

Carboniferous, Northern Ireland

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Mitchell, W I (ed.). 2004. [The geology of Northern Ireland-our natural foundation.](#) Geological Survey of Northern Ireland, Belfast.

W I Mitchell

Introduction

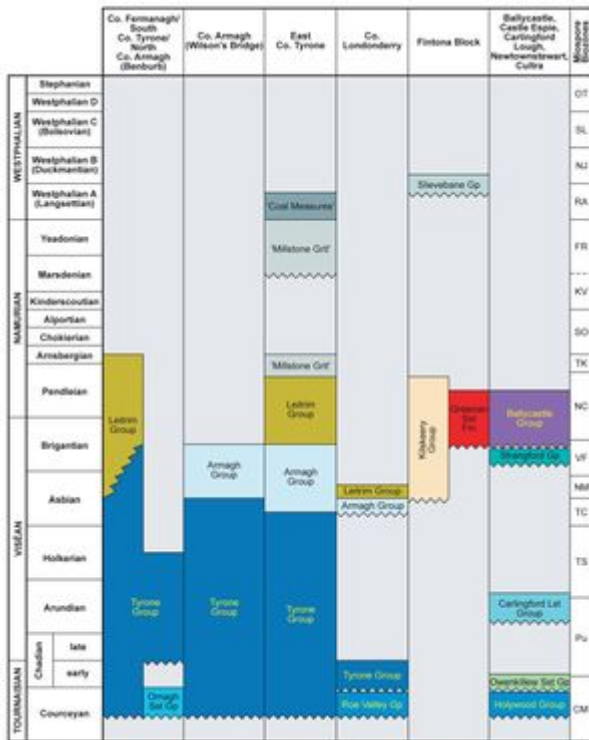


Position of the continents in the early Carboniferous (c. 350Ma (1)) (P947814)



At the southern margin of the continent of Laurussia there was a gradual change from a shallow marine environment to areas of coal-forming coastal swamps and deltas. These stretched on a continental scale from eastern European Russia, across western Europe, Britain and Ireland and down the eastern states of North America. The continuous northward movement of Gondwanaland and collision with Laurussia created the final and climactic phase of the Appalachian-Variscan Orogeny. The scene was now set for the creation of the super continent of Pangea.

Position of the continents in the late Carboniferous (c. 300Ma (17)). (P947838)



Distribution and classification of Carboniferous rocks in Northern Ireland. (P947927)



Geological map of Northern Ireland showing the Carboniferous outcrop. (P947815)

At the end of the Devonian, Ireland lay on the southern margin of Laurentia that stretched from the Appalachians, northeast across Britain into Fennoscandia ^[1] (P947814). Coastal alluvial plains merged into shallow tropical waters at the edge of an inhospitable desert landscape. Although marine conditions had reached the southern tip of Ireland at the Devonian-Carboniferous boundary (c.355Ma) the succeeding 10Ma passed before the transgression reached the north of Ireland in the late Tournaisian ^[2]. This is only the first event in the turbulent 65Ma history of the Carboniferous in Northern Ireland (c.355-290Ma). Throughout the succession there is evidence of intermittent tectonic activity. Northern Ireland was not an area of quiet sedimentation, as previously envisaged, but straddled a zone of dextral strike-slip comparable to the Midland Valley of Scotland and the Maritimes Basin in Atlantic Canada ^[3]. Thus, by the end of the Carboniferous, when the Variscan Orogeny had reached a maximum intensity, all of Ireland was now land and the Variscan Mountains stretched across the northern part of the country (P947838).

Carboniferous rocks in Northern Ireland were deposited close to the northern margin of the "Northern Province" ^[4] and reflect the proximity of land at all times. Their cumulative thickness of 7000 m is represented mainly by Lower Carboniferous (Tournaisian, Viséan and early Namurian) rocks in Co. Fermanagh, the Fintona Block, peripheral sections at Coalisland and isolated basins such as Newtownstewart ([P947927](#)). The most continuous outcrop and succession extends from Co. Fermanagh and south Co. Tyrone into north Co. Armagh ([P947815](#)). The Carboniferous outcrop in the eastern part of Northern Ireland is reduced to outliers at Ballycastle, Cultra, Castle Espie and Carlingford Lough.

[Litho- and biostratigraphy](#)

[Eastern Carboniferous outliers of Ballycastle, Cultra, Castle Espie and Carlingford](#)

[Ballycastle](#)

[Cultra](#)

[Castle Espie](#)

[Carlingford](#)

[Co. Londonderry](#)

[Fintona Block](#)

[Tempo-Lisbellaw Segment](#)

[Kilskeery Group \(Table 7.5\)](#)

[Milltown Segment](#)

[Greenan Sandstone Formation \(Table 7.1\)](#)

[Slievebane Group \(Table 7.6\)](#)

[Co. Armagh](#)

[Tyrone Group](#)

[Armagh Group](#)

[East Co. Tyrone](#)

[Tyrone Group \(Table 7.7\)](#)

[Armagh Group](#)

[Leitrim Group](#)

[Millstone Grit](#)

[Coal Measures](#)

[Newtownstewart Outlier](#)

[Co. Fermanagh-south Co. Tyrone](#)

[Derrygonnelly-Marble Arch-Cuilcagh Mountain](#)

[Tyrone Group](#)
[Leitrim Group](#)

[Lisnaskea](#)

[Tyrone Group](#)
[Leitrim Group](#)

[Fivemiletown-Clogher-Aughnacloy-Benburb](#)

[Fivemiletown-Clogher](#)

[Tyrone Group](#)

[Aughnacloy](#)
[Benburb](#)

[Kesh-Omagh](#)

[Omagh Sandstone Group](#)
[Tyrone Group](#)

[Palaeogeographical and environmental reconstruction](#)

[Late Courceyan \(CM Biozone\)](#)
[Chadian \(Pu Biozone\)](#)
[Arundian](#)
[Holkerian](#)
[Early Asbian](#)
[Late Asbian](#)
[Brigantian-Arnsbergian](#)
[Late Namurian-Westphalian A/B](#)
[Late Carboniferous-Early Permian](#)

References

1. [↑](#) Osborne, R, and Tarling, D H. 1995. *The Historical Atlas of the Earth (A Visual Exploration of the Earth's Physical Past)*. Viking. Penguin Books Ltd., London.
2. [↑](#) Clayton, G, and Higgs, K. 1979. The Tournaisian marine transgression in Ireland. *Journal of Earth Sciences of the Royal Dublin Society* 2, 1-10.
3. [↑](#) Calder, J H. 1998. The Carboniferous evolution of Nova Scotia. *In*: Blundell, D J, and Scott, A

C. (eds.). *Lyell: the Past is the Key to the Present*. Publication of the Geological Society, London, No. 143, 261–302.

4. ↑ Sevastopulo, G D, and Wyse Jackson, P N. 2001. Carboniferous (Dinantian). *In*: Holland, C. H. (ed.). *The Geology of Ireland*. Dunedin Academic Press, Edinburgh.

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