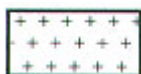
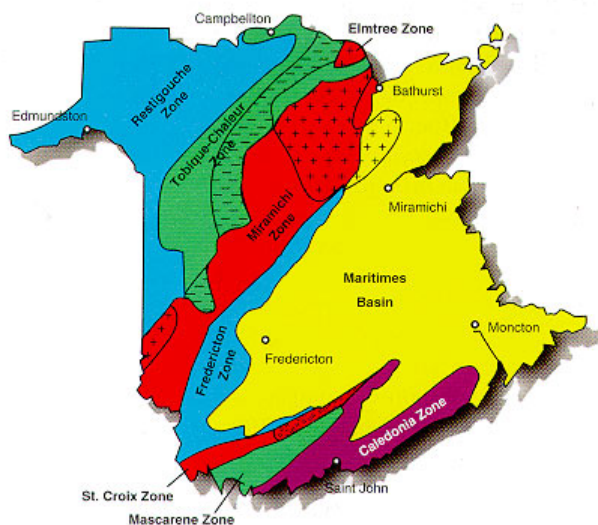


## Stratbound Massive Sulphide Deposits



### Miramichi and Elmtree Zones

Zn, Pb, Cu, Ag Deposits

- Host Rocks: Middle Ordovician mudstones within felsic volcanoclastic and volcanic pile
- Tectonic Setting: Ensialic margin of a back-arc rift basin
- Genetic Model: Brunswick type (i.e., brine pool model analogous to Atlantis II Deep)
- Ore Controls/Guide to Exploration: Submarine volcanoclastic debris flows, "quartz-augen-schist", syndepositional faults, Fe-rich chloritic mudstones, Na<sub>2</sub>O + K<sub>2</sub>O depletion in footwall alteration
- Examples: Brunswick No. 12: over 100 000 000 t of 12% combined Zn+Pb; Heath Steele: more than 20 000 000 t of >6% combined Zn+Pb; Halfmile Lake: approximately 12 000 000 t of >9% combined Zn+Pb

Zn, Cu Deposits

- Host Rocks: Middle Ordovician mafic volcanic rocks and associated sediments
- Tectonic Setting: Slope and/or floor of a back-arc rift basin
- Genetic Model: Cyprus-type Ore Controls/Guide to Exploration: Syndepositional faults, submarine volcanic breccias, Mg-metasomatism
- Example: Turgeon: more than 500 000 t of about 4% Zn and 1.5% Cu



### Tobique-Chaleur Zone

Zn, Pb, Cu, Ag Deposits

- Host Rocks: Early Devonian rhyolite domes and associated flows and sediments
- Tectonic Setting: Shallow marine basin associated with extensional collapse
- Genetic Model: Kuroko type
- Ore Controls/Guide to Exploration: Felsic volcanic domes, associated breccias and hyaloclastites, Fe-rich chloritic alteration

- Examples: Sewell Brook: drill intercepts include 5.7 m of 41%, 5 m of 36%, and 10 m of 33% combined Zn+Pb; Gravel Hill: one drill intercept of 1.1 m assayed 8.3% Zn, 1.66% Pb and 0.36% Cu



## St. Croix Zone

### Cu, Zn Deposits

- Host Rocks: Early Ordovician mafic volcanic rocks
- Tectonic Setting: Back-arc rift
- Genetic Model: Besshi type
- Ore Controls/Guide to Exploration: Permeable mafic volcanic rocks
- Example: Annidale: approximately 100 000 t grading 2-5% Cu

### Zn, Pb, Cu, Ag Deposits

- Host Rocks: Early Ordovician rhyolite breccias and hyaloclastites
- Tectonic Setting: Back-arc rift
- Genetic Model: Kuroko type
- Ore Controls/Guide to Exploration: Felsic volcanic domes, associated sericitized and silicified breccias and hyaloclastites
- Example: Harborside (in Maine, none discovered yet in New Brunswick)

S.R. McCutcheon & A.A. Ruitenberg, 1994