

---

## Bwrdd Arthur RIGS site

NRW RIGS no. 234 [SH 58631 81457]

[GeoMôn Global Geopark original webpage](#)

### RIGS Statement of Interest:

Bwrdd Arthur is probably the best place in Anglesey to show the geomorphology of a limestone pavement in the context of the island's extensive Carboniferous Limestone outcrop. Its elevation gives commanding views of most of the limestone terrain of eastern Anglesey, including Puffin Island and Tandinas Quarry, and the nationally important Great Orme's Head. In addition to the salient features of limestone pavement geomorphology, the site shows the importance of aspect, exposure and grazing regime in pavement development. Historical interest is provided by the remains of an ancient hillfort constructed from the clints. Although the pavement is not a prime geomorphological example, in a North Wales context, the site has outstanding aesthetic appeal and educational potential.

**Geological setting/context:** The British Isles contains some of the most important areas of limestone pavement in the World. In the United Kingdom there are some 3,000 hectares of these rare and endangered geomorphological features and habitats. The largest areas of pavement occur in the Republic of Ireland (notably the Burren) and in northern England, although small pockets also occur in Wales, Scotland and Northern Ireland. There is no universally agreed definition of 'Limestone Pavement'. Internationally, however, the term is accepted for a landform assemblage which includes limestone blocks (clints) separated by joints opened and enlarged by solution (grykes), and with a wide range of surface solution forms on both clint tops and gryke sides. In Britain, limestone pavements have often been defined as 'limestone outcrops which have been stripped of any pre-existing soil or other cover by some scouring mechanism, generally but not exclusively, glacial scour' (Goldie, 1994). Most pavements in the British Isles occur on Carboniferous Limestone, although some of the Scottish examples are developed on Dalradian (Precambrian) and Cambrian limestones. The Carboniferous Limestone outcrops of Wales host about 50 areas of pavement, mostly less than half a hectare in size, and located in four main centres. Perhaps least well known are the small pavement areas of eastern Anglesey, many of which are covered with hazel scrub or ash woodland, or concealed beneath dense gorse. More prominent are the limestone pavements which are found in the Llandudno district, for example on the Great Orme's Head. A third centre lies in Denbighshire while a fourth is centred on the Brecon Beacons. Other more disparate examples occur in the Vale of Glamorgan and in Pembrokeshire. Not all limestone pavement is the same, and there is great variety even within Wales. Pavement characteristics depend on the thickness, composition and structure of the limestone beds themselves, on past and present chemical and biological processes, on the altitude and exposure of the sites, the efficacy and nature of post-glacial erosive processes, and on the extent to which the pavements have been grazed. Limestone pavement in Britain is a rare and threatened geomorphological feature and habitat. The destruction of limestone pavement has been caused mainly by extraction of clints for use in garden rockeries. This destruction commenced in the 1870s and still occurs despite special conservation measures afforded by Limestone Pavement Orders (LPO) detailed in Section 34 of the Wildlife and Countryside Act 1981. Once destroyed, limestone pavement is gone forever. Pavements are also affected by a lack of appropriate management, especially by overgrazing. Although some of the Welsh pavements are notified as SSSI and NNR for their biological features, none has been selected in Wales by the Geological Conservation Review for protection as geological/ geomorphological SSSI (the best GCR examples are in northern England). Because of the world-wide rarity of the limestone pavement resource, and because of continuing threats, the best examples of limestone pavement in Wales are being registered as Regionally Important Geological/ geomorphological Sites (RIGS).

**Network context of the site:** Bwrdd Arthur RIGS is one of five [revise as req.] limestone pavement RIGS on Anglesey. Although none of the Anglesey sites matches examples found elsewhere in north-east Wales, in terms of extent and geomorphological quality, they demonstrate between them the salient features of limestone pavement development and a variety of other complementary attributes. Bwrdd Arthur RIGS is probably the best place on Anglesey to see limestone pavement features from a vantage point that takes in large tracts of the Carboniferous geology of eastern Anglesey and

beyond. Benllech RIGS and Plas Lligwy RIGS provide good examples of wooded limestone pavement and a variety of historical (and prehistorical) structures constructed from pavement materials. Moelfre RIGS shows some of the deepest and most intricate solution features seen in the Anglesey pavements, and is representative of the coastal, open-aspect pavements.

## **References:**

COUNTRYSIDE COUNCIL FOR WALES (2000). Our fragile heritage – limestone pavement in Wales.

BUREK, C., CONWAY, J.S. & CORBELLI, D. (1997). Limestone pavements, insoluble residue and soil formation. CCW Contract Science Report 295, 42pp.

CORBELLI, D. (1998). A morphological and geochemical analysis of the limestone pavements of Wales with particular reference to insoluble residue content and soil development. Unpublished M.Sc. thesis, University College Chester.

DEACON, J. (1997). Identification of limestone pavements in Wales and their flora. CCW Contract Science Report 159, 113pp.

GOLDIE, H.S. (1994). Protection of limestone pavement in the British Isles. In: O'Halloran, D., Green, C., Harley, M., Stanley, M. & Knill, J. (eds) Geological and Landscape Conservation. Proceedings of the Malvern International Conference 1993. The Geological Society, London, 215–220.

UK GOVERNMENT (1995). Biodiversity: the UK Steering Group Report. Volume 2. HMSO, London, 246–247.

WARD, S.D. & EVANS, D.F. (1976). A botanical survey and conservation assessment of British limestone pavements. Volume I. The limestone pavements of Wales. Institute of Terrestrial Ecology, Bangor.