

PROTECTING OUR GEODIVERSITY

These pages have been written from GeoSuffolk's eight years of experience. Site visits, recording and management take place courtesy of and in partnership with landowners and managers. Thank you to all those organisations and public and private landowners who have allowed access to their land and geosites.

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Rockhall Wood SSSI, Sutton

SITE DESIGNATIONS

There are numerous Geological and Geomorphological sites in Suffolk. Some have special site designations (e.g. SSSI, RIGS, LGS, CGS) for specific purposes. Many others are also of great interest and will have or perhaps await designations.

SSSIs

Sites of Special Scientific Interest SSSIs consist of most of the country's very best geological and wildlife sites. They are protected by law and administered by Natural England. Suffolk has 40+ geological SSSIs – to find out more about these go to the NE web site, www.sssi.naturalengland.org.uk



Orfordness, one of Suffolk's best known SSSIs is managed by the National Trust. It is one of three major shingle landforms in the British Isles and is the only one which combines a shingle spit and a cusped foreland.

RIGS

Regionally Important Geodiversity Sites are selected according to four basic criteria – education, scientific interest, aesthetic value and historical context. Additionally in Suffolk, GeoSuffolk requires permission from the owners before designation. At present Suffolk has 8 RIGS, administered by GeoSuffolk and registered on the Suffolk Biological Records Centre database. For more information on RIGS visit the GeoConservationUK web site, www.geoconservationuk.org.uk

Dunwich Cliffs RIGS shows fine exposures of Norwich Crag gravels in a 500m section of natural cliff with a swash-aligned beach at its foot. Access is excellent, with car park and toilets, and there are clear links to the story of Medieval Dunwich, lost to coastal erosion.



GEOSUFFOLK SITE AUDIT

To date GeoSuffolk has 140 local sites in its audit of geodiversity in Suffolk. These have all been visited and sites files completed. These files are kept in Ipswich Museum, along with files on the Suffolk geological SSSIs. GeoSuffolk has an ongoing policy to revisit and review sites every few years.



Part of the site record for the **Great Pit at Newbourne** which has been given CGS status by GeoSuffolk because it is one of the very few fossiliferous Crag pits in Suffolk with public access. It is managed by the Suffolk Wildlife Trust and benefits from proximity to Newbourne Springs.

GEOSUFFOLK GEOSITE RECORDING SHEET	
SITE	
Locality name	Newbourne Great Pit
Parish	Newbourne
Local Authority	Suffolk Coastal
NGR	TM 275433
ACCESS	
Contact (Managed by)	Suffolk Wildlife Trust
Owner	Anglian Water
Access details	Entrance on road opposite Newbourne Springs SWT reserve car park
Access notes	Public access.
SITE STATUS	
Site use history	Part of a much larger pit in existence since at least 1830s
Site description	20m+ long 3m high exposure of Red Crag
Condition	Fair condition
Conservation	Information would be useful because of public access. In the SCH AONB
Site designation	CGS
GEO FEATURES	
Summary	Red Crag exposure close to area of springs
Stratigraphy	Red Crag Formation
Palaeontology	Drifted shells, single valves of bivalves, dominated by <i>Spisula</i> . Leopard tooth found c.1839
Structures	Small-scale cross bedded units with varying current directions. Possible large unit at base partially obscured by talus shows SW orientation. Fissures infilled with calcite and shelly material (? from upper horizon). Fault showing 10cm downthrow to east.
Geomorphology	Proximity to Newbourne Springs give added value to the crag exposure which illustrates the material the water is issuing from.
OTHER FEATURES	
Educational	Good for educational use – easy access and parking.
Wildlife	Part of SWT Nature Reserve.

County Geosites (CGS) are GeoSuffolk designations broadly in line with the RIGS criteria. GeoSuffolk holds site designation meetings periodically when sites are assessed for CGS status using their *Site Selection Policy*. At present there are 27 GCS, all in Suffolk Coastal District. 13 of these have been designated as **Public CGS** and details have been given to the Suffolk Biological Records Centre.

Local Geodiversity Sites are those used by Suffolk County Council for inclusion in the Government baseline data for the Single Data List 160. At present the 8 RIGS and 13 Public GCS are Suffolk Local Geodiversity Sites on the Single Data List 160 database.

SITE MANAGEMENT

Geosites identified for their **geomorphology and active physical processes** usually demand a 'no intervention' approach as management. These include the landforms of the Suffolk coast – cliffs, beaches and marshes, – and river landforms, notably terrace surfaces and the 'gulls' of High Suffolk.

An example of this is **Dunwich Heath** owned by the National Trust. The cliffs here have been designated as RIGS for their excellent sections of Norwich Crag gravel channels. This attractive natural landscape is protected by the NT's *Coastal Policy*, which states (the NT) "accepts that the coast is dynamic and changing and will work with the natural processes of coastal erosion and accretion wherever possible".



Many of Suffolk's exposures of Coralline, Red and Norwich Crag and the Kesgrave Gravels occur in shallow **quarries and pits**. Excavations in unconsolidated sands and gravels degrade quickly and require management if the geological interest is to be maintained.

Rockhall Wood SSSI, Sutton, has several such exposures, representing a Coralline Crag 'island' in the Red Crag sea. It was re-excavated as part of the Natural England Facelift Project in 2005, and due to a positive and enthusiastic landowner and regular site maintenance the faces continue to be clear and accessible five years on.



Lessons from Sutton:

- Keep exposures free of plants, especially tree seedlings, so that they can be re-excavated by hand. (Recommended to be done every two weeks in summer).
- Do not be too eager to 'freshen up' the exposures – wait until a field trip/research project is imminent.
- Maintain good access – e.g. cut paths through nettles.
- Keep vertical exposures to a few metres for safety and fence off drops if necessary.
- Keep spoil heaps from the original excavation clear of plants. These form good resource banks for collecting as rainwash continues to expose new specimens.

PROTECTION THROUGH POLICY

Local Authorities

Planning Policy Statement 9 (PPS9) advises on protection of geodiversity through the planning system and the seven District Councils in Suffolk have been advised by GeoSuffolk to include geodiversity in their Local Development Frameworks.

Some favourable policy statements are emerging:

The Mid-Suffolk DC Core Strategy acknowledges the close links between geodiversity and the built environment with an examination of the relationship between geology and settlement site. For example, *'Stowmarket and Needham Market are surrounded by the boulder clays of 'High Suffolk' and the towns themselves are built on alluvial deposits over the underlying strata of chalk and Pleistocene crags exposed by the river Gipping's action since the ice ages.'*



Chalky landscape in the Gipping valley

The economic relevance of geology in the form of building materials – bricks in this case study – is revealed, e.g. *'The presence of abundant suitable clays and general absence of local stone meant that very often bricks were fired on site. Common soft reds are made from a sandy iron-rich clay, and whites from a less common chalky clay best known from Woolpit.'*

Ipswich Borough Council implies the geodiversity/built environment relationship in the eighth of its twelve strategic objectives for its Local Development Framework *'to protect and enhance high quality accessible strategic open spaces rich in biodiversity and geodiversity for people to visit and use , and protect the historic buildings and character of Ipswich'*.

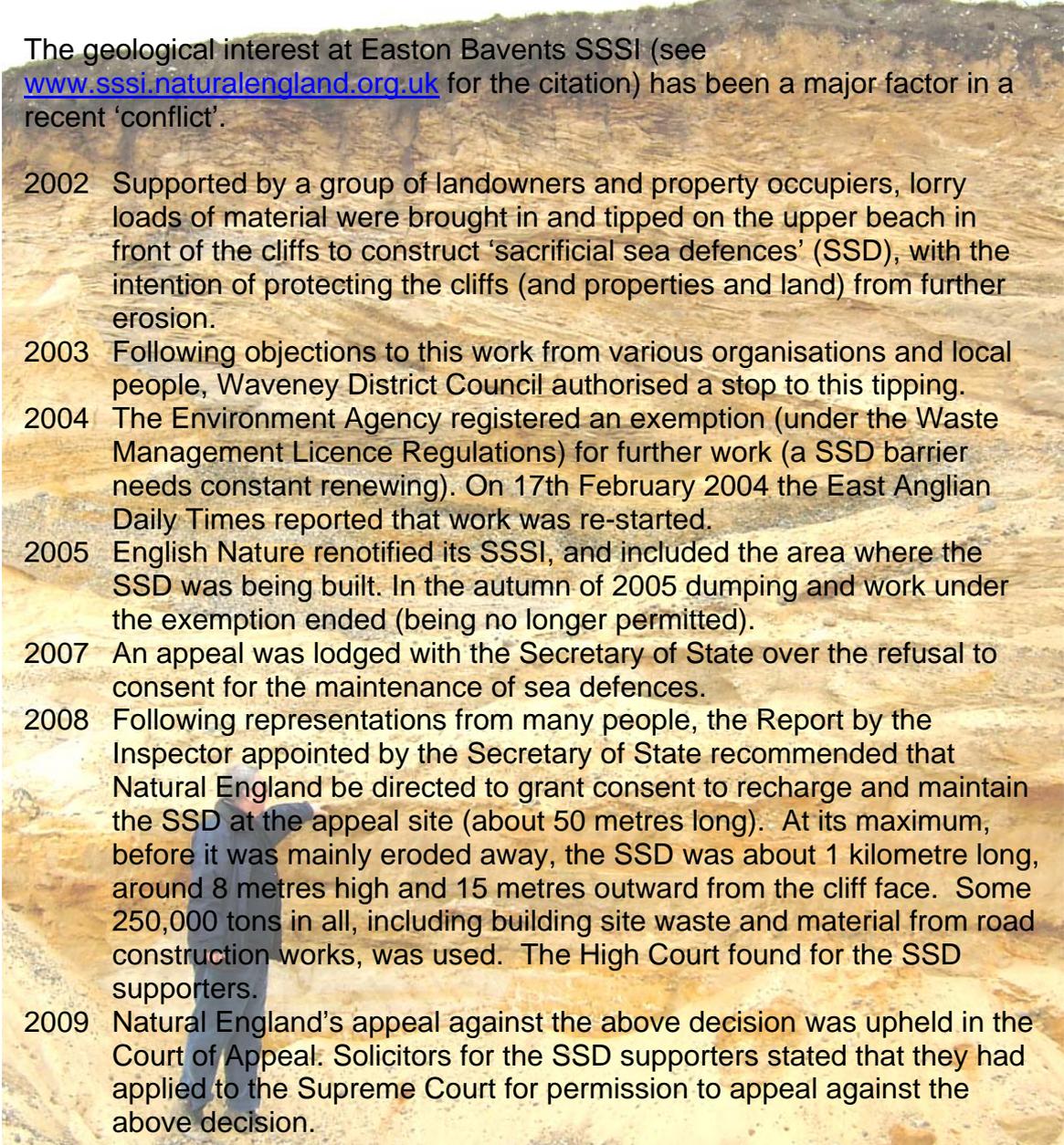
Shoreline Management Plan for Suffolk (January 2010)

In coastal environments, the best geological management is to maintain natural processes, thus enabling the natural development of landforms and enhancing the aesthetic value of the landscape. GeoSuffolk is a stakeholder in discussion on the SMP and concurs with its principle of *sustainable development*. Specifically two of the nine generic objectives directly acknowledge the importance of geodiversity – *'to avoid damage to and enhance the natural heritage'* and *'to maintain or improve landscape designations and features'*. A good example of this policy would be in the Areas 3-4 key values where *'specific value is seen in – geological interest and habitat in the cliffs (to the north of Southwold and south of Dunwich)'* and a policy of no active intervention is recommended for Dunwich Cliffs, with managed realignment at Easton Bavents.

CONFLICTS

Conflict at Easton Bavents

The geological interest at Easton Bavents SSSI (see www.sssi.naturalengland.org.uk for the citation) has been a major factor in a recent 'conflict'.

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- 2002 Supported by a group of landowners and property occupiers, lorry loads of material were brought in and tipped on the upper beach in front of the cliffs to construct 'sacrificial sea defences' (SSD), with the intention of protecting the cliffs (and properties and land) from further erosion.
 - 2003 Following objections to this work from various organisations and local people, Waveney District Council authorised a stop to this tipping.
 - 2004 The Environment Agency registered an exemption (under the Waste Management Licence Regulations) for further work (a SSD barrier needs constant renewing). On 17th February 2004 the East Anglian Daily Times reported that work was re-started.
 - 2005 English Nature renotified its SSSI, and included the area where the SSD was being built. In the autumn of 2005 dumping and work under the exemption ended (being no longer permitted).
 - 2007 An appeal was lodged with the Secretary of State over the refusal to consent for the maintenance of sea defences.
 - 2008 Following representations from many people, the Report by the Inspector appointed by the Secretary of State recommended that Natural England be directed to grant consent to recharge and maintain the SSD at the appeal site (about 50 metres long). At its maximum, before it was mainly eroded away, the SSD was about 1 kilometre long, around 8 metres high and 15 metres outward from the cliff face. Some 250,000 tons in all, including building site waste and material from road construction works, was used. The High Court found for the SSD supporters.
 - 2009 Natural England's appeal against the above decision was upheld in the Court of Appeal. Solicitors for the SSD supporters stated that they had applied to the Supreme Court for permission to appeal against the above decision.

Creation Conflict

The former Rocks and Fossils Gallery at Ipswich Museum and also one of GeoSuffolk's Mammoth Trail panels drew criticism from one person who regarded 'millions' of years are 'pure invention' and evolution as 'fantasy'. The *Our Views* section of the Geological Society of London website has a statement on the age of the Earth and the evolution of life – recommended. http://www.geolsoc.org.uk/gsl/op/prev/views/policy_statements/page3635.html