

University article

The Oldest Rocks of the Jurassic Coast

Location: GR SY 022795, on the South West Coast Path. Car parking and toilets near the Lifeboat station at SY 014800. Trains to Exmouth train station (25 minutes' walk away) Stagecoach Bus service 95 from Exmouth Station to the Lifeboat Station hourly in summer. Accessible parking near Orcombe Point. A flat route to the GeoNeedle, can be reached by a zigzag sloping path from the beach and road.

Geography: Gateway to the Jurassic Coast, with dramatic red cliffs, sandy beaches and extensive views on a clear day.



Description: The GeoNeedle marks the start of the 96 mile long Jurassic Coast. The cliffs exposed here provide a useful starting point for geographers and geologists to investigate rock types and coastal processes. From here to Dorset, 180 million years of geological history can be seen in the cliffs of Triassic, Jurassic and Cretaceous rocks. The oldest rocks from the Triassic period form the cliffs are best seen at Rodney Point, where the coast road (Queen's Drive) ends. They are mudstones and sandstones deposited at the beginning of the Triassic around 250 million years ago when Britain was around the latitude of the Sahara. The climate was semi-arid with wetter periods with streams and lakes. Meandering rivers deposited the cross-bedded cemented sandstones which can be seen at sea level where weathering and erosion of weaker beds has produced a stepped cliff profile. Higher up the cliff are red mudstones, silts and clays deposited in large lakes. They are much softer and easily broken up by weathering, wind and rain. There are several faults visible in the sandstone which are exploited by wave action. Undercutting of the sandstone at sea level and weathering and erosion of the mudstones above up has led to cliff falls. Various types of slope failure including mudflows rockfalls and slumps are evident. On a clear day, views from the GeoNeedle are spectacular, east along the Jurassic Coast towards Lyme Regis and Portland, and west across the Exe Estuary to Dawlish, Torbay, and Berry Head. Owned by the National Trust, this area is rich in wildflowers including orchids. They provide food for many other species. Look out for butterflies and moths and birds such as Buzzards, Kestrels, Cormorants and Kittiwakes. Detailed information panels giving details about rock formations, prehistoric environments and coastal features can be found at the start of the walk and by the beach, while several small metal plaques mounted along the path provide many interesting facts about the area, wildlife and scenery which will intrigue both children and adults. The GeoNeedle can be reached easily from the beach and the coast road, and it is possible to walk further along the coast path to Sandy Bay/Littleham or Budleigh Salterton where you can return to Exmouth by bus but check the timetable first especially in winter. A set of steep steps lead down the beach at Rodney Point which can be accessed at low tide, but they may be slippery when wet. Refreshments are available at most times of year near the car parks.

Safety: The cliffs near the GeoNeedle are very steep and unstable, and the cliff edge must be avoided at all times. The beach at Orcombe Point is covered by the sea at high tide and visitors must be aware that it is possible to get cut off by the incoming sea. The rocks are dangerous especially when the sea is rough with high waves.



Further information:

<https://jurassiccoast.org/visit/attractions/exmouth/>

<https://www.southwestcoastpath.org.uk/walksdb/562/>

