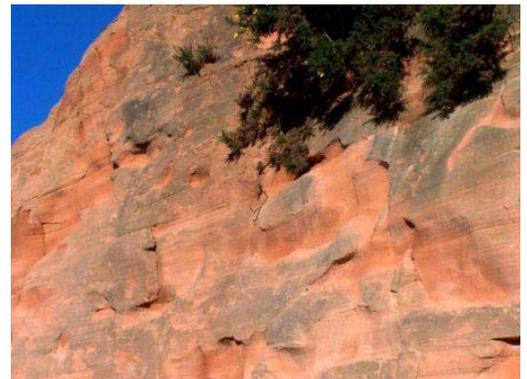


Pits, quarries and cuttings

(Revised in 2004; updated 2007)

1. A Definition

Devon's pits, quarries and cuttings, provide unique inland exposures of geology in areas where very few natural outcrops are present, for instance as natural crags or riverbanks exposures, and as, such offer extremely valuable opportunities for research and education. They provide a very important supplement to the natural exposures provided by coastal cliffs, but crucially also often show rock units or features not present on the coast.



The geology of Devon is one of the most interesting, varied and complex in Europe; indeed Devon is the only county in Britain to give its name to a geological system of world-wide recognition - the Devonian. From the early Devonian Period, around 400 million years ago, there is only one major geological time period not to have proven deposits in the County, the Neogene. The great variety of environments and processes which have taken place over this long interval have produced the wonderful diversity of rock types and fossiliferous deposits we see today.

The numerous working pits and quarries of Devon are used for the extraction of a variety of minerals and are commercial concerns of great importance to the local and, in some cases national economy. For example, Devon contains one of the largest ball clay extractive industries in Europe and important china clay workings, as well as more numerous operations extracting sand, sandstone, dolerite, limestone, gravel and mudrocks for brickmaking. The legacy of past quarrying activity provides us in addition with a great number of small disused quarries once used to provide local building material for estates and villages.

A great many pits and quarries in Devon are also important for the varied wildlife which they support, providing habitats for animals and plants which, in some cases, would not be present in any number in the County if it were not for the quarrying and extraction activities of man.

This Plan deals with disused and currently-used pits and quarries (and associated spoil tips), both dry and flooded, of hard and soft-rock geology, together with their communities of plants and animals. Exposures of geology associated with road and railway cuttings are also embraced by this plan.

2. Why an Action Plan?

Pits, quarries and cuttings deserve particular conservation attention because important sites and their associated wildlife are at risk from potentially harmful activities or management regimes. These include the disposal of waste (both large scale domestic and agricultural tipping), insensitive restoration/landscaping of worked out quarries, or simply neglect, leading to the invasion of scrub and ivy which obliterates exposures and dominates the rarer wildlife habitats.

Although mineral development can cause just concern for conservationists when semi-natural habitats are threatened, it also should be remembered that without the activity of commercial quarrying, past and present, there would be far fewer opportunities for geological study and education, and a less diverse biological resource in the County.

3. Characteristic wildlife

Uncommon species of bird, such as the peregrine, raven and ring ouzel use quarry habitats as nest sites.

Lichens and mosses find a home on exposed rock faces, while a variety of flowering plants may be encountered, reflecting local variations in the chemical and physical nature of the underlying rock. Many of the rare plants are adapted to dry, stony habitats and rapidly disappear once denser, taller vegetation develops.

The warm and sheltered microclimate and abundant vegetation of certain pits and quarries provide a suitable environment for a rich and diverse assemblage of insects, and these sites are often particularly good places for butterflies, in particular those relying on specific food plants adapted to stony, in particular limestone, habitats. Bare sand and clay supports a specialised assemblage of bees, wasps and beetles.

Reptiles such as common lizard and adder may frequently be found basking in the warmth provided by certain pits and quarries.

Greater and lesser horseshoe bats roost in cave-like quarries, where feeding opportunities are often good, due to the abundance of insects. Other bats may also use smaller fissures in rock faces to shelter.

Where sites are flooded, ponds occur, attracting dragonflies and providing a home for newts, frogs and other aquatic life. Reedbeds may also develop and ultimately wet woodland. Some quarries may also provide an important refuge for native white-clawed crayfish, isolated from potential competition with or contamination by diseases spread by introduced species.

4. Special species

The following species of conservation concern are associated with pits, quarries and cuttings in Devon. Species marked (p) are 'Species of Principal Importance in England' (NERC Act, S.41).

Mammals: greater horseshoe bat (p), lesser horseshoe bat (p), Daubenton's bat, barbastelle (p)

Birds: peregrine, kestrel, sand martin, ring ouzel (p), raven

Amphibians: great crested newt (p)

Invertebrates: scarce blue-tailed damselfly

Lichens: *Caloplaca cirrochroa*, *C. chalybaea*, *Collema polycarpon*, *Bryoria fuscescens*

Vascular plants: filmy ferns, toadflax-leaved St Johns-wort

Pits, quarries and cuttings provide habitats for some species which occur in few other sites in Devon or which have the majority of their County population in them. The flooded pits and associated wetlands of the Bovey Basin provide one of the handful of sites in Devon for the great crested newt, and this area together with the workings of Lee Moor is one of the few sites in the County that supports the scarce blue-tailed damselfly.

Approximately three quarters of the County's sand martins breed in pits and cuttings and a substantial proportion of Devon's peregrines and ring ouzels breed in pits and quarries. A large part of the County's limited resource of limestone grassland occurs on disused quarries, supporting rare plants such as the bee orchid, autumn lady's tresses, carline thistle and ivy broomrape, and a characteristic invertebrate fauna, especially spiders, some of which are only found in limestone quarries in Devon.

5. Special geodiversity features

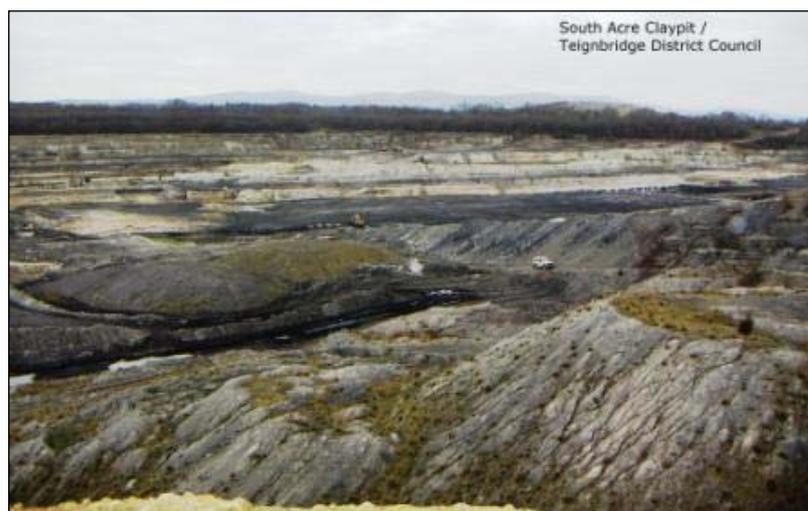
Key Geological Features, including potential Global Geosites, well represented in pits, quarries and cuttings in Devon include:

- Stratigraphical (Phanerozoic): Devon (marine) carbonates and clastics
- Permian-Triassic red-bed sequence
- Lower Jurassic, classic marine Hettangian-Toarcian
- Sub-Albian regional unconformity
- Stratigraphical (Quaternary): Late Pleistocene interglacial/glacial, cave/beach sediments (Saalian-Weichselian) [provisionally includes Pleistocene giant mammal/ hominid assemblages]

- Palaeontological: Palaeogene paratropical floras
- Igneous and metamorphic geology: Igneous rocks linked to the northern European Variscan fold-belt
- Igneous and metamorphic geology: Permian-Carboniferous igneous rocks of Britain
- Mineralogical, economic: Minerals and mineral assemblages in igneous intrusions
- Mineralogical, economic: Contact metamorphic assemblages
- Geomorphological features, erosional and depositional processes, and landscapes: Granite tors of Devon/Cornwall
- *Structural: Variscan nappes and allochthon/ parautochthon of Devon and Cornwall

Other important Earth heritage features (which are well represented in exposures of pits, quarries and cuttings in Devon:

- Devonian Igneous rocks
- Lower Carboniferous stratigraphy and palaeontology (marine)
- Upper Carboniferous stratigraphy and palaeontology (marine and non-marine)
- Permian and Triassic stratigraphy and palaeontology in central and east Devon (non marine)
- Albian (upper Lower Cretaceous) stratigraphy and palaeontology (marine)
- Cenomanian to Maastrichtian (Upper Cretaceous) stratigraphy and palaeontology (marine)
- Palaeogene ('Tertiary') sediments
- Palaeogene ('Tertiary') igneous rocks (the Lundy granite and associated dykes)
- Palaeogene-Neogene ('Tertiary') tropical weathering features
- Quaternary glacial and periglacial deposits and landforms



6. Pits and quarries distribution in Devon

The main concentrations of pits and quarries in the County are as follows:

- South Hams - slate and some sandstone quarries.
- Lee Moor - china clay pits.
- Bovey and Petrockstowe basins - ball clay pits.
- East Devon 'Pebble Bed' heaths - sand and gravel.
- Devonian limestone quarries of Plymouth, Torbay, South Hams, Newton Abbot and Chudleigh.
- Carboniferous limestone quarries NW of Dartmoor, and at Bampton and Westleigh.
- North and Mid Devon 'Culm' (Carboniferous) shale and sandstone quarries.
- North Devon Devonian slate, limestone and sandstone quarries.
- Quarries in Devonian and Carboniferous volcanic and intrusive rocks and associated cherts of West Devon.
- Mid Devon Permian lava quarries.
- Dartmoor granite quarries.
- Exeter brickpits.
- Chalk and Upper Greensand quarries of East Devon and Haldon.

7. Current extent

Information on the location and extent of all active and dormant quarries is included within the Devon Minerals Local Plan. There are no readily-available figures, however, for the area of land in Devon occupied by disused pits, quarries and all types of cutting. The lack of data is compounded by the fact that there are a very large number of small disused quarries scattered widely throughout the County; in some areas at least one quarry, often more, are recorded in virtually every square kilometre. Establishment of a database of such sites would have benefits not only for geological research and education, but also for minerals planning and sourcing of traditional materials for restoration and new building projects.

8. Current problems for pits, quarries and cuttings in Devon

- Waste disposal and landfill, including dumping of old agricultural machinery and other farm waste obscures geological exposures and destroys wildlife habitats. Proper targeting of sites for waste disposal and landfill is needed to avoid sites of wildlife and earth science value.
- Built development is a problem in a few localities as access to sites may be removed or made more difficult. With careful planning, problems of this nature can be ameliorated.
- Considerations of health and safety can lead to restrictions being placed on educational use and scientific study.
- Natural degradation - Vegetation growth can obscure geological exposures whilst loosening of rock faces creates safety/access problems. On exposures of soft-rock geology, such as ball clays, natural degradation by weathering and the establishment of vegetation occurs very soon after exposure.
- Restoration and landscaping of worked-out quarries by infilling has the obvious effect of obliterating geological exposures and destroying wildlife habitats within the quarry.
- Lack of awareness of geological issues and the scientific and heritage significance of quarry sites, sometimes leading to inappropriate management regimes (including uncontrolled vegetation growth, tipping, building against faces and either an absence of effective protection for sensitive geological features, including fossils, or alternatively rather restrictive regimes).
- Disturbance to sensitive species of breeding birds (such as the ring ouzel) by recreational use is a problem at some sites which are heavily used by the public.
- Damage to rare or delicate geological features or deposits by over-use or, in some cases, inappropriate specimen collecting. Such activities can be linked to trespass onto areas of private land with no public access and/ or the illegal removal of specimens from protected sites. The use of heavy equipment (sledgehammers, crowbars, machinery, explosives, etc) can be evident.
- Most geologists (*including* amateur), however, and geological societies and educational institutions now apply national guidelines for the responsible use of sites, including concerning sample collecting for educational and scientific purposes. Responsible site use such as this is

beneficial to conservation and both raises awareness of broader issues concerning the habitat, as well as improving the documentation and understanding of the features being studied.

- Many new geological discoveries have been made in this way, although there is currently no centralised repository for the site and specimen records generated. As a result, key documentary information of potentially great value to conservation bodies, site managers and science is not being recorded (including within working quarry complexes).
- In addition, key specimens representing facets of Devon's rich geological heritage are being 'lost' as deposition in a Devon-based museum is not always encouraged or promoted. Conservation in a museological context is a natural extension of site-based conservation.

9. Recent changes in number and extent

Modern active pits and quarries are mostly larger and rather fewer in number than was the case earlier this century (i.e. the 20th C). While today's large-scale operations expose geology on an often impressive scale, there may be little variety within a particular site because it is more economical to exploit an area with uniform geology than one with seams of valuable rocks interspersed with other unwanted types. Therefore, it is often the large number of small operations which expose a more varied geology, and these sites are most readily in-filled or invaded by scrub (see Current Problems, above).

Quantification of gains and losses in pits, quarries and cuttings is not easily achieved, but examples of losses in Devon include:

- Tolcis Quarry, filled in following its denotification as a SSSI;
- Heavitree Quarries, now lost to housing development;
- Lummaton Quarry, partly filled in with the construction of industrial estate;
- Mincinglake Quarry, filled with builders' waste and then developed with housing;
- Baker's Pit, Buckfastleigh and Ashburton Marble quarry filled with rubbish; Aller Vale sandpit, recent restoration has led to the loss of key exposures;
- Barton Quarry, Torquay, now with holiday village;
- Loss of limestone exposures in cuttings and quarries in Plymouth due to development, netting, etc;

Gains are few but include new exposures created through road cuttings, e.g. Holne Road cutting created by the Buckfastleigh relief road in 1997. In addition, English Nature's 'Facelift' programme has re-exposed overgrown and degraded sections of several quarry SSSIs in the county.

10. Current site protection

SSSIs notified for their geological interest include many pits, quarries and cuttings. Some SSSIs have mixed interests in that a site notified for its geological importance may also harbour interesting or scarce species and habitats, and sites notified for their wildlife interests may also contain notable geological exposures. The following SSSIs include pits, quarries and cuttings (Quarry here abbreviated to 'Q.'):

Napps Cave SSSI, Hele, Sampson's and Combe Martin Bays SSSI, Plaistow Quarry SSSI, Fremington Claypits SSSI, Park Gate Q. SSSI, Hannaborough Q. SSSI, Meldon Q. SSSI, Meldon Aplite Qs. SSSI, South Brentor Q. SSSI, Richmond Walk SSSI, Wallsend Industrial Estate SSSI, Faraday Road SSSI, Burrator Qs. SSSI, Two-Bridges Q. SSSI, Haytor Rocks and Qs. SSSI, Tower Wood Q. SSSI, Bullers Hill Q. SSSI, Webberton Cross Qs. SSSI, Ryecroft Q. SSSI, Laughter Q. SSSI, Haytor and Smallacombe Iron Mines SSSI, Potters Wood SSSI, Buckfastleigh Caves SSSI, Ashburton Road Cuttings SSSI, East Oggwell Q. SSSI, River Lemon Valley Woods SSSI, Chipley Qs. SSSI, Ransley Q. SSSI, Aller Sand Pit SSSI, Lummaton Q. SSSI, Bulkamore Iron Mine SSSI, Hope's Nose to Walls Hill SSSI, New Cut - Torquay SSSI, Dyer's Q SSSI, Berry Head to Sharkham Point SSSI, Posbury Clump SSSI, Bickleigh Wood Q. SSSI, Kersdown Q. SSSI, Five Oaks - Bampton SSSI, Stout's Cottage SSSI, Lower Whipcoat SSSI, Killerton SSSI, Bonhay Road Cutting SSSI, East Devon Pebblebed Heaths SSSI, Beer Q. and Caves SSSI, Shapwick Grange Q. SSSI, Wilmington Q. SSSI, Reed's Farm Pit SSSI, Furley Chalk Pit, SSSI Broom Gravel Pits SSSI, Crockham Q. SSSI, Chudleigh Caves and Woods SSSI, Southacre Clay Pits SSSI, Haldon Forest SSSI, Lower Dunscombe Farm Q. SSSI, Pitt's Cleeve SSSI, East Dartmoor SSSI, Merrivale SSSI, Spara Bridge, Highdown Q SSSI.

There are currently over 100 CGS which are pits, quarries or cuttings in Devon, and at least 4 CWSs which are quarries. The recent establishment of a database of CGS in Devon will ultimately facilitate the listing of all sites which include or correspond to pits, quarries and cuttings.

11. Current positive initiatives for pits, quarries and cuttings in Devon

- The County Geological Sites (CGS) and County Wildlife Sites (CWS) schemes identify non-statutory sites of (at least) County importance for

their geology and wildlife, and provide planning authorities with this information to steer development away from such sites or to ameliorate potential damage. There are currently over 100 CGS which are pits, quarries or cuttings in Devon, and 4 CWSs which are quarries. Devon RIGS Group (see below) and Devon Wildlife Trust co-ordinate the identification of CGS and CWS, respectively.

- Devon RIGS (Regionally Important Geological/Geomorphological Sites) Group promotes geological conservation, by working with local authorities, landowners and others, and provides advice, on request on County Geological Sites and the management needed to retain or enhance their geological interest. The RIGS Group is undertaking detailed LA by LA surveys, completed projects include for the North Devon AONB, mining districts in West Devon, Torbay, Exeter, South Hams, East Devon, Teignbridge, the Teign Estuary and Dartmoor.
- Devon County Council, the Unitary Authorities and National Park Authorities, as the Mineral Planning Authorities of Devon, implement policies for mineral planning (*e.g.*: those set out in the Devon Minerals Local Plan), which include striking a balance between the demand for mineral resources and the need to protect the environment, having regard to the need for sustainable development, and to ensure the satisfactory after-use of sites after working, with a move away from restoration.
- The Ussher Society is a forum for presenting and discussing the results of geological research into Earth heritage sites in the South West of England. These results are published annually in *Geoscience in south-west England*.
- Lee Moor Wildlife Project, through which the South Hams and South Devon Coast and Countryside Service and DCC are working with English China Clays International to identify and implement opportunities for wildlife conservation and enhancement on the china clay workings.
- Research report commissioned by DoE on the restoration of china clay spoil tips.
- The British Geological Survey has recent completed new surveys of parts of the County (including Exeter, Plymouth and Torbay). New geological maps have been published, supported by two descriptive memoirs (Exeter, Plymouth) and a brief review (Torbay). A new survey of the Tiverton area is currently taking place (2007).
- DCC/EN co-ordinated Devon Roads and Geology Pilot Project, aimed to identify opportunities to conserve geological exposures on Devon's road network, and to develop interpretation and education facilities.
- Devon Educational register of Geological sites provides a web-based resource for educational groups and includes over 80 CGSs and SSSIs

(www.devon.gov.uk/geology). Many of these sites are quarries and cuttings.

- An English Nature (now part of Natural England) initiative with the minerals industry to foster awareness and develop partnerships for conservation. A number of useful publications have resulted.
- The Devon Geodiversity Audit of working quarries was completed in 2003, providing a resource for developing site use and decision making. The document is available on CD or via www.devon.gov.uk/geology and includes detailed descriptions of the main active aggregates quarry sites in the county.
- The Devon Aggregates and Biodiversity Project, a partnership between Aggregates Industries UK and Devon County Council and funded by the Aggregates Levy Sustainability Fund produced Parish Geodiversity Audits for 10 parishes in the county. These PGAs not only document the geodiversity present, they also identify opportunities for conservation and community participation.
- Devon County Council and English Nature (now Natural England) have supported Devon RIGS Group in the establishment of a database of County Geological Sites, including descriptions, maps and photographs. Some of this information is available via the newly established Devon RIGS website.
- The development of the UNESCO-supported Global Geosites initiative provides a context within which the international importance of certain geological and geomorphological features of Devon's pits, quarries and cuttings can be independently demonstrated.
- The English Riviera Geopark has been established at Torbay. Click [here](#) for more information on this exciting project.
- The Dorset and East Devon 'Jurassic Coast' World Heritage site has implications for sites near the coast of East Devon and a Local Geodiversity Action Plan has been prepared.
- The recently listed Cornwall and West Devon Mining Landscapes World Heritage Site includes a number of quarries and cuttings exposing significant aspects of the county's geology. A geodiversity audit and interpretative review was prepared for the West Devon section of the site prior to submissions. The designation has significant implications for

the management of mining-linked geological sites within and adjacent to its boundaries.

- The Meldon Interpretation Project, established by Dartmoor National Park and Devon County Council, has



produced a range of interpretative materials, including a guide book, sign boards and web based educational resources to support the educational and recreational use of one of the County's most important geological areas. Previous interpretative projects on Dartmoor include the Burrator Landform Trail and the exhibition '*350 million years in the making*', both relevant to quarry exposures. The materials produced are also available via the Dartmoor National Park Authority's website.

- Local authority projects have led to the clearing and restoration of geological exposures at key CGS sites, most notably in Teignbridge and on Dartmoor. English Nature's 'Facelift' programme has also re-exposed overgrown and degraded sections of several quarry SSSIs in the county.
- Ornithological surveys, which include key pit and quarry species, have been conducted by BTO and DBWPS.

12. Biodiversity planning context

The Devon Biodiversity Action Plan forms a key link in the chain of biodiversity planning running from the National Plan, through Regional guidance, to local delivery.

Inclusion of a Devon Action Plan for pits, quarries and cuttings was made despite there being no lead from the English or South West Regional Plans. This is because these environments are of county importance for a range of species and habitats which would not be present in any number in the County if it were not for pits, quarries and cuttings. In addition, the inclusion of earth science features in the Devon Plan reinforced the importance of pits and quarries as geological exposure sites.

Although there is no equivalent national Geodiversity Action Plan, the Devon BAP fulfils the role of a Local Geodiversity Action Plan (LGAP) in an innovative and integrated approach to natural heritage conservation.

Associated Action Plans within the Devon BAP:

- Devon whitebeam and related species
- Greater horseshoe bat
- Alder/ willow wet woodland
- Caves, karst and limestone habitats
- Cities, towns and villages
- Freshwater reedbed
- Lowland heathland
- Sea cliff and slope
- Periglacial landscapes

- Mines and mineral waste tips

13. Biodiversity objectives and targets for pits and quarries in Devon

Objective 1

Seek to integrate the objectives of wildlife and Earth heritage conservation with those of commercial quarrying and the cuttings associated with the road and railway network.

Target: Ongoing.

Objective 2

Identify and target for conservation effort those pits, quarries and cuttings of particular significance in Devon for Earth heritage and wildlife conservation.

Targets:

- Complete survey and identification of County Geological Sites and County Wildlife Sites by 2010.
- Contact all owners of such sites on pits, quarries and cuttings by 2010 to advise on management options.

Objective 3

Achieve the restoration and after-use of pits and quarries in a way that incorporates Earth heritage and wildlife conservation objectives.

Target: Ongoing.

Objective 4

Seek to reduce any potential conflicts between land management regimes and the recreational/educational use of pits, quarries and cuttings and the conservation of Earth heritage features and wildlife.

Target: Continued liaison with all user groups, and production of guidance for site owners, occupiers and site users.

Objective 5

Foster greater public awareness and understanding of the value of pits, quarries and cuttings, both as key opportunities to view and learn about Devon's geological heritage and also as unique wildlife habitats.

Targets:

- By 2008 have a network of public trails which demonstrate the geology of Devon.
- Each District in Devon to have publicly accessible sites demonstrating geological exposures with suitable interpretative information, including to meet National Curriculum requirements.
- Ensure adequate educational materials including codes of good practice are available via publications and / or web sites.

Objective 6

Improve the documentation of the geological features and fauna and flora of pits, quarries and cuttings to both facilitate educational and scientific study and inform decision making.

Targets:

- Establish a county geological records centre to gather and manage site records and reports.
- Encourage the reporting of new discoveries and deposition of important specimens in county-based institutions.

14. Wider benefits from pursuing these objectives

The pursuit of the objectives and targets set out in this Plan will not only benefit the Earth heritage interest and biodiversity and of pits, quarries and cuttings. Conservation has wider benefits and advantages for society, by providing a resource which is the basis of many aspects of the local economy, and by adding to the quality of life of the people of Devon in ways which are beyond financial measure. Thus enhancing the interests of biodiversity will also enhance the interests of society as a whole. Some of the wider benefits are as follows.

Recognition that development in the form of quarrying and road/railway operations can provide opportunities for conservation of Earth heritage and wildlife, as well as the perhaps more common perception of it as a destructive force in the countryside.

Benefits to the study of industrial archaeology, since many of the County's pits and quarries, especially the disused ones, provide insights into past building and industrial activity.

The conservation of geological materials, especially fossils and minerals, involves aspects of both site and specimen conservation. Specimen collecting is also an essential part of the scientific and educational process. In many cases, conservation on-site is also not an option as the natural processes of weathering and erosion and the risk of inappropriate removal make it essential to remove the specimen or specimens from the site on which it was found and place it in a secure location. Working with county-based museums will ensure that such material remains available for future study and display, including for raising awareness of Devon's rich geological heritage, thereby fulfilling a number of the key functions of such institutions. The plan will also aid the identification of sources of traditional building materials which can be invaluable for the restoration of historic buildings.

Integration of recreational activities with Earth heritage and wildlife conservation objectives. The objectives of this Plan aim to strike a workable balance between these two aspects of pits and quarries, and will demonstrate that the two are compatible, given co-ordination and careful thought.

15. Priority or indicative actions for pits, quarries and cuttings in Devon

Action	Key Partners
1. Ensure that full account is taken of PPS9 (and revisions) and other relevant policy and guidance to ensure that mineral operations minimise their impacts upon key Earth heritage features and wildlife.	LAs; NE; DWT; DBG; DRIGSG;
2. Seek to integrate nature conservation in the management of pits, quarries and cuttings.	NE; DRIGSG.; Site owners; LAs; DNPA DWT; WT; HA
3. Seek to restrict access and use of sites that are particularly vulnerable and at times of year when vulnerable species are	NE; DRIGSG; RSPB; DWT; Site owners;

Action	Key Partners
breeding. Consider using alternative quarries and pits in order to steer educational and recreational pressures away from sites with delicate or rare features, such as sensitive fossil or mineral deposits or animal and plant communities. Access for continued bone-fide geological research should, however, be maintained.	DBG; DBWPS
4. Provide advice and resources to owners of pits, quarries and cuttings (especially CWS & CGS) to achieve sympathetic management for Earth heritage features and wildlife.	DWT; DRIGSG; NPAs; DBG; Site owners; LAs
5. Undertake surveys at appropriate intervals to monitor access, visitor pressure, disturbance or degradation of geological or wildlife features so that amelioration measures can be implemented if necessary.	DBWPS; DWT; NE; DBG; BTO; BC; BSBI; DIF; DRIGSG; DBRC
6. Increase public awareness of the important Earth heritage and wildlife resource contained in disused pits and quarries by means such as access to safe sites, interpretation, events and guided tours (e.g. produce an updated version of the Devon Educational Register of Geological Sites, including to meet National Curriculum requirements.).	DCC; DNPA; NE; DRIGSG, universities
7. Publicise to landowners the conservation value of disused pits and quarries of all sizes in order to encourage their protection and enhancement.	DWT; NE; DRIGSG; LAs; NPAs; CLA; NFU
8. Establish a geological records centre for Devon and promote the reporting and recording of new finds.	DRIGSG, museums, universities, DCC, landowners including NT

Pits, Quarries and Cuttings Action Plan Champion: Devon RIGS Group

Abbreviations used in text and table

BC	Butterfly Conservation
BGS	British Geological Survey
BSBI	Botanical Society of the British Isles
BTO	British Trust for Ornithology
CLA	Country Landowners Association
CGS	County Geological Site
CWS	County Wildlife Site
DBG	Devon Bat Group
DBWPS	Devon Birdwatching and Preservation Society
DCC	Devon County Council
DIF	Devon Invertebrate Forum
DNPA	Dartmoor National Park Authority
DRIGSG	Devon RIGS Group
DWT	Devon Wildlife Trust
HA	Highways Agency
LAs	Local Authorities
NE	Natural England
NFU	National Farmers Union
NPAs	National Park Authorities
RIGS	Regional Important Geological/Geomorphological Sites
RSPB	Royal Society for the Protection of Birds
WT	Woodland Trust

