- and plan their visit accordingly. Appropriate waterproof and other protective wear should be worn as the site conditions dictate.
- Field work even with specific research permissions and concessions must not disfigure rockfaces with markings or sampling damage.

- Leaders of visiting parties must familiarise themselves with the current state of the exposures, carry out any risk assessment that is required by their organisation
- Never collect from walls or buildings.
- indiscriminately or leave broken material lying around. Keep collecting to a minimum. Collect only from fallen material
- rockface Be considerate to other people, don't hammer
- Obey the countryside code. Stay on footpaths and never closely approach a

The rocks and landscapes around us contain clues to the ancient past of the planet, long before man walked the Earth. Rock faces, whether in quarries, at the roadside or canalside or in other places are where we can access this ancient past. Just like sites for wildlife these can be damaged and destroyed by careless actions. So when visiting a special geological site:

The Geological Code





geology and wildlife. public awareness to encourage positive use of the site for management. This has produced better site access, raised and sheer cliffs, protecting against erosion and habitat sleeper revetments which physically protect the steep slopes The Friends have focussed on works such as installing

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372945. entrances to Norton Covert. Further information 01384 locally. Notices of forthcoming activities are displayed at the conservation work parties at weekends and holds meetings The Friends of Norton Covert Group has regular



Norton Covert history

progressively worked southwards in phases. the burial ground around two hundred years ago and evident that extraction began at the northern end adjacent to building sand and aggregate during the 19th century. It is Norton Covert is a former sand and gravel pit worked for

were actually so positioned as safety screening. Covert was and it is possible that some of the spoil mounds Stourbridge Rifle Club, was located in the centre of the Between the two world wars a rifle range, used by

in phases and develop a varied structure with trees of varying Being worked in phases has allowed the Covert to regenerate

nintiw server also a Wildlife Consultation Area within is a designated Site of Importance for Nature Conservation Today the site is owned and managed by Dudley Council and

for the fragile environment of the Covert. So all visitors are urged to enjoy their visit but to have regard

Community involvement

Green Belt.

Group continues to improve the site. residents, who have formed a Friends of Norton Covert Over the last few years, the active involvement of local



How to find Norton Covert

Road, Stourbridge, (A451 Stourbridge - Kidderminster road). Norton Covert is located near lverley, alongside the Norton

cwn terminus. Norton Road, served by bus service 288 from Stourbridge The nearest bus stop is by The Greyhound Public House,

Broadway and Shenstone Avenue. bridleway, using the bus stop at the junction of The is suitable for access via the Sandy Lane (Roman Road) An alternative route through Norton Estate with service 294



SCCess

overleaf). Lane Bridleway, Covert Lane and Norton Road (see map There are three access points to Norton Covert, from Sandy

visiting Norton Covert. αηγ loss or injury, howsoever caused, to anyone Friends of Norton Covert accept any responsibility for Trust for Birmingham & the Black Country, nor The the Black Country Geological Society, nor the Wildlife Neither Dudley Council nor any of its employees, nor

- Ensure that in the longer term your field notes and samples are offered to a local museum.
- For more information contact Dudley Museum on 01384 815575 or The Geologist's Association, Burlington House, Piccadilly, London W1V 9AG

Please follow this geological code to ensure that our fragile geological sites are protected and used wisely.

The Countryside Code

2

From a gentle stroll or relaxing picnic to a long-distant walk or heart-pumping adventure, the countryside provides every opportunity for enjoyment and relaxation.

- Be safe plan ahead and follow any signs
- Leave gates and property as you find them
- Protect plants and animals, and take your litter home
- Keep dogs under close control
- Consider other people

If you follow the Countryside Code wherever you go, you'll get the best enjoyment possible and you'll help to protect the countryside now and for future generations.

www.countrysideaccess.gov.uk

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Norton Covert

The ancient past

The geology of Norton Covert is a story of scorching deserts and icy wastes. There are two distinct rock formations present. The underlying bed rock (country rock) is a red-orange, fine to medium grained sandstone with occasional thin mudstone bands belonging to the Wildmoor Sandstone Formation (formerly known as the Upper Mottled Sandstone) which was deposited in the scorching deserts of Triassic age (circa 220 million years ago). The sand grains are mainly white quartz coloured red by a thin veneer of iron oxide (rust).

Lying on top of the Wildmoor Formation is a superficial capping of soft sands and gravels which were deposited in the Ice-age (glacial period) about 20,000 -25,000 years ago.



Unfortunately the Wildmoor Formation is no longer exposed at Norton Covert but when it was a working sand pit, a section showing a thickness of about 8.5m of sands and gravel resting on about 3m of sand rock was visible in the South Western corner but this is now buried beneath overburden which has accumulated around the perimeter. The Wildmoor Formation can still be seen in Stourbridge along the river Stour west of the Bonded Warehouse.

Small but very important exposures of the Ice-age sands and gravel remain in the southern rim of the Covert. Here, thin layers (laminae) of coarse red-brown and buff sands with thicker pebbly sands can be seen. The ground surface at the southern end of the covert is still undisturbed and shows abundant pebbles.

Although both of these formations were once exposed in many quarries, a combination of industrial decline and redevelopment as well as natural weathering of the loosely consolidated sediments has meant considerable loss to the nature conservation resource, hence the importance and ranking of Norton Covert as a geological SINC.

Scorching deserts

The Wildmoor Formation outcrops in a northeasterly trending tract between 1-2 km wide and underlies much of Stourbridge as far as Amblecote (see inset map). The sandstone was deposited in a desert basin by an occasional, perhaps seasonally, active river system with a general flow from the South to North extending as far as present day Cheshire. The sand and silt is believed to have been derived from sand dunes in the Triassic desert and reworking of the immediately underlying but older Kidderminster (Triassic age, about 245 million years ago) and/or Bridgnorth Formations (Permian age, about 260 million years old)) which outcrop in the region. The general lack of pebbles within the Wildmoor Formation supports the view that material was locally derived rather than transported from distant sources. The occasional mudstone bands probably represent wind blown dust and fine sand accumulated under temporary lakes. The climate was arid or semi-arid punctuated by seasonal torrential storms



When the Wildmoor sandstone was being formed, the world's landmass formed one giant supercontinent known as Pangaea and the part of the Earth's crust upon which Stourbridge now stands lay about 15 degrees north of the equator, approximating to where Sudan, Chad and other north African countries lie today.

Fossils are unknown from this formation over much of the Midlands. Trace fossils and vertebrate footprints are known from the Droitwich area but the general lack of material underlines the harsh environmental conditions

Icy wastes

The Ice-age sand and gravel deposits locally form a prominent NW trending ridge extending from Bury's Hill (near Ounty John Lane) to Greyhound Lane (see inset map) and also extend southwards towards Hagley as evidenced by the pronounced hummocky and undulating ground which can be seen on the opposite side of Norton road.



Norton Covert today

Woodland glades

Mature woodland now covers the site but the history of sand and gravel extraction has given rise to varying ground levels and this has produced a variety of habitats. Oak is the dominant tree species but Birch, Sycamore, Ash, Wych-Elm, Holly, Beech and Scots Pine are also significant.

From the main access point from Sandy Lane bridleway, a path follows the western boundary alongside the back fences and walls to gardens of Sandy Road and makes a pleasant route and good vantage points. The views are all the more interesting because they include the ability to look across the wood at canopy level as well as seeing the different habitats, some more open and others quite dense.







Wildlife

The Covert has a variety of mammals. Foxes use the Covert for hunting; Pippistrelle bats have been recorded and Wood mice and Bank voles are present and mole hills have been noted towards the Norton Road side. Grey squirrels are present and do cause damage particularly to Beech and Sycamore trees, causing die back and ring- barking. They also take eggs and young birds and probably cause high mortality amongst some species of birds.

The White letter hairstreak butterfly has been recorded from neighbouring gardens and the remnant elm population is

The deposits represent the eroded remnants of outwash sands and gravels from rivers flowing from the front of the melting icesheet during the Devensian stage (10, 000 - 100,000 years ago). At its maximum advance the ice sheet extended as far south as Wolverhampton. The sand and gravel is almost entirely derived from the various Triassic formations mentioned above although from much further North than this point. Small erratic pebbles of Scottish, Lake District and North Wales origin have been found here in the past indicating derivation from merging glaciers from both the Welsh Ice cap and Irish Sea Ice.

No fossils are recorded from Norton Covert but bones and teeth from typical tundra species like Mammoth and Giant Elk are known from similar deposits in the region. The precise age of the sand and gravel deposits at Norton Covert is uncertain (20,000-25,000 years old) but climatic conditions would have been similar to that which obtains in Northern Canada or Siberia today. important as a larval food plant.

Moth trapping by the Friends Group has recorded 114 species. These include a wide range of general and woodland moth species and help show the value of the woodland for this range of invertebrates.

Local recording by members of The Friends Group has produced a bird list of 47 species. These include typical garden and woodland species such as robin, wren, blackbird, willow and marsh tit, willow and wood warbler, jay and finches including hawfinch.

Winter visitors include brambling, fieldfare and redwing. Green, greater spotted woodpecker and lesser spotted woodpeckers are present as are nuthatch and tree creeper which indicates the value of deadwood present. Buzzard, sparrowhawk, kestrel and tawny owl also occur showing the value of the covert to predators. The wood is also a roosting site for jackdaws and rooks.

Enjoy your visit.

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