

SITE

Name: Slapton Ley

Parish: Slapton

Local Authority: South Hams

National Grid Ref: SX 826 441

OS Sheets: 1:50K, 202, 1:10K, SX84 SW, NW

Locality Description: Slapton Ley lies on the south Devon coast 7 km south west of Dartmouth.

Nature and Status of Site: Slapton Ley is the largest natural freshwater lake in south west England, formed by a shingle bar damming a broad bay. Forms part of a [Site of Special Scientific Interest](#) (SSSI) and [National Nature Reserve](#).

Summary of Geological / Geomorphological Interest: Slapton Ley was formed by an ancient shingle bay damming a post-glacial estuary some 3000 years ago. The study of the sediments that have accumulated in the back barrier lagoons allows a detailed reconstruction of events since its formation.

Safety Considerations: No specific points to note.

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

Parking and Access: Slapton Ley is directly accessible from the A379 coast road which runs along the shingle bar between Strete Gate and Torcross. Parking is available at Strete gate, Slapton Sands and Torcross. There is also a regular bus service between Slapton and Dartmouth, Kingsbridge and Plymouth. For timetable details, visit www.traveline.org.uk. Additionally the site is in close proximity to the [South West Coast Path](#) so can be accessed on foot as part of a coastal walk.

The Ley itself is an important area for water birds and forms part of a [National Nature Reserve](#). Please observe any access restrictions which may be in place at the time of your visit.

References

Hails J. R. (ed.) (1975). Submarine Geology, Sediment Distribution & Quaternary History of Start Bay, Devon: Thematic Volume. Jour. Geol. Soc. London, 131, Part 1, 101pp.

May, V J & Hansom, J D (2003). Coastal Geomorphology of Great Britain. *Geological Conservation Review Series 28* (Joint Nature Conservation Committee, Peterborough)

Morey C. R. (1976). The Natural history of Slapton Ley Nature Reserve, IX. The Morphological & History of the Lake Basins. *Field Studies*, 4, 353-68.

Morey C. R. (1980). The Origin & Development of a Coastal Lagoon System, Start Bay, South Devon. Unpub. M.Phil. Thesis, CNA.

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

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

Detailed Geology: The shingle barrier beach enclosing Slapton Ley is formed mainly of flint, chert and quartz shingle extending some 5.6km. The southern 2.2km separate the lagoon, Slapton Ley, from the sea, whereas the northern ridge is backed first by an infilled former arm of the lagoon and then by cliffs of the Lower Devonian slates and grits. Slapton is unusual in combining shingle material with an easterly aspect. In the past, the beach was part of a continuous beach, which extended from close to Start Point to its present northern limit. At low water it is still a continuous feature linking Beesands and Hallsands. Reeds (*Phragmites*) cover the northern area (Higher Ley), whereas the southern area (Lower Ley) is open water. The beach varies from 100m to 140m in width at high tide with a crest, which is generally at about +6.0m OD (± 0.5 m). Within the lagoon, there are extensive sheets of washover gravels derived from the barrier. The sedimentary sequence within the bay was described by Morey (1983) as: -

1. Light grey silty estuarine muds. The fauna suggests a salinity gradient with restricted water circulation behind a growing barrier or spit. The tidal entrance is probably in the southern part of the Lower Ley.
2. A thin brown organic silt with a sharp lower boundary, but passing upwards into fen peats.
3. Fen peats about 1.3m thick. An early reedswamp stage, gradually changes to a sedge - dominated fen community. The top peat has been dated at $1,813 \pm 40$ years BP and the bottom at $2,889 \pm 50$ years BP.
4. A layer of muddy sand, thickening seawards.
5. An upper layer formed by lacustrine muds of terrigenous detrital origin.

The development of the lagoon first started during the early Holocene, a transgressional shoreline of salt marshes, estuaries and ephemeral lagoons developed in a microtidal environment. It is unlikely that major barriers developed until the shoreline was close to its present position about 5000 years BP. Major accumulation of gravel can only occur where bedrock is below modern sea level and where overwashing can spread gravels across submerged infilled Holocene valleys. Without a substantial eustatic rise, there would have been insufficient space for gravels to accumulate except at Beesands and Slapton Sands. The constraints of coastal topography combined with the limited sediment input, play a major part in the development of the barrier beach and its closure (Morey 1976). Lateral movement of sedimentary material alongshore into the Slapton embayment means that the crest is able to keep pace with the rising sea level. Slapton is therefore acting as a sediment sink.

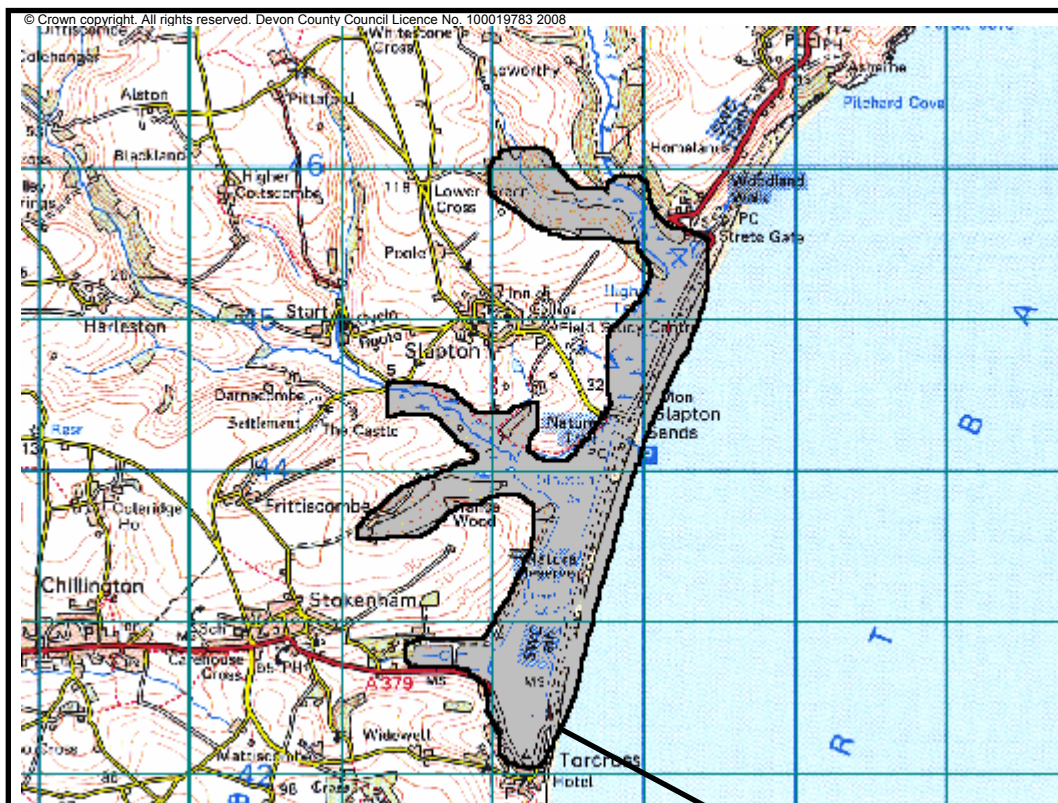
Suggested Questions

1. Using evidence in support, suggest the direction 'if any' in which the bar is growing.
2. What relationships can be seen 'if any' between the formation of the bar and the wave direction/energy?
3. Examine the beach material and identify the various pebble types present – what do they tell about the origins of the shingle bar?

LOCATION PLAN

SLAPTON LEY, SSSI SLAPTON, SOUTH HAMS

National Grid Ref: SX 826 441



Scale 1: 50,000



Site Locality

Located along
A379 at Torcross

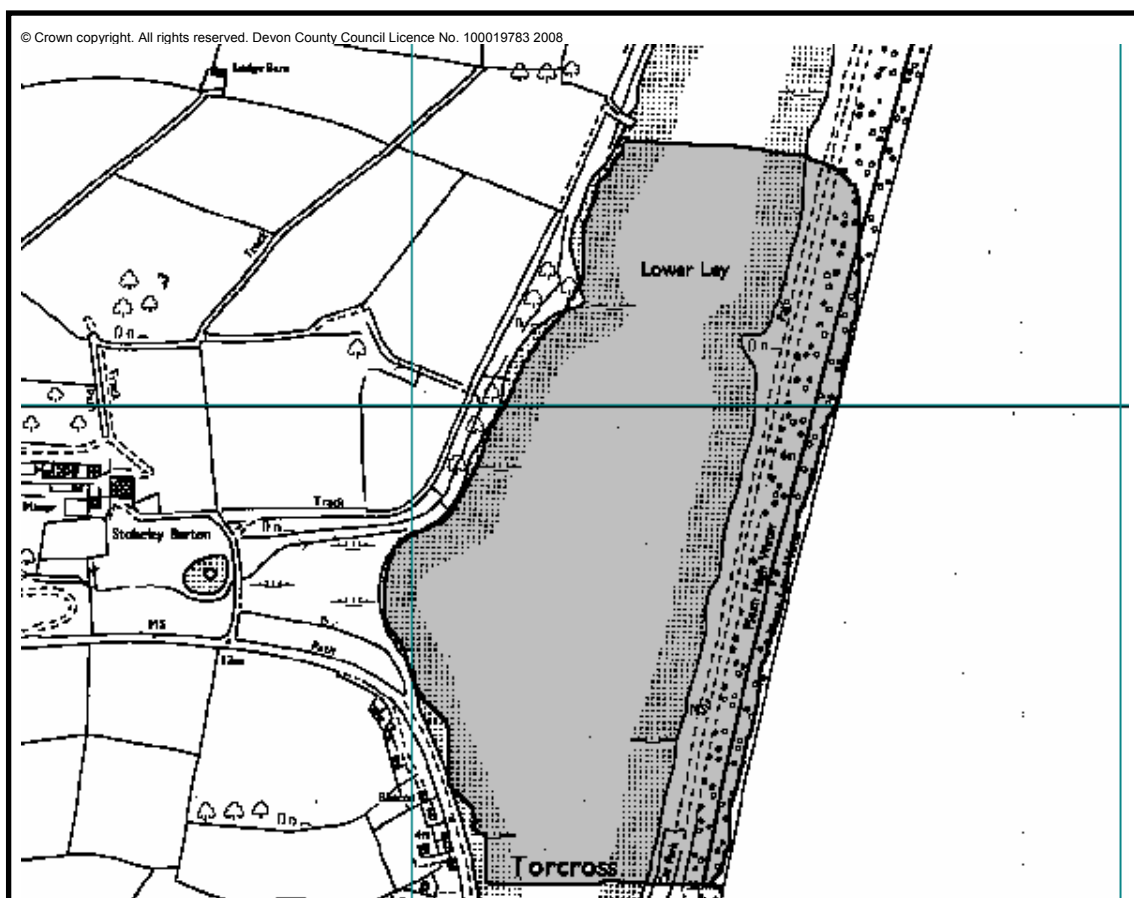
Parking and Access

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SITE PLAN

SLAPTON LEY SLAPTON, SOUTH HAMS

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Site Area

Scale 1: 10,000

Lower Ley

Main Points of Interest:

- Large eutrophic freshwater lagoon with alluvial deposits.
- Shingle barrier beach of flint, chert and quartz.

SLAPTON LEY

South Devon Heritage Coast Service



Slapton Ley, a natural fresh water lagoon separated from the sea by Slapton Sands, a shingle bar.

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The barrier beach at Torcross – note coastal defence works to protect the village