

A New Welsh Super Mountain?

What on earth is a Super Mountain?? There is no dictionary definition of this and it is a phrase composed purely by ourselves. So what do we, that is G and J Surveys, mean? Until the publication of Ordnance Survey 1:50000 (Landranger) maps in the early 1970s we predominantly used imperial measurements for both distance and height; this despite the kilometre-based National Grid. British hills and mountains were measured against key benchmark heights, notably 1000, 2000 and 3000feet – good solid round numbers! However, once the metric system was introduced on Ordnance Survey maps, these benchmark heights became 304.8, 609.6 and 914.4metres, hardly memorable numbers! So if we go metric to “define” mountains, the obvious benchmark height is 1000 metres. That’s fine for those who live in Scotland where there are 137 mountains reaching the 1000m mark, but what about south of the border? Well, there are only four mountains over this height and lucky Wales has them all. So, for rarity value we have adopted the phrase Super Mountain.

What are the Welsh Super Mountains? Of course, heading the list is Snowdon (1085m) followed by the adjacent Crib y Ddysgl (1065m). Following closely behind and in the north of the Snowdonia National Park are Carnedd Llewelyn (1064m) and finally Carnedd Dafydd (1044m). Does anyone care? Well yes, quite a few people do. For example Wales plays host to many mountain events, one familiar to tourists on the Snowdon Mountain railway being the Snowdon Race. But, another equally famous is the Welsh 1000m Peaks Race, where competitors visit all the Welsh 1000m summits within a given time limit. These international events draw competitors from far and wide.

So there it is, but there is one mountain that almost creeps into the list and that is Glyder Fawr (999m)! Could Glyder Fawr possibly exceed 1000m and be the 5th Super Mountain? To answer this question we need to consider how the heights of mountains are generally measured these days. Ordnance Survey measures heights using a technique called photogrammetry. High resolution aerial photographs are taken and are used to create three-dimensional images of the countryside. Heights of mountains can then be measured from these images. However, these measured heights are only accurate to +/-3m, which, for most practical applications, is good enough, but this means that Glyder Fawr lies probably between 996m and 1002m, and therefore is certainly worth checking out?

Is there really a chance that Glyder Fawr can exceed 1000m? Is there any precedence for measured mountain heights being up to 3m different from those recorded on Ordnance Survey maps? Well the answer to the latter question is “Yes”.

Recently, on 24 June 2010, we re-surveyed Tryfan in Snowdonia. This mountain’s height is recorded as 915m on Ordnance Survey Maps, but with more accurate survey-grade GPS technology, we showed its height to be 917.5m. That’s 2.5m higher than previously thought!! Glyder Fawr only needs one more metre to reach 1000m!

Surveying Tryfan



There is only one way to find out if Glyder Fawr is over 1000m, and that is to go and survey it accurately. That is exactly what we did on 16 August 2010. We were accompanied by Carey Davies, assistant editor from TGO Magazine, Stephen Edwards director of media company CREAD.cyf and Peter & Kate Williams from the Gorphwysfa Club. The weather was favourable and we set off from Ogwen at about 09.30am following the well-maintained footpath leading past the side of Llyn Idwal, steeply up the mountain side to pass under the Devil's Kitchen, a notorious deep gash in the rocks, and finally out onto the ridge joining Y Garn to Glyder Fawr. Another 300m slog up the scree-covered mountainside took us to the summit rocks of Glyder Fawr. This whole area from Glyder Fawr leading to Glyder Fach 1.5km to the East is fascinating to explore, a "lunar landscape" of weird-shaped outcrops set in a sea of shattered rocks. The word Glyder is derived from the Welsh word "Cludair" meaning "Heap, stack or pile (of stones)" – it certainly lives up to its name!

Once the summit position had been identified using optical equipment, the survey Grade GPS antenna was strapped securely to the side of the summit rock and to be level with the top. The GPS receives signals from the satellite constellation orbiting 22000km above the earth and from these signals it is able to calculate its position. So the instrument was switched on and data recorded for 4 hours, during which time over 500 individual height readings were collected and this allowed an accurate final result for the height of Glyder Fawr to be calculated. Time to pack up and return to Ogwen!

The Survey team on Glyder Fawr



The survey is still not finished. In spite of the sophistication of the equipment, the collected GPS data still needs to be processed on a Personal Computer through dedicated surveying software using "correction data" available from the Ordnance Survey website to give the final accurate result. This we did later that evening.

So what was the height of Glyder Fawr? It is 1000.8metres and therefore Glyder Fawr is definitely the 5th Welsh Super Mountain!! The result has been forwarded to Ordnance Survey who has accepted it as the new height and will change the maps accordingly. Of course Glyder Fawr is still the same mountain and in that sense nothing changes, but it does have a new status. Perhaps of more importance is the implication of the new height for the "Fell Running" community. One of the tasks of the Gorphwysfa Club, hence the involvement in the survey of Pete and Kate Williams, is the organisation of the Welsh 1000m Peaks Race. This event takes in all the 1000m mountains in Wales. Now the organisers will have to decide how to embrace Wales' new Super Mountain. The new height for Glyder Fawr also impacts the UK Prominent Peaks classification as devised by the UK Metric association.

Myrddyn Phillips, John Barnard, and Graham Jackson @ G and J Surveys