

### **Implications of Superimposed Shear Zones in Shelburne-Barrington Area**

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Six generations of deformation have been recognized in the study area, two pre-metamorphic and four post-metamorphic. Upright tight folds (F2) have been interpreted from the bedding plane distribution. Axial planar slaty cleavage or schistosity (S1) is cogenetic with the folding. The F2 deformation is recognized from the regional crenulation cleavages (S2). The S1 and S2 planes are overprinted by lower amphibolite metamorphism.

Post metamorphic deformations are characterized by variable shear along bedding planes. Dextral strike-slip faults (F3) are reactivated by sinistral faults (F4). Dextral faults tend to show ductile behaviour. Both ductile and brittle behaviour is seen within the sinistral strike-slip faults. These faults (F3 and F4)

clearly affect the porphyroblasts and regional crenulation cleavages, indicating that they are post-metamorphic. A new foliation is developed within the fault zone. Subvertical striations occur on bedding-parallel slickenside planes (F5) and overprint sinistral strike-slip faults. Finally, kink-bands (F6) and the northwest-trending faults overprint all of the above structures. The northwest-trending faults have been interpreted as being a product of deformation as are the kinkbands.

Faults related to F3, F4 and F5 generally strike NNE and are numerous throughout the area. They profoundly influence the regional structure and merit more attention than they generally receive.