SITE

Name: Lydford Gorge

Parish: Lydford

Local Authority: Dartmoor National Park

National Grid Ref: SX 503 838

OS Sheets: 1:50K, 191, **1:10K**, SX58 SW

Locality Description: Lydford Gorge is situated on the north-western flanks of Dartmoor (SX 501 832 - SX 508 848), halfway between Okehampton and Tavistock, 1.5km west of the A386.

Nature and Status of Site: 2km long river gorge. It is a Site of Special Scientific Interest (SSSI).

Summary of Geological / Geomorphological Interests: The gorge provides excellent exposures of dark slates of Devonian age and two major flat lying thrusts known as the Manor Thrust and Lydford Thrust; the only known exposures. This separates two major rock units known as the Liddaton Slates and the Lydford Beds, which contain important fossil remains, critical in dating these beds. Geomorphologically, the site displays a fine range of features associated with 'river capture' and gorge formation, including an impressive waterfall and the fluted imprints of ancient potholes.

Safety Considerations: Due care and attention should be paid when accessing the ravine at the north-western end of the site. Paths are narrow and maybe wet.

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

Parking and Access: There is a fee for visiting the gorge, but groups can receive a discounted rate. There are also offers for educational groups which include 12 month entrance to all National Trust sites. Pre-booking is essential. The gorge is open on Fridays, Saturdays and Sundays between 15 Feb – 14th March and 7th Nov – 28th December and 7 days a week 15th March - 2nd November. Car parking is free and there are facilities for coach parking.

A number of buses stop at Lydford Gorge, including services from Plymouth. For timetable details, visit www.traveline.org.uk. Lydford Gorge is also accessible via the Devon Coast to Coast cycle route.

Geology notes are available for A-Level students and a geology guide for the interested lay visitor and primary age groups is also available.

Contact: Contact the Visitor Service Manager to pre-book (Telephone; 01822 820320). For further information, visit the National Trust website.

References

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Detailed Geology: Lydford Gorge affords the best exposures of rocks in a region that are otherwise poorly exposed. The structure of the region is complex and has three main formations:

1. Whitelady Formation
2. Liddaton Formation
3. Lydford Formation

The Whitelady Formation is named after the waterfall at SX 501 835, in the lower end of the gorge. This represents the lowest tectonic and lithological unit exposed. True thickness of the formation cannot be estimated due to complex folding. Ammonoids from the Manor Hotel Beds (SX 502 832) fixes its age as Platyclymenia Stufe (Famennian). The unit is varied and contains a wide variety of rock types, including metamorphosed mudstones (pelites), sandstones and thin beds of chert or relatively coarse grained calcareous-siliceous lenses. A few metamorphosed limestones include traces of crinoid

ossicles, brachiopods and some well preserved ostracods. The Whitelady Thrust with which some 30m of mylonitic fault rocks are associated, marks the boundary of the Whitelady and Liddaton formations. The Liddaton Formation consists of black to dark grey smooth pelites with occasional nodular limestones and horizons crowded with siliceous nodules about 2-5cm in diameter. The pelites are commonly finely graded, indicating a distal turbiditic origin and overall is indicative of a pelagic sedimentary environment. Ostracods of the *hemisphaerica-dichotoma* zone have been recovered, indicating an Upper Famennian age. The Lydford Formation consists of dark grey to dull brownish-grey slightly to very silty and sandy micaceous pelites, with numerous thin lenses and nodules of massive greywackes, turbiditic sandstones, impure limestones, cherts and volcanic rocks. The date is put at mid-Tournasian (Lower Carboniferous). The regional geological history of the rocks can be interpreted to represent early Upper Devonian (Famennian) sedimentation in a basin and rise setting. Later in the Lower Carboniferous (Tournasian) deposition took place in a tectonically active zone leading to the formation of turbidites and olistostromes in a basin setting.

The geomorphology of Lydford Gorge is a classic example of a river gorge followed by river capture and is of particular interest because it contains a number of closely interrelated fluvial features. Evidence of the recession of the knickpoints and the stage at which capture took place, allow the Rivers Lyd and Burn to be studied in relation to the high level erosion surfaces in the Dartmoor area.

Suggested Questions

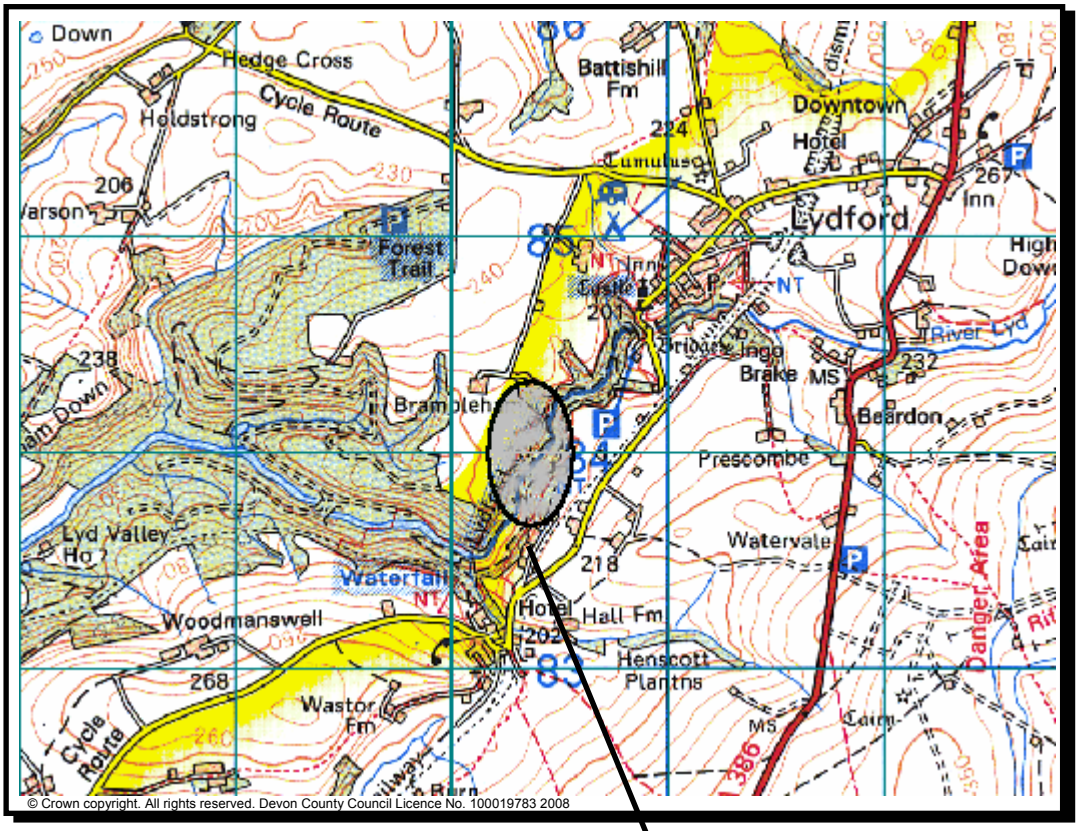
1. What geomorphological features can be seen to indicate that the gorge was formed and eroded by a river of greater size than the River Burn, which now flows through it?

2. In terms of river processes and the development of drainage patterns, can you suggest how such a deep and narrow gorge could have formed at this point?

LOCATION PLAN

LYDFORD GORGE, SSSI
LYDFORD, DARTMOOR NATIONAL PARK

National Grid Ref: SX 503 838



Scale 1:35,000

Site locality

Between Okehampton and Tavistock, 1.5km west of A386

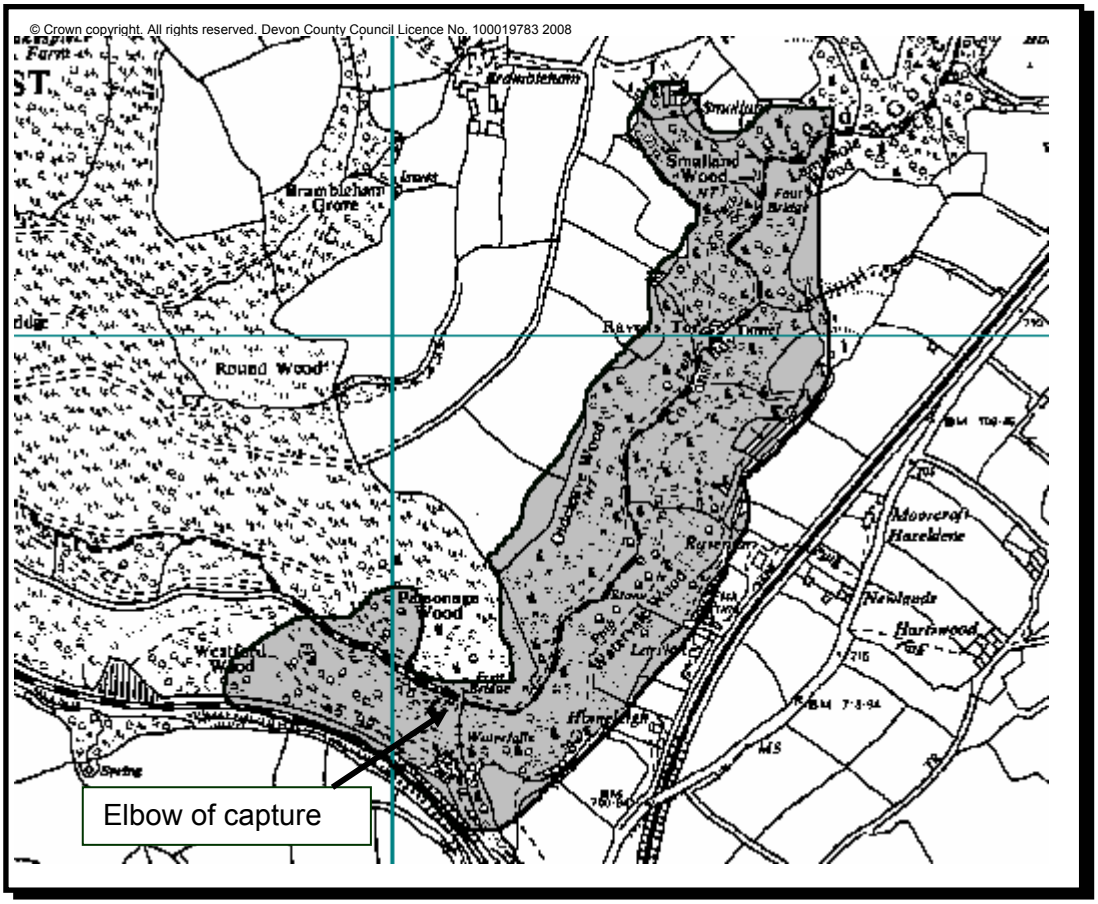
Parking and Access

- Majority of the site is owned by National Trust, with car parking available at the trust centres at either end of the Gorge.
- The gorge is accessible via two interlinking paths. Firstly, an upper path which runs along the eastern side of the gorge to Whitelady waterfall. Secondly, a lower path which runs along the northern river bank and which ultimately provides access to the main gorge section to the North West.

SITE PLAN

LYDFORD GORGE
LYDFORD, DARTMOOR NATIONAL PARK

National Grid Ref: SX 503 838



Scale 1:10,000

Approx. Extent of Site

Main Points of Interest:

- Combines features associated with gorge formation and 'river capture'.
- Excellent exposures of dark slates of Devonian age.
- Important thrust faults separate the slates.
- Impressive waterfall and fluted imprints of ancient potholes.
- Reasonable exposures of Whitelady Formation in vicinity of Waterfall, eastwards along lower path and along tributary of the Lyd.

LYDFORD GORGE

The spectacular Whitelady Waterfall: type locality of the Devonian Whitelady Formation

Examining Devonian fossil bryozoa in the footpath leading to the Whitelady waterfall.