

The Tobeatic Fault Zone - Post-Visean Sinistral Fault Movement in Southern Nova Scotia

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The Tobeatic Fault Zone (TFZ) comprises a zone of shear extending from the Wedgeport area of extreme southwestern Nova Scotia, northeasterly through the Vaughan-New Ross district where it cuts granitoid rocks of the South Mountain Batholith (SMB), to connect with post-Visean fault systems defining the northern limits of the Shubenacadie Basin. Geological, geophysical and paleomagnetic evidence points to approximately 110 kilometres of post-Visean sinistral displacement on the TFZ. With a strike length of up to 700 km including possible extension into the Gulf of Maine, the Tobeatic Fault Zone is of considerable significance to the understanding of the tectonic history of southern Nova Scotia.

Reconstruction realigns the Shubenacadie and Windsor Basins, creates an elliptical plutonic complex comprising the

SMB, the Musquodoboit Batholith and the Liscomb Complex, and merges areas of Bouger gravity lows and radiometric highs in southern Nova Scotia. It also realigns Meguma slate belts of anomalous radio-element character.

The reconstruction juxtaposes and explains the close similarity of igneous rocks within the north-central SMB and the western Liscomb Complex. It also provides an important genetic rationalization for the distribution of many metallogenic domains of granophile character along the trace of the TFZ.

Stratigraphic evidence limits the movement history of the TFZ to post-Visean time, whereas tenuous paleomagnetic data provide a younger limit of pre-Triassic. Fault deformation of the firmly dated Wedgeport Pluton documents movements younger than 315 Ma, i.e., Westphalian or younger.