Dyers Quarry

Goodrington Quarry and Road

Cutting

Hollicombe Head to Corbys Head

Hopes Nose: Marine Devonian

Hopes Nose: Mineralogy of SW England

Hopes Nose and Thatcher Rock: Quaternary of SW England

Hopes Nose South

Kents Cavern

Long Quarry

Lummaton Quarry

Meadfoot Sea Rd

New Cut

Oddicombe

Petitor, Maidencombe

Quarry Woods Quarry, Cockington

Roundham Head

Saltern Cove: Marine Devonian

Saltern Cove: Permian Triassic

Sharkham Iron Mine

Shoalstone

## Murder in the Geopark

Torbay's major tourist attractions - the world's most popular author Agatha Christie and The English Riviera Geopark - are inextricably linked. Torquay Museum has a permanent exhibition celebrating the life of the 'Queen of Crime' while the gardens of Torre Abbey feature a Agatha Christie Potent Plant display that offers an expert insight into the poisons used in her murder mysteries. Agatha's father Frederick Miller was a fellow of the Torquay Natural History Society (now Torquay Museum Society) that funded a fifteen year excavation of Kents Cavern completed in 1890, the year that his famous daughter was born. Now acknowledged as the prehistoric home of Britain's first humans, Kents Cavern appeared as Hemsley Cavern in the Christie thriller *The Man in the Brown Suit*. The ingenious plot of one of Agatha Christie's best known novels has recently been used to try and unravel a murder mystery over 250 million years old. During the geological era known as the Permian Period (when Torbay's characteristic red sandstone cliffs were formed), 90% of all life on Earth inexplicably became extinct. Inspired by the works of 'The Duchess of Death', American paleobiologist Douglas Erwin, the world's leading expert on the global catastrophe, has developed theories in books described as 'whodunits for the ages'. They are written from the perspective of a detective piecing together clues to determine the many possible causes of death that include: asteroid impact, huge volcanic eruptions or the oceans losing their oxygen content. Unfolding as a sort of geological mystery story, Erwin describes a final possibility as the Murder on the Orient Express scenario which, like fictional detective Hercule Poirot of the novel, proposes that the crime was committed by all the suspects!

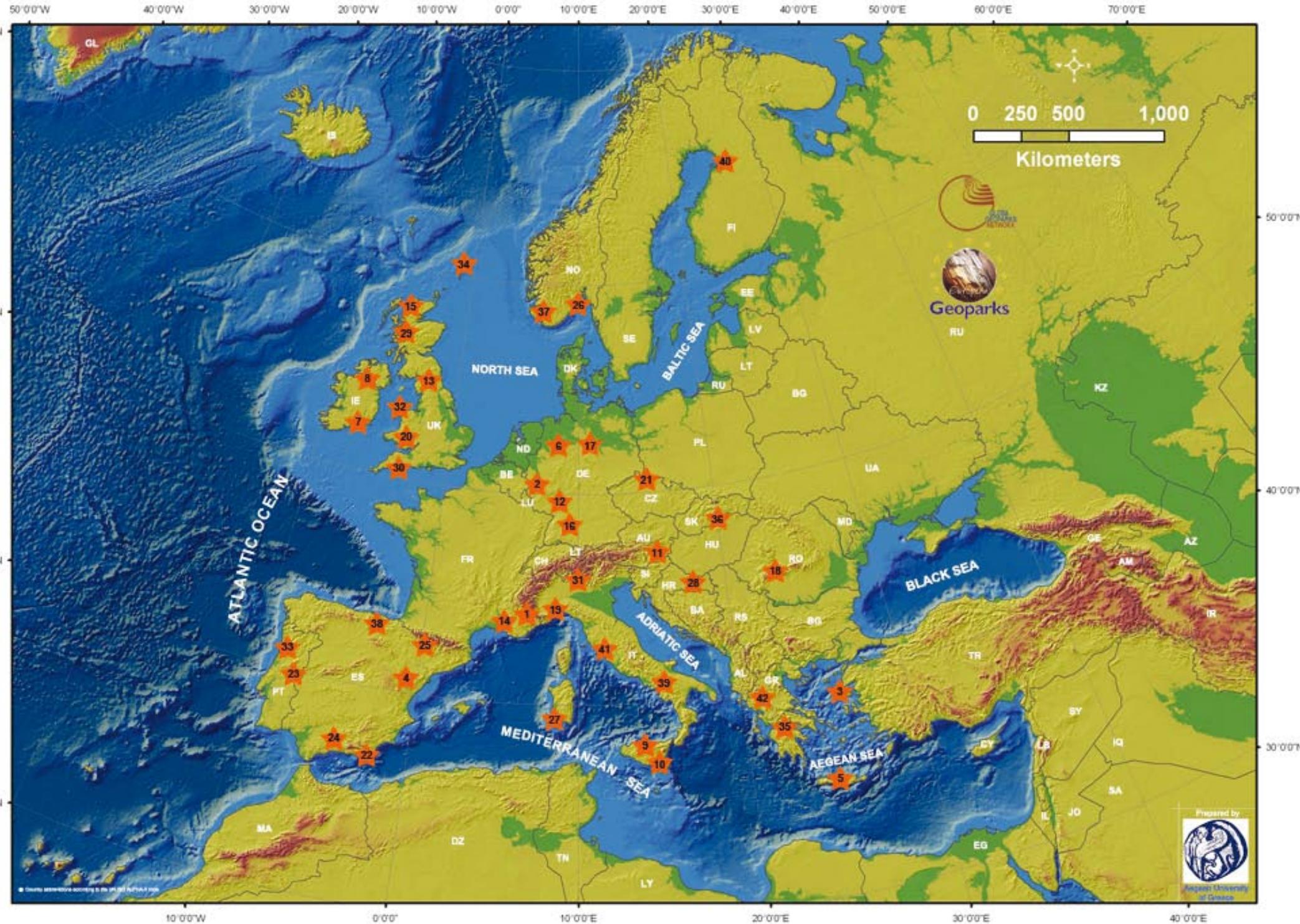


Agatha  
Christie's  
*'Poirot'*

## EUROPEAN GEOPARKS NETWORK

### MEMBER LIST - October 2010

1. Réserve Géologique de Haute Provence – FRANCE
2. Vulkanefel European Geopark – GERMANY
3. Petrified Forest of Lesvos – GREECE
4. Maestrazgo Cultural Park – Aragon, SPAIN
5. Psiloritis Nature Park – GREECE
6. Terra.Vita Nature Park – GERMANY
7. Copper Coast Geopark – IRELAND
8. Marble Arch Caves European Geopark – NORTHERN IRELAND, UK
9. Madonie Geopark – ITALY
10. Rocca di Cerere – ITALY
11. Nature Park Steirische Eisenwurzen – AUSTRIA
12. Nature Park Bergstrasse Odenwald – GERMANY
13. North Pennines AONB – ENGLAND, UK
14. Park Naturel Régional du Luberon – FRANCE
15. North West Highlands – SCOTLAND, UK
16. Geopark Swabian Albs – GERMANY
17. Geopark Harz Braunschweiger Land Ostfalen Geopark – GERMANY
18. Hateg Country Dinosaurs Geopark – ROMANIA
19. Beigua Geopark – ITALY
20. Fforest Fawr Geopark – WALES, UK
21. Bohemian Paradise Geopark – CZECH REPUBLIC
22. Cabo de Gata – Nijar Nature Park – Andalucia, SPAIN
23. Naturtejo Geopark – PORTUGAL
24. Sierras Subbeticas Nature Park – Andalucia, SPAIN
25. Sobrarbe Geopark – Aragon, SPAIN
26. Gea Norvegica – NORWAY
27. Geological, Mining Park of Sardinia – ITALY
28. Papuk Geopark – CROATIA
29. Lochaber Geopark – SCOTLAND, UK
30. English Riviera Geopark – ENGLAND, UK
31. Adamello – Brenta Nature Park – ITALY
32. Geo Mon – WALES, UK
33. Arouca Geopark – PORTUGAL
34. Shetlands – SCOTLAND, UK
35. Chelmos Vouraikos – GREECE
36. Novohrad - Nograd Geopark – HUNGARY and SLOVAKIA
37. Magma Geopark – NORWAY
38. Basque Coast Geopark, Pais Vasco – SPAIN
39. Parco Nazionale del Cilento e Vallo di Diano, Campania – ITALY
40. Rokua Geopark – FINLAND
41. Tuscan Mining Park, Toscana – ITALY
42. Vikos – Aoos Geopark – GREECE



**Further information** The English Riviera Global Geopark website contains links to the ‘gateway’ sites, key sites and details and map references for the 32 GeoSites, covering the story of three geological periods, plus a range of history and heritage topics and news of forthcoming events. [www.englishrivierageopark.org.uk](http://www.englishrivierageopark.org.uk) To discover more about Geoparks visit [www.globalgeopark.org](http://www.globalgeopark.org) or [www.europeangeoparks.org](http://www.europeangeoparks.org)

Torbay Coast & Countryside Trust manage 1750 acres of country parks, nature reserves, woodland, farmland and coastline in Torbay, including four geopark gateway sites at Berry Head National Nature Reserve, Kent's Cavern and the Seashore Centre, Goodrington. [www.countryside-trust.org.uk](http://www.countryside-trust.org.uk)

**The Seashore Centre, TQ4 6LS**

Contact: 01803 528841

**Berry Head National Nature Reserve,  
TQ5 9AP** Contact: 01803 882619

[www.berryhead.org.uk](http://www.berryhead.org.uk)

**Cockington Court, TQ2 6XA**

Contact: 01803 607230

**Occombe Farm, TQ3 1RN**

Contact: 01803 520022

[www.occombe.org.uk](http://www.occombe.org.uk)

**Kents Cavern, TQ1 2JF**

Contact: 01803 215136

[www.kents-cavern.co.uk](http://www.kents-cavern.co.uk)

**Torre Abbey, TQ2 5JE**

Contact 01803 293593

[www.torre-abbey.org.uk](http://www.torre-abbey.org.uk)

**Torquay Museum, TQ1 1HG**

Contact: 01803 293975

[www.torquaymuseum.org](http://www.torquaymuseum.org)

**Geopark Cruises**

**with Greenway Ferries, TQ1 2BG**

Contact: 0845 4890418

[www.greenwayferry.co.uk](http://www.greenwayferry.co.uk)

**Brixham Heritage Museum, TQ5 8LZ**

Contact: 01803 856267

[www.brixhamheritage.org.uk](http://www.brixhamheritage.org.uk)

**Further reference material available at Torquay Local Studies Library:**

Border, Mel, Proctor, Chris & Risdon, John

*The Official Guide to the English Riviera Global Geopark*, 2010

Border, Mel & Lockhurst, Ruth. *Walks along the South West Coast Path Exmouth to Kingswear – Featuring the English Riviera Global Geopark*, 2011

Ellis, Arthur. *An Historical Survey of Torquay*, 1930

Jukes-Browne, A.J. *The Hills and Valleys of Torquay*, 1907

Perkins, John W. *Geology Explained in South and East Devon*, 1971

Proctor, C.J. *Caves of North Torbay*, 1987

Salter, Mary. *Fossils of Torquay*, 1903

Scrivener, Myfanwy. *An Introduction to the Geology of the Torquay District*, 1987

Ussher, W.A.E. *The Geology of the Country Around Torquay*, 1933

Whidborne, G.F. *Monograph of the Devonian Fauna*, Vol 2, 1892

Check out the library web pages at  
[www.torbay.gov.uk/libraries](http://www.torbay.gov.uk/libraries)  
or go straight to the library catalogue at:  
<https://libraries.torbay.gov.uk/>

Text written and compiled by Mike Holgate

**This leaflet can be made available in other formats. For information telephone 01803 208310.**