The Harvey-Hopewell Fault, New Brunswick

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The Harvey-Hopewell Fault of southeastern New Brunswick is a major break that has an on-land northeasterly strike-length of 90 kilometres. Previous workers traced the fault southwest of the Petitcodiac River where it is seen to juxtapose the northwestern side of the Carboniferous Cumberland Subbasin against the mainly Proterozoic Caledonia Uplift. Published documents have described only the late Carboniferous movement on the fault as either northwest-directed thrusting or sinistral transcurrence. Recent studies have succeeded in following the continuation of the fault to the northeast from the Petitcodiac River to Port Elgin, where it marks the northwestern margin of the Carboniferous Sackville Subbasin with the older crystalline rocks of the Westmorland Uplift.

In the Early Carboniferous, during Windsor Group and Mabou Group time, the Harvey-Hopewell Fault acted as a down-to-the-southeast extensional or growth fault accommodating the deposition of about 2 kilometres of Windsor-Mabou section in the Cumberland and Sackville subbasins. Late Carboniferous (post-Boss Point Formation) inversion of the Cumberland and Sackville subbasins was accomplished by northwest-directed reverse displacement on the Harvey-Hopewell Fault. Comparison of clast compositions in Mabou Group conglomerates with adjacent crystalline rocks in the Caledonia Uplift source area suggests little transcurrent offset on the fault. The parallel and subsidiary Dennis Beach Fault shows Mesozoic extension implying that the Harvey-Hopewell system was reactivated during the break-up of Pangea.

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