



South Wales RIGS Group Site Record

RIGS Description

SECTION A

General	South Wales
Site Name: Fan Dringarth Landslide	File Number: AH_46 / Site_ffgp_105
RIGS Number: 740	Surveyed by: Peter Brock
Grid Reference: SN 94300 19340	Date of Visit: 25th Sept 2010
RIGS Category: Scientific, educational	Date Registered:
Earth Science Category: Geomorphological, sedimentological	
Site Nature: Open upland moorland	Documentation prepared by: AJH
Unitary Authority: Powys CC	Documentation last revised:
OS 1:50,000 Sheet 160	Photographic Record:
OS 1:25,000 Explorer Sheet OL12	
BGS 1:50,000 Sheet 231	
<p>RIGS Statement of Interest:</p> <p>One of the most spectacular landslides in the whole Fforest Fawr Geopark and Brecon Beacons National Park. It is one of the least accessible and hence least known. It is visible from the Beacons Way as it runs along the mountain's ridge.</p> <p>The landslide is wholly within the Devonian age Brownstones Formation. The eastern side of the summit of Fan Dringarth at an elevation of 500m OD (1600ft) has broken away and some of it now forms a great bulge of rocky debris looming above the Afon Dringarth at the head of Ystradfellte Reservoir. The landslide is approximately 1km long, and descends over a slope angle of c. 13° to 390m OD. The bedrock dips at a similar angle. but strikes at 150°, oblique to the downslope direction (110°).</p> <p>The landslide head is marked by a distinct, double arc-shaped, low (c. 5- 10 m) headwall, below which are back-tilted blocks. Faults and tension cracks occur on the landslide, but mostly it comprises comparatively little altered, downslope-displaced bedrock. The lateral margins of the landslide are marked in places by bordering faults forming steep-sided gullies. The northern differs from the southern margin, with small lobes of landslide debris indicating downslope rather than down-dip movement. In places the former also has a sharp-crested ridge several metres high. The toe area comprises thrust ridges partly developed in thick Pleistocene sediments. This landslide is best classified as a translational slide (Varnes 1978 – see Other Comments).</p>	

Geological setting/context:

This landslide is located on the east-facing slope of Fan Dringarth. Running along the adjacent mountain ridge is the Beacons Way, a long distance footpath. The toe of the landslide is in the valley of the Afon Dringarth, approximately at the north end of Ystradfellte Reservoir.

Fan Dringarth is an ancient landslide, not shown on the OS map (ornament appears as rock outcrop), although it is mapped on the BGS geological map (BGS 1979). Some boulders and bedrock still exposed although most of the landslip area is grassed over, suggesting that it may have stabilised.

About 400 m south of Fan Dringarth summit, the scarp forms a relatively shallow 'cirque-like' hollow facing ENE. No moraine occurs in the hollow, although its altitude and orientation are similar to sites nearby that certainly nurtured glaciers (Shakesby 1992). The form of the hollow and the presence of solifluction deposits on its floor suggest that a perennial snowpatch existed here, but no glacier.

The landslide is wholly within the Devonian age Brownstones Formation, which comprises red, brown and purple fluvial medium- to coarse-grained sandstones with red mudstone interbeds. In the headwall scarp of the landslide thick sandstone beds are exposed, some exhibiting sedimentary and syn-sedimentary deformation structures with possible slump structures.

The landslide is probably due to the slope not being in equilibrium following the end of the Dimlington Stadial, the last time ice covered this area. Shakesby and Matthews (1996) have shown that Fan Dringarth, unlike some other high peaks of the Brecon Beacons and Fforest Fawr escarpments, did not experience niche glaciation during the Loch Lomond Stadial. However the presence of solifluction deposits within the upper part of the landslide suggest that the failure occurred before the onset of the climatic amelioration into the Holocene. Thus, the landslide may have been initiated as a response to immediately post-glacial slope readjustment and stabilisation following a reduction in lateral stresses after the ice in the valley of the Afon Dringarth melted. This landslide may have been stable throughout the Holocene.

It may be that some rock has been removed to be used as building material.

References:

British Geological Survey (1979). *Merthyr Tydfil. England and Wales Sheet 231. Solid and Drift Geology. 1:50,000*. British Geological Survey, Keyworth, Nottingham.

Shakesby, R.A. and Matthews, J.A. (1996). Glacial activity and paraglacial landsliding in the Devensian Lateglacial: evidence from Craig Cerrig-gleisiad and Fan Dringarth, Fforest Fawr (Brecon Beacons), South Wales. *Geological Journal*. 31, p.143 - 157.

Shakesby, R.A. (1992). *Classic Landforms of the Brecon Beacons. Classic Landforms Guide No. 13*. Geographical Association. Sheffield. 48 pp.

Varnes, D.J. (1978). Slope movement types and processes. In: Schuster R.L. and Krizek R.J. (Eds.). *Landslides, analysis and control*. Transportation Research Board Special Report No. 176, National Academy of Sciences. p.11–33.

SECTION B

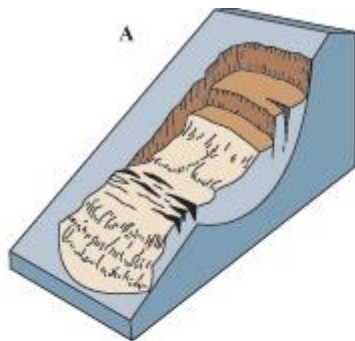
PRACTICAL CONSIDERATIONS: Please score Accessibility and Safety Red Amber or Green			
Accessibility:			X
Comment: Open Access Land			
Safety:		X	
Comment: Uneven ground			
Conservation status: Site is within Brecon Beacons National Park otherwise there are no known conservation designations of this RIGS			

OWNERSHIP/PLANNING CONTROL: Owner/tenant: ?Brecon Beacons National Park Authority Planning Authority: Brecon Beacons National Park Authority Planning status/constraints/opportunities: There are no known planning constraints or opportunities
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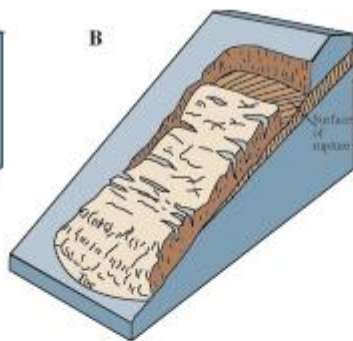
CONDITION, USE & MANAGEMENT: Present use: Open upland moorland Site condition: ?Stabilised landslide? Potential threats: Site Management:
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SITE DEVELOPMENT: Potential use (general): Potential use (educational): Possible to highlight it on any future "Beacons Way" interpretative leaflet
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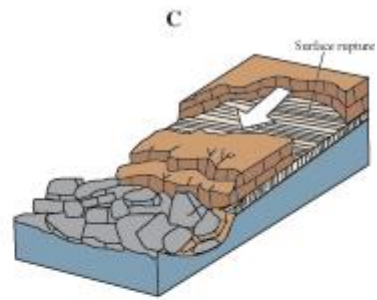
Other comments:



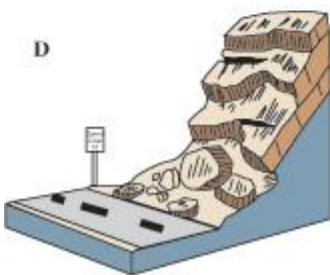
Rotational landslide



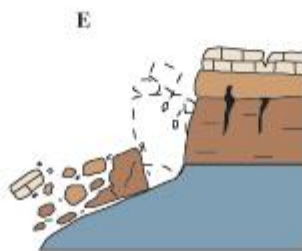
Translational landslide



Block slide



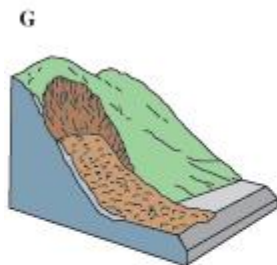
Rockfall



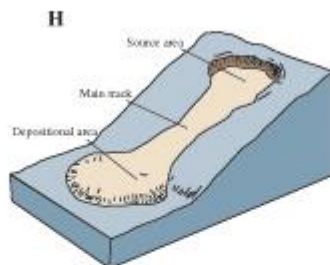
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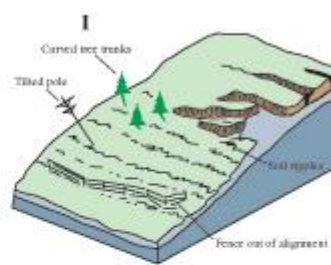
Debris flow



Debris avalanche



Earthflow



Creep



Lateral spread

Simplified Varnes (1978) classification – Fan Dringarth landslide is primarily Type B – Translational Landslide.

Photographic Record

Insert photographs. Use separate sheet if required

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Figure 4. Vertical aerial photograph of the Fan Dringarth landslide. The headwall area lies near the top of the photograph. The length of the photograph represents about 1.2 km on the ground. © British Crown Copyright 1995/MOD. Reproduced with permission

Aerial photograph of the landslide at Fan Dringarth showing the main features (from Shakesby and Matthews 1996) – two-distinct scarp features at head of landslide; and area of small back-tilted rotational blocks; the main translational landslide; the tone zone pushing up an arcuate ridge of late Devensian glacial deposits.



View SE looking downslope showing southern lateral margin of landslide



View NE across zone of depletion



View northwards across north end of headwall scarp – note how vegetated the stabilised landslide has become.



View north along headscarp showing vegetated surfaces and backtilted blocks on right



Dipping sandstone beds of Brownstones Formation exposed in headwall scarp





Hummocky ground and back-tilted blocks in zone of depletion



Southern margin of landslide



Exposed beds of Brownstones Formation in headwall scarp



Evidence of sedimentary structures



Possible syn-sedimentary deformation - ? slumping

