

## SITE

**Name:** Brent Tor

**Parish:** Brentor

**Local Authority:** Dartmoor National Park

**National Grid Ref:** SX 471 804

**OS Sheets:** 1:50K, 191, 1:10K, SX48 SE

**Locality Description:** The site lies 2½km NW of Mary Tavy (A386) and is well known for its historical chapel.

**Nature and Status of Site:** Exposed tor in the shape of a conical knoll. It is a Site of Special Scientific Interest (SSSI).

**Summary of Geological / Geomorphological Interests:** Excellent and rare example of Lower Carboniferous submarine volcanic deposits. Demonstrates the effect of water current reworking, carrying volcanic debris down the slope for a considerable distance. Rocks are basaltic lavas broken up by explosive contact with sea water during eruption on the sea bed.

**Safety Considerations:** Vegetated slopes may make climbing/walking difficult in wet weather.

**Educational Groups:** Primary, Secondary, College/6<sup>th</sup> Form, University.

**Parking and Access:** Cars can park directly west of the site, north west of Heathfield Plantation. Access to the site entrance is at the northern end near the Stag's Head House, gained via road side pavement.

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## References

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.

Isaac, K.P., Turner, P.J. & Stewart, I.J. 1982. **The evolution of the Hercynides of central, SW England**. *Jl. G.S. L.* **139**: 521-531.

Selwood, E.B. 1974. **The age of the Upper Palaeozoic volcanics between Bodmin moor and Dartmoor**. *Proc. Ussher Soc.* **3**: 63-70

**Detailed Geology:** A unique example of an early Carboniferous basaltic pillow lava and hyaloclastite seamount, or mound, with a reworked volcanoclastic apron. Whilst the volcanics are generally recognised as Carboniferous as they rest on cherts and slates assigned to this age, Selwood (1974), suggested that the volcanics and associated radiolarian-bearing black slates might be late Devonian, because the sediments are lithologically similar to strata of this age north of Tavistock. The Brent Tor volcanics are mainly composed of coarsely bedded volcanoclastics that have a southerly dip. The base of the sections shows variably foliated, platy, light and dark grey fine tuffs upon which, rest a series of basaltic hyaloclastites and pillow-lava breccias that comprise the main outcrops. On the southern slopes below the chapel are hyaloclastites containing closely packed large fragments of dark, non-vesicular basalt interbedded with foliated tuffs, containing broken, interbedded pillows. Further downslope, graded hyaloclastites and pillow breccias can be found. This reworked volcanic debris probably travelled some distance away. All lava fragments are highly altered and oxidised basaltic material. The general shape and limited extent of the hyaloclastite deposits suggests a localised submarine eruption, which built a high-level mound of largely unsorted, basaltic, glassy fragments and pillow breccias.

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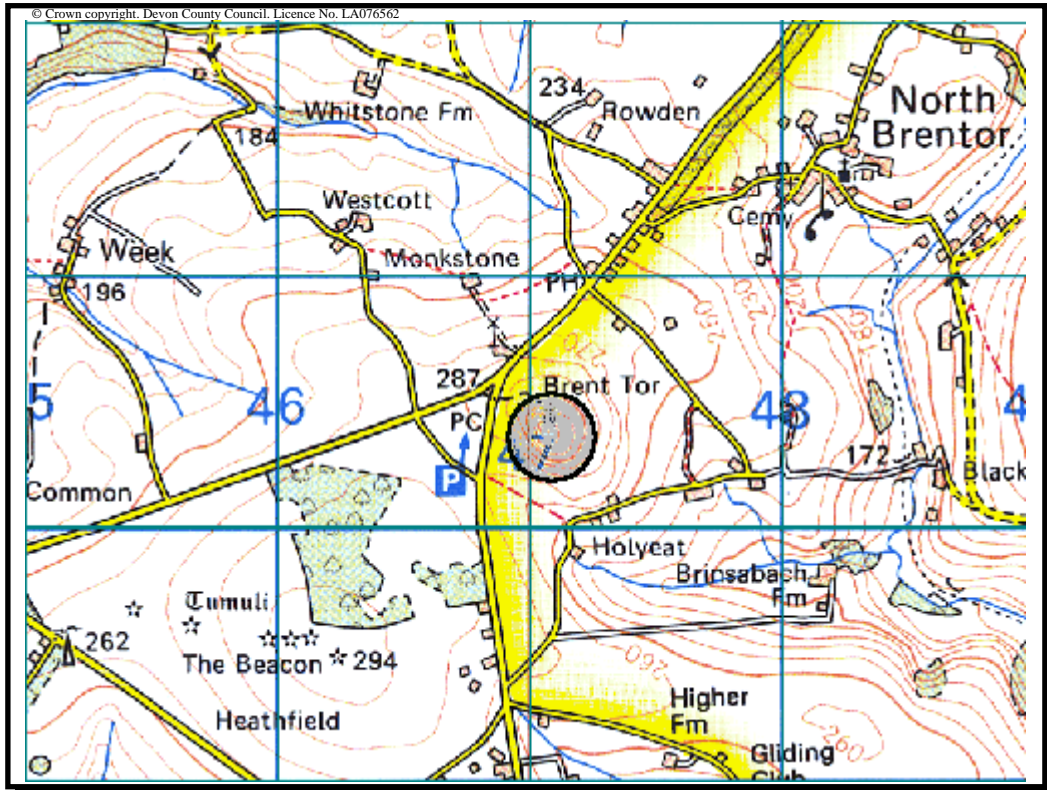
### **Suggested Questions**

1. What characteristics can be used to identify these rocks as (i) volcanic, (ii) basaltic and (iii) submarine eruption?

## LOCATION PLAN

### **BRENT TOR, SSSI BRENTOR, DARTMOOR NATIONAL PARK**

National Grid Ref: SX 471 804



Scale 1:30,000



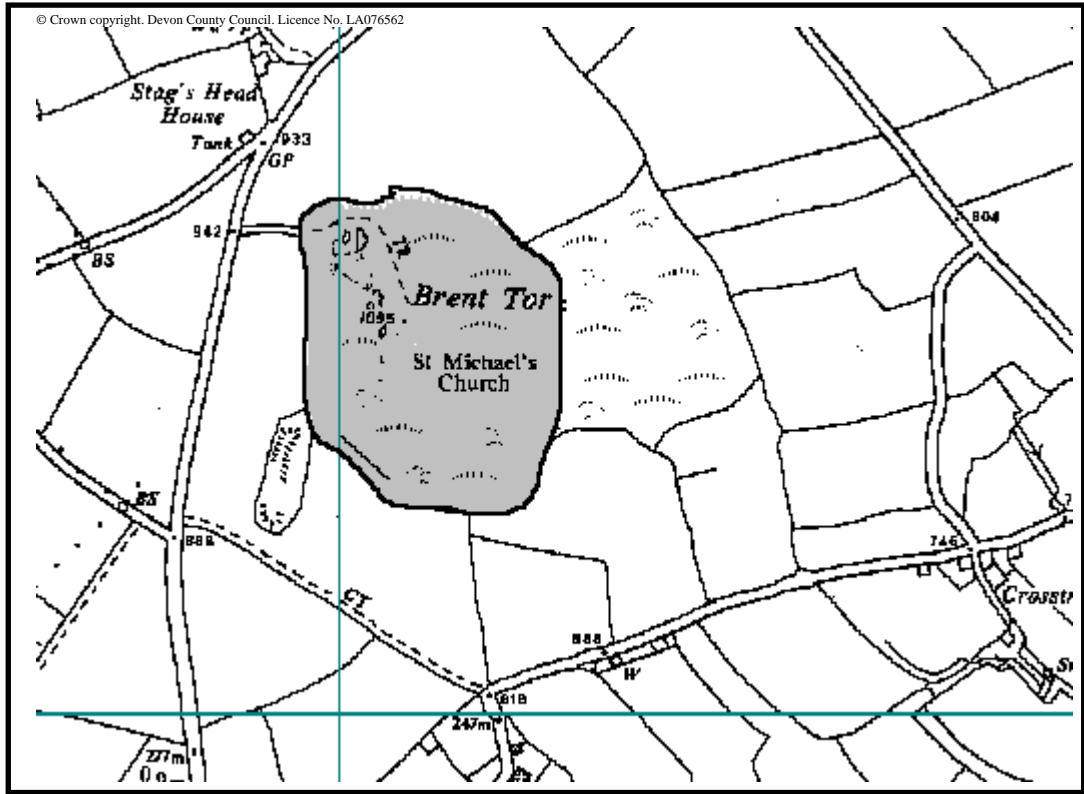
Site locality

### Parking and Access

**Cars can park directly west of the site, north west of Heathfield Plantation. Access to the site entrance is at the northern end near the Stag's Head House, gained via road side pavements.**

**SITE PLAN**  
**BRENT TOR**  
**BRENTOR, DARTMOOR NATIONAL PARK**

National Grid Ref: SX 471 804



Approx. County SSSI Boundary

Scale 1 : 8,000

**Main Points of Interest:**

- **Excellent and rare example of Lower Carboniferous submarine volcanic deposits.**
- **Demonstrates the effect of water current reworking, carrying volcanic debris down slope for a considerable distance.**
- **Rocks are basaltic lavas broken up by explosive contact with sea water during eruption on the sea bed.**

## BRENT TOR



Robert Wolton

Lower Carboniferous submarine volcanic pile forming a regionally conspicuous conical hill