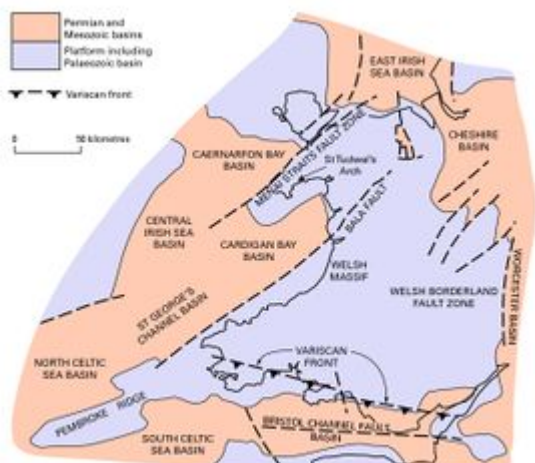


# Mesozoic, introduction, Wales

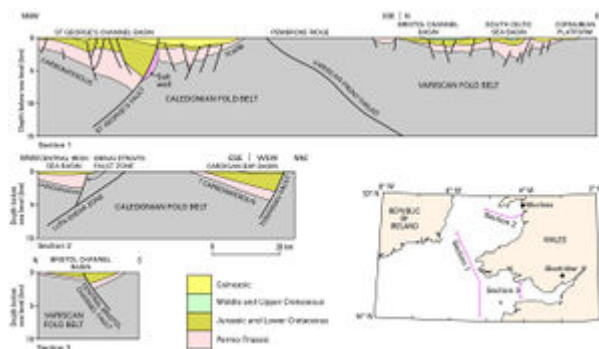
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**From: Howells, M F. 2007. [British regional geology: Wales](#). Keyworth, Nottingham: British Geological Survey.**



Mesozoic basins in relation to the Welsh Palaeozoic massif (after Tappin et al., 1994). P916198.



Cross-section illustrating the Mesozoic geology around Wales (after Tappin et al., 1994). P916199.

Following the Variscan orogeny and the concomitant continental reorganisation, Northern Europe lay deep within the newly formed supercontinent of Pangaea, and was straddled by one of the largest deserts in the Earth's history. The desert lay close to the Equator within a belt of easterly trade winds.

In contrast to the largely compressional stress during the Variscan orogeny, the area was subjected to tensional stress and the main physical features that formed in early Permian (Late Palaeozoic) times persisted for most of the Mesozoic. The most significant of these features were fault-controlled depositional basins that were separated by massive blocks or horsts and were markedly different from the basins that had previously influenced Upper Palaeozoic sedimentation. Such basins are situated off the coasts of Wales ([P916198](#)) and contain thick sequences of Mesozoic strata, which became targets as possible reservoir rocks during oil and gas exploration. To the west of Wales, the Central Irish Sea, Cardigan Bay, St George's Channel and North Celtic Sea basins are predominantly

north-east- to south-west-trending structures ([P916199](#)). Farther south, the South Celtic Sea and Bristol Channel basins are orientated more closely east-west. The basins were initiated along normal faults, which profoundly influenced early sedimentation.

The St George's Channel Basin is bound on its south-east margin by the St George's Channel Fault and, farther to the south-east, by the seaward extension of the Bala Fault. The Cardigan Bay Basin is bound to the east by the Tonfannau Fault. The asymmetry of the infill faulted on its northern side. The gross unconformity at the base of the Mesozoic sequence, with the local absence of both Permian and lower Triassic, reflects prolonged erosion of the uplifted Palaeozoic rocks. At the end of Permian times, a mass extinction, when 30 to 50 per cent of all orders and families were lost, is considered to be the most important event in the biotic record. Its cause, whether sea level change, salinity, temperature, mega-volcanism, asteroid impact or other, is still a matter of debate. The evidence of the event in northern Europe is sparse, but when more permanent marine deposition returned in late Jurassic times the Palaeozoic flora and fauna were replaced by Mesozoic species.

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