SITE

Name: Prawle Point and Start Point

Parish: East Portlemouth, Chivelstone and Stokenham

Local Authority: South Hams

National Grid Ref: SX 741 373 - 819 381

OS Sheets: 1:50K, 202, **1:10K**, SX73 NW, NE, SX83 NW

Locality Description: Prawle Point and Start Point lie at the southern end of Start Bay, to the south east of Salcombe, on the South Hams coastline.

Nature and Status of Site: The site consists of 10km of foreshore, cliff section and raised beaches. A Site of Special Scientific Interest (SSSI) for its geological and wildlife interest.

Summary of Geological / Geomorphological Interest: The coastline includes the most southerly point in Devon and is predominantly south facing. The cliffs throughout are formed from Devonian schists. Raised beaches and low Pleistocene cliffs of pebbles, gravel, sand and clay are found at the present high water mark. The raised beaches, which are also composed of head, formed as a result of periglacial deposition. Geologically, the coastline provides some of the best examples of head deposits in the region and forms part of a classic assemblage of periglacial features. In addition, it contains a valuable sequence of shore platforms, demonstrating a rare example of highly active bedrock weathering. The intertidal area is a wave cut platform, the base of which is composed of the same schist as that which forms the high cliffs.

Safety Considerations: Tide timetables should be consulted and hard hats are essential for any of the cliff faces. Boulders may fall from the cliffs.

Educational Age Groups: Secondary, College/6th Form, University.

Parking and Access: The site can be accessed from the A379, via numerous minor roads. Easiest access via minor roads to Prawle Point (parking is available at a National Trust car park), Lannacombe Beach (very limited parking) and Start Point (parking at an Estate car park, with a toll to be paid). The South West Coast Path runs through the site and all cliff and foreshore exposures are accessible (although the foreshore is covered at high tide and the higher cliffs may be difficult to study). Please note that is important to stay on the path due to dangerous cliff edges along the site and to refer to the safety guidance at the start of this booklet. Please also note that the South West Coastal Path section between Start Point to Prawle Point is reasonably long (nearly 6 miles).

References

Campbell, S (et al). (1998). Quaternary of South-West England. GCR Series No. 14, Joint Nature Conservation Committee, Peterborough, Chapman and Hall, 439pp.

Coward M. P. & McClay K. R. (1983). Thrust Tectonics of South Devon. Jour. Geol. Soc. London, 140, 215-28.

Floyd, P. A, et al. (1993). Igneous Rocks of South-West England. GCR Series No.5, Joint Nature Conservation Committee, Peterborough, and Chapman and Hall, 256pp.

Harvey, P. and Keene, P. 1985. Prawle Peninsula Coastal Landscape Trail, Field Studies Council, 28pp.

Holdsworth R. E. (1989). The Start-Perranporth Line: A Devonian Terrane Boundary in the Variscan Orogen of SW England. Jour. Geol. Soc. London, **146**, 419-21.

Motteshead, D.N. (1971). Coastal head deposits between Start Point and Hope Cove, Devon. Field Studies 3, 433-453

Motteshead, D.N. (1986). Classic landforms of the South Devon Coast. Classic Landfrom Guides 5. The Geographical Association, Sheffield, 41-46.

ORME, A.R. 1960. The raised beaches and strandlines of South Devon. *Field Studies* **1**: 109-130.

Ussher, W.A.E. 1904. The geology of the country around Kingsbridge and Salcombe. *Memoirs of the Geological Survey, England and Wales .* London, HMSO.

Additional references are listed by Floyd et al. (1993) and Keen in Campbell et al. (1998, 167-170).

Detailed Geology: Start Complex: This site provides some of the best section through the highly deformed and metamorphosed oceanic basalts of the Start Complex. The southernmost peninsula of south Devon makes up this complex, which exhibits a range of variably schistose rocks of different aspect to the Lower Devonian argillites and phyllites to the north. The age is not known, but assumed to be Devonian. The Start Complex junction has been interpreted as either a low angle thrust that emplaced the Start complex over the local Devonian rocks or a basement fault forming a terrane boundary to southern pull-apart, ocean-crust-floored basins

Two main groups of schists can be seen within this complex: metasedimentary micaceous greyschists and metavolcanic greenschists, with minor variants of mixed sedimentary and volcanic character. Mineralogical and chemical data indicate that initially the greenschists constituted a series of basaltic lavas which were subsequently highly 'tectonised' and metamorphosed to a low grade. Trace-element data (Floyd), indicates that they constituted a series of essentially undifferentiated tholeiites with a MORB chemical signature, indicating that the Start greenschists originally constituted a volcanic segment of the Variscan ocean floor. The greenschists are fine to medium grained and are characteristically schistose with fine banding produced by variation in mineralogy and grain size. Quartz is frequently present in the form of fine, banding-parallel metamorphic segregations or veinlets. The delicate nature of the fine laminations and rapid changes in lithology, especially in low-strain areas, strongly suggests that much of the sequence was composed of basaltic volcaniclastics, rather than lavas. However, greater variability in terms of gross banding, reflect original differences between lava flows, sills and tuffaceous material. See Floyd et al. fro further details.

Quaternary: The area is famous for its landforms and deposits which demonstrate Quaternary climate change including:

- Ipswichian raised shore platform and cliff line

- Devensian periglacial head deposits, overlying the above
- Higher marine platforms representing earlier, i.e. pre-Ipswichian raised sea levels.

These features are described by Keen in Campbell et al. (also available via: www.jncc.gov.uk) and Harvey and Keene (1985) is an excellent guide to the landforms in the area

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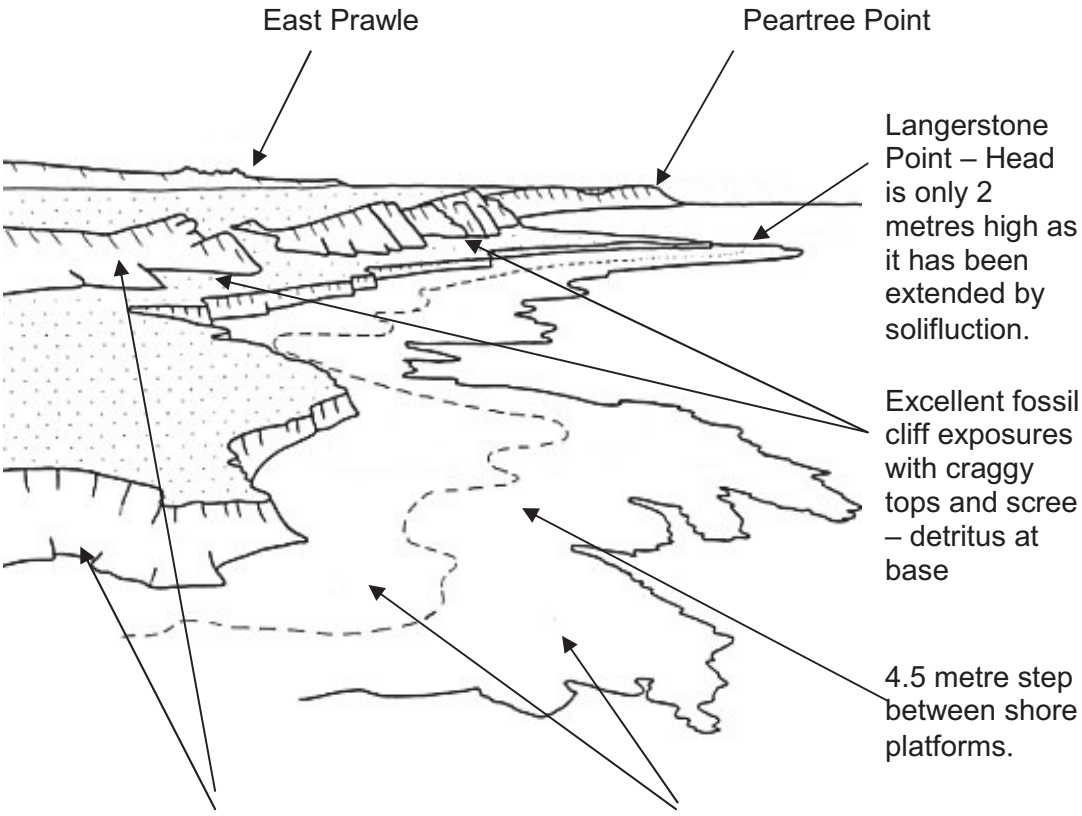
Suggested Questions

1. What geomorphological features can be seen between Prawle Point and Langerstone Point?

2. Working from the sea inland, how many former shore platforms are there? What does this indicate about former sea levels?

3. The cliffs west of Prawle Point differ to those around Langerstone Point and beyond, both in size, shape and vegetation cover. Why?

Sketch diagram of the east of Prawle Point at low tide

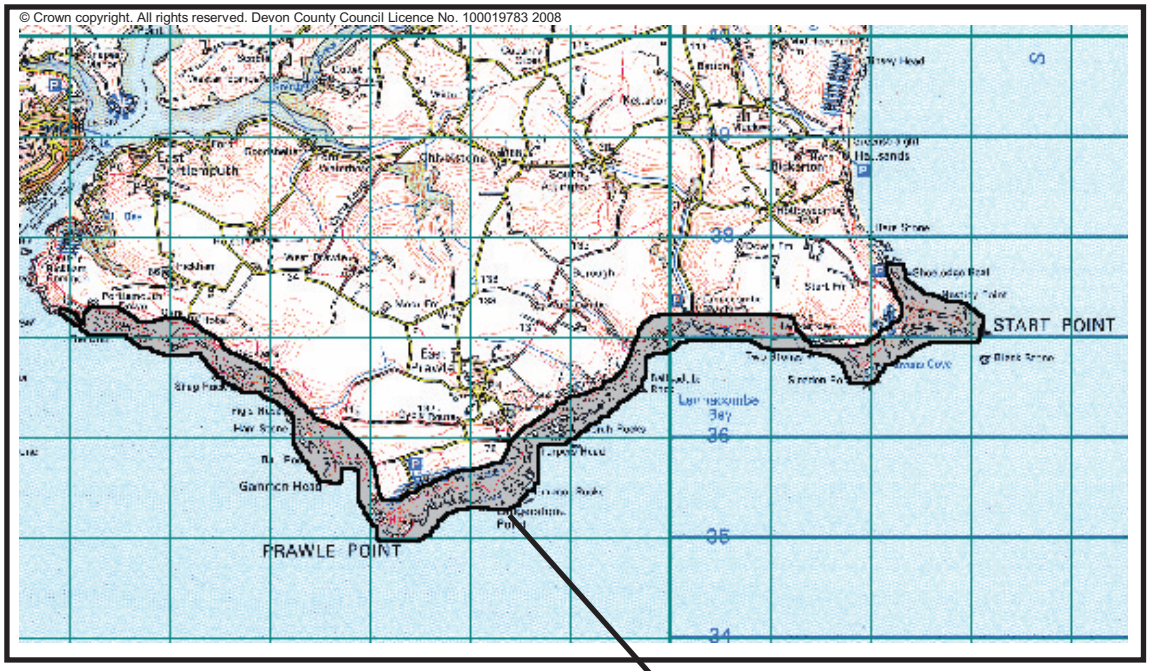


Adapted from Harvey and Keene (1985).

LOCATION PLAN

PRAWLE POINT AND START POINT, SSSI
EAST PORTLEMOUTH/CHIVELSTONE/STOKENHAM, SOUTH HAMS

National Grid Ref: SX 741 373 - 819 381



Scale 1: 70,000

Site Locality

Forms 10 kilometres of foreshore, cliff section and raised beach lying 16 kilometres south-west of Dartmouth

Parking and Access

- The site can be accessed by car or by mini bus from the A379 Kingsbridge to Dartmouth road via numerous minor roads.
- Use either Prawle Point National Trust car park, Lannacombe Beach (very limited parking) or Start Point Estate car park (toll must be paid).
- The South West Coast Path runs through the site and the cliff and foreshore exposures are generally accessible.

SITE PLAN

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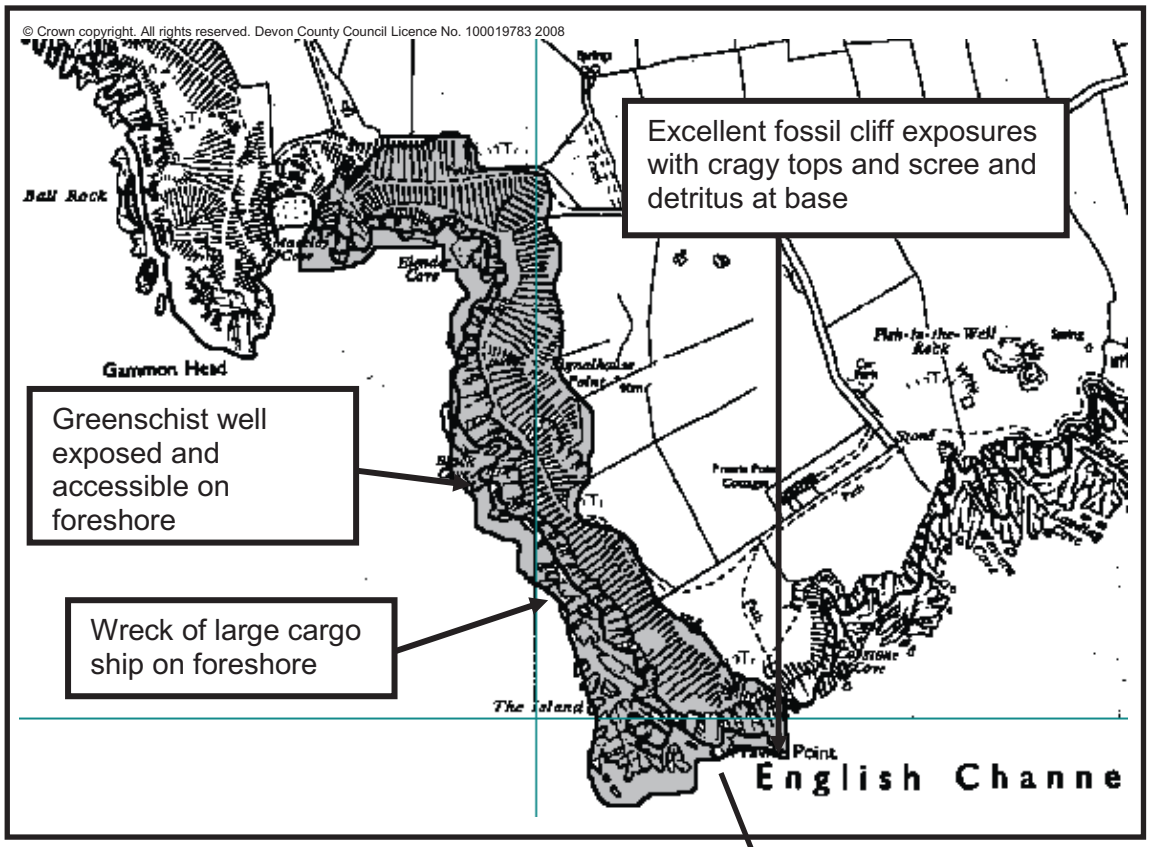
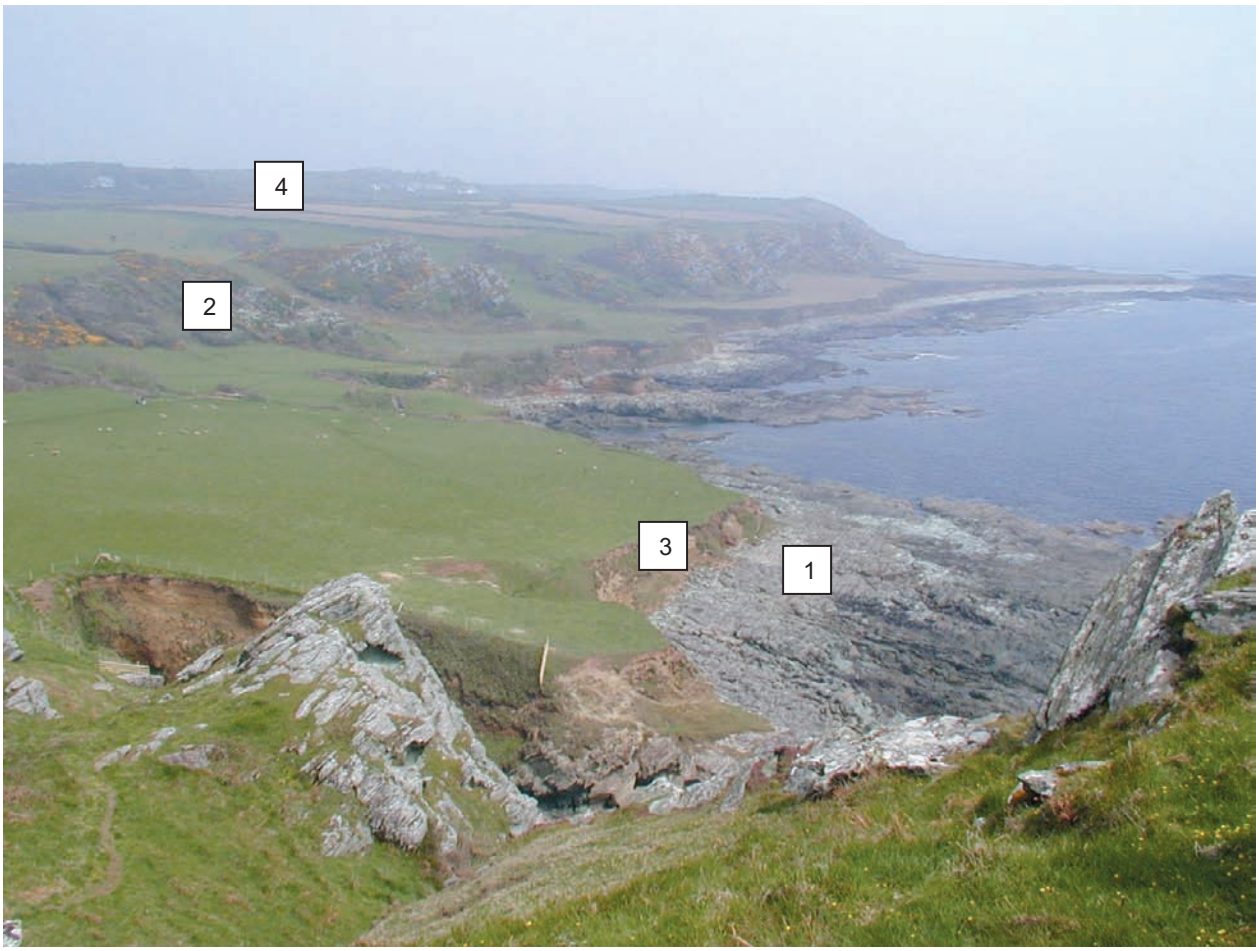


Main Points of Interest:

- A classic site for raised beaches and former cliffs with periglacial head deposits.
- A valuable sequence of shore platforms with highly active bedrock weathering.
- Provides excellent exposures of the highly deformed and metamorphosed oceanic basalts of the Start Complex seen as two main groups of Devonian Schists.

PRAWLE POINT



View from Prawle Point towards Langerstone Point showing the classic geomorphological features of the area, including:

1. Raised shore platform (Ipswichian Interglcial)
2. Fossil cliff line (Ipswichian Interglcial)
3. Periglacial head (Devensian Glaciation)
4. Pre-Ipswichian marine platform and cliff line.

Rock outcrops in the foreground include hornblende schists of the Start Complex

Periglacial head (solifluxion) deposits forming a stack-like feature on the raised shore platform at Western Cove, E of Prawle Point. Note angular clasts of local schists in an orange-stained silty matrix. Clasts are aligned parallel to flow. Basal part of head profile, in contact with mica and hornblende schist bedrock, contains small quartz pebbles and may therefore include remnants of a beach or stream deposit.

View of hornblende schist dominate cliffs North West or Prawle Point. Cove is Vendrick Cove, with Gammon Head in the distance.

The cliffs and coastal slopes West of Start Point. Bedrock is dominated by mica schist.