

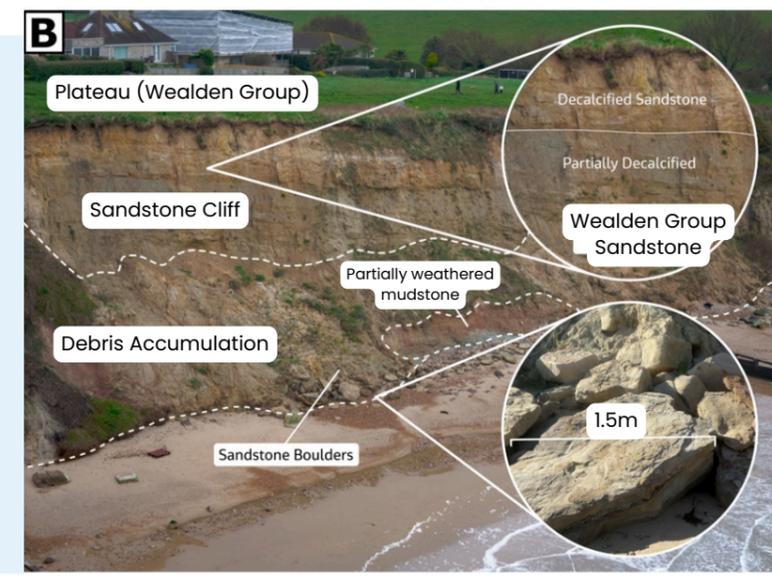
Walks & Talks 2026

North Swanage - 1 of 5 UK locations chosen to participate in the Environment Agency's Coastal Transition Accelerator Programme, chosen for their unique features and strong, engaged communities.

Today's walk will take us along Cliff Behaviour Units (CBU) 1-6 Map Section 1 looking at distinct segments of the cliff system, characterised by similar physical form, geology composition and cliff behaviour.

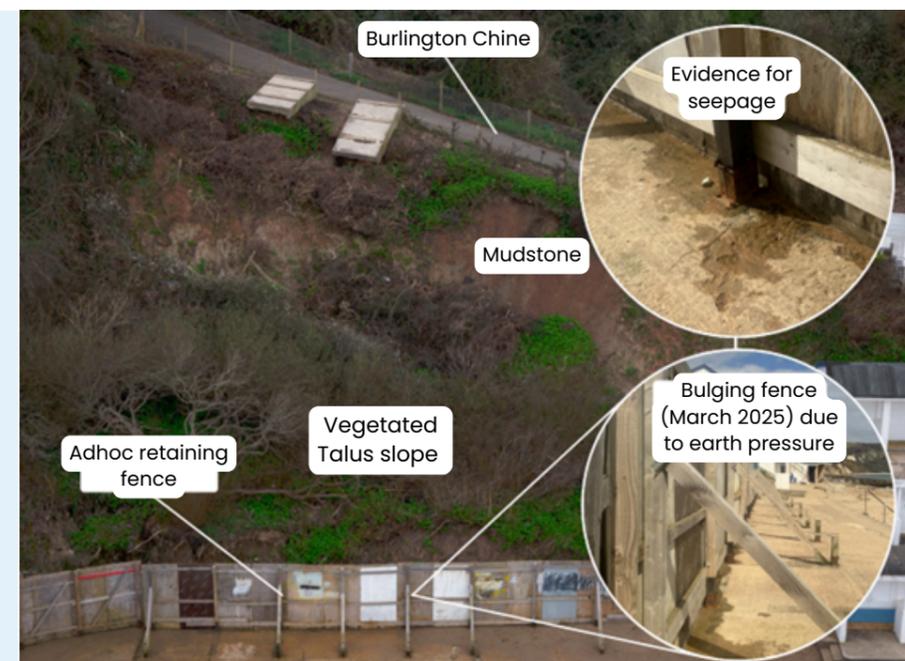
Sandstone instability process

- Sandstone: Relatively resistant to erosion, forms steep vertical cliffs. Rockfall failures possible but not susceptible to deep seated landslides or mudslides
- Cliff retreat in regular small increments
- Deep drainage and vegetation stabilisation likely ineffective.
- Surface water control beneficial
- With seawall in place cliff instability and recession will gradually reduce
- Barrier system needed to protect beach users below cliff



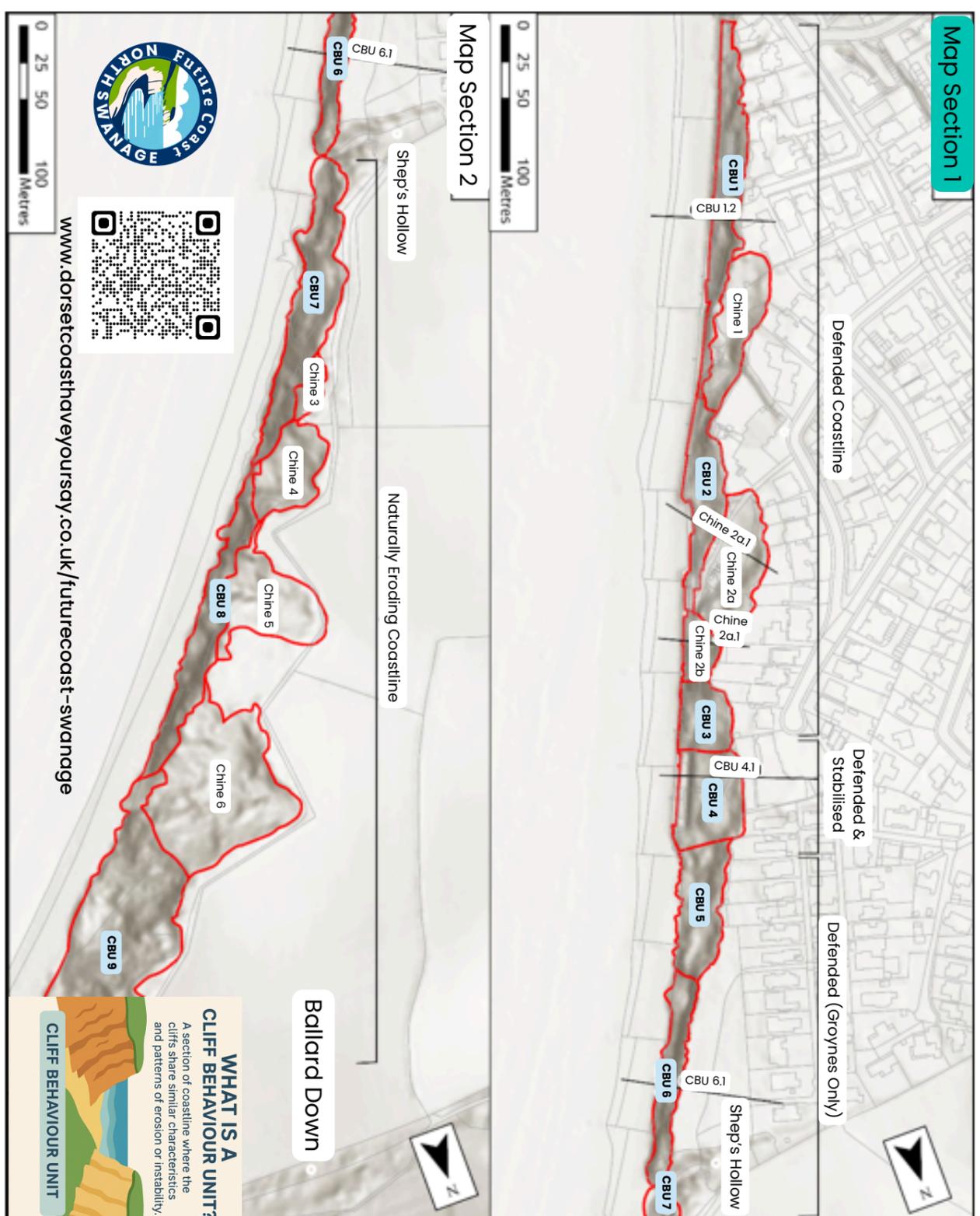
Mudstone instability process

- Mudstone: Relatively erodible and susceptible to deep seated landslides and mudslides when weathered and influenced by ground / surface water
- Cliff retreat can be in 10 m chunks (e.g. Pines Hotel 2012/13)
- Climate change (increased winter rainfall) will continue to cause instability and cliff recession
- Drainage potentially effective in places
- Vegetation stabilisation potentially effective in places



Handout prepared by Dorset Coast Forum for Future Coast North Swanage
Photo Credits: D.Picklesley/S.Parker/Jacobs

Cliff and Chine Behaviour Units



Legend

- Cliff and Chine Sections
- CBU and Chine Units
- Projected CBU Boundary

What are they: Distinct segments of cliff system, characterised by similar physical form, geology composition, and cliff behaviour

Why have they been defined: Enable definition of changing hazards along frontage and related appropriate adaptations

WHAT IS A CLIFF BEHAVIOUR UNIT?
A section of coastline where the cliffs share similar characteristics and patterns of erosion or instability.

CLIFF BEHAVIOUR UNIT

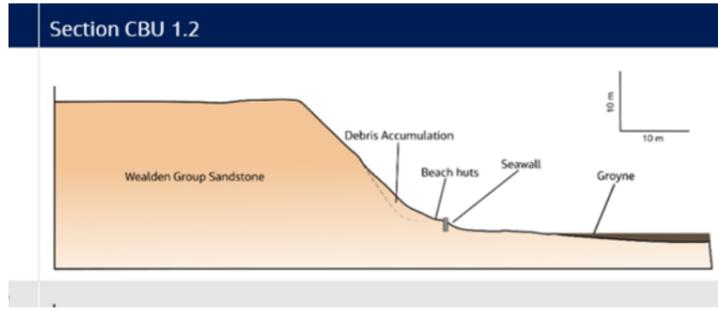
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CBU1 Sandstone beds dipping north

CBU1 starts roughly in line with first wooden beach huts - south of first timber groyne
 Scenario 2025: steep (30-60 degree) weathered sandstone cliffs, well-vegetated cliff face, rockfall scars evident on cliff face from historical failures, accumulation of talus at cliff base, loading at cliff top, surface water runoff over cliff edge

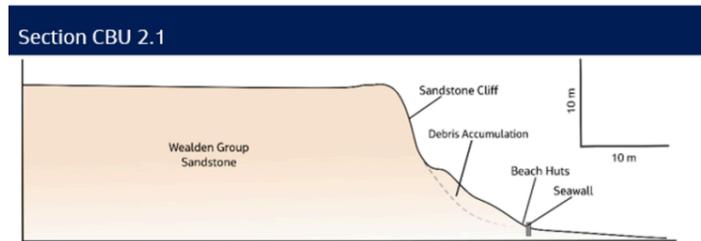


CBU1 ends in line with 4th timber groyne



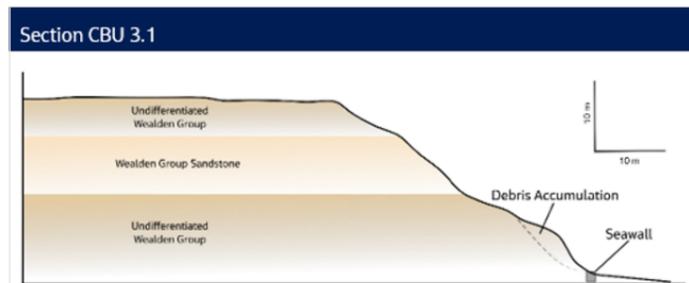
CBU2 Sandstone beds Wealden Group

CBU2 starts at 4th timber groyne by the coloured huts after Chine to Burlington
 Scenario 2025: steep (40 degree+) to near vertical weathered sandstone cliffs, debris accumulation at cliff top with bulging and seepage evident, well-vegetated talus slope



CBU3 layers of Mudstone & Sandstone

CBU3 starts after the Burlington huts and includes the stone apron (recently repaired by homeowner)
 Scenario 2025: densely vegetated steep slopes (20-40 degree) of undifferentiated Wealden Group mudstone and sandstone with a central band of sandstone, talus and landslide debris material remains slumped over the top of dilapidated structures at cliff toe from historical failures



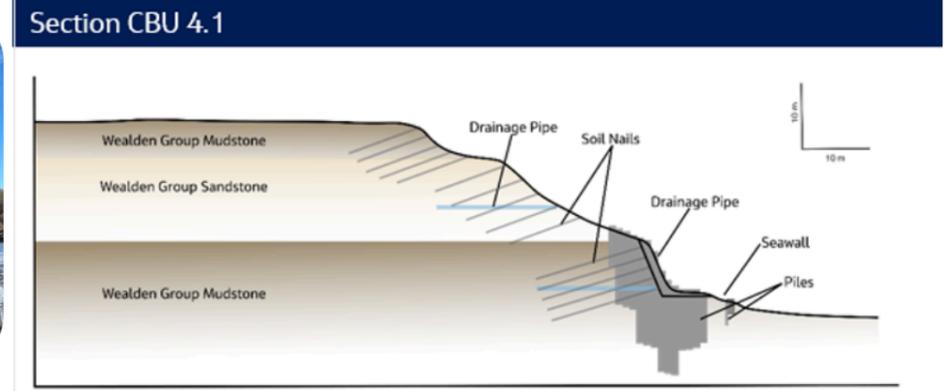
The Wealden Group itself is a sequence of Early Cretaceous sedimentary rocks (Berriasian to Aptian age) found in southern and south-eastern England, particularly in the Weald and Wessex Basins. These rocks are primarily paralic to continental in origin, meaning they were deposited in environments like:

- River floodplains
- Shallow, large lakes (lacustrine environments)
- Coastal lagoons
- Brackish mud-plains

The group is famous for yielding many fossils, including dinosaur remains like Iguanodon and Hypsilophodon, as well as dinosaur footprints and plant debris.

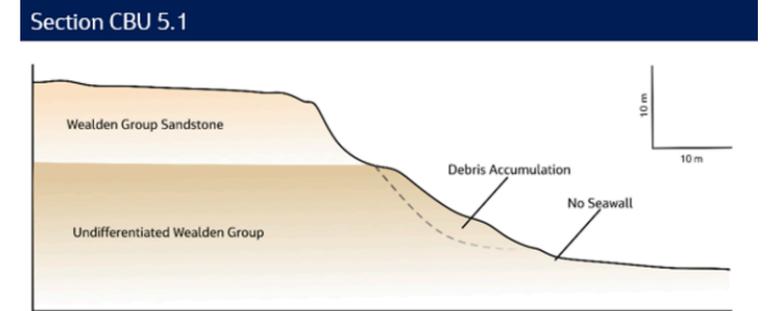
CBU4 layers of Mudstone & Sandstone - Pines Hotel scheme

CBU4 Scenario 2025: cliff stabilisation scheme completed in 2017 comprising concrete retaining wall with soil anchors and piling, slope drainage and soil nailing on upper cliff. Scheme is designed to stabilise the cliff in front of the Pines Hotel through 2055. North of the retaining wall, shallow slumping of accumulated debris may continue to occur due to saturation or loading



CBU5 Sandstone layer on top of Wealden Group

CBU5 starts after Pines scheme and seawall ends covers approximately 1 groyne bay and **finishes** just beyond next timber groyne. Section in front of Ballard Estate undefended. Scenario 2025: active erosion of the cliff face and debris, and recent failure scars evident. Vegetated wide landslide debris benches at mudstone dominant cliffs, and unvegetated talus and boulders at sandstone dominant cliffs



CBU6 layers of Sandstone

CBU6 starts just after 2nd timber groyne beyond seawall, continues to Sheps Hollow. Scenario 2025: steep to near vertical sandstone cliffs without protection of a sea wall, unvegetated cliff face exposed to surface weathering. Large sandstone blocks present along beach, with concrete blocks locally scattered below the cliffs which may provide some protection to the cliff toe from marine erosion. Valley incision at Sheps Hollow

