

## **GOVERNMENT GEOCHEMICAL SURVEYS LEAD TO DISCOVERY OF INTRUSION-RELATED GOLD DEPOSIT IN NEW BRUNSWICK**

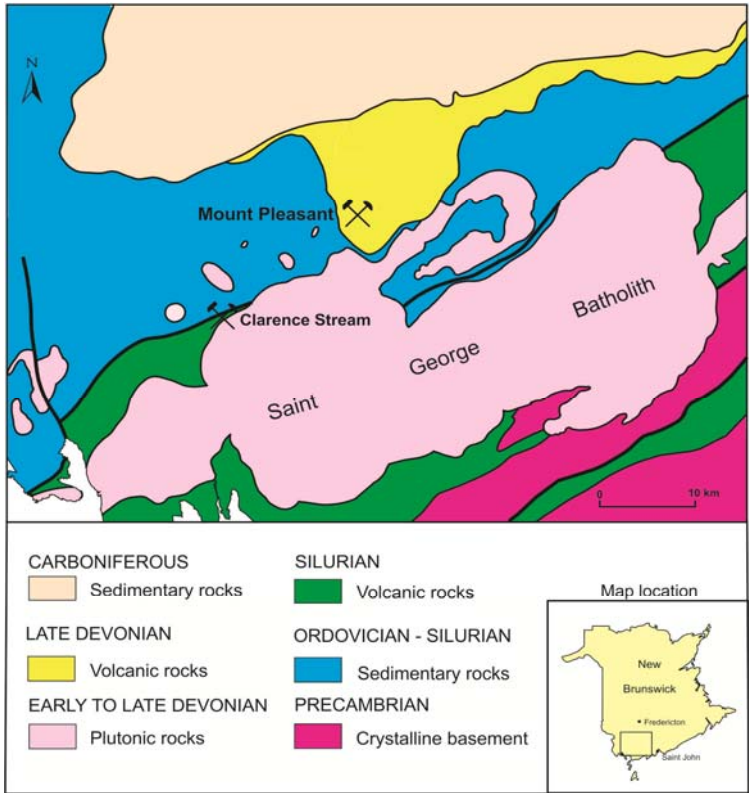
Gold exploration in New Brunswick received an unprecedented boost when a local prospector found boulders containing visible gold in the Clarence Stream area of southwestern New Brunswick in the fall of 1999. But what drew the prospector to this area in the first place? The clues can be seen in a regional stream sediment survey published in Geological Survey of Canada Open File 2486 in 1992. Chemical analyses of two sediment samples from Clarence Stream gave results of 21 and 341 parts per billion (ppb) gold in an area where values as low as 4 ppb would be considered anomalous. Subsequent trenching and drilling by Freewest Resources Canada Inc. encountered several zones of gold mineralization extending over a strike-length of two kilometres along the northern margin of the Saint George Batholith. The Clarence Stream quartz-vein systems closely resemble those of intrusion-related gold deposits of the Tintina belt in the Yukon and Alaska, the first time that this style of mineralization has been recognized in Atlantic Canada.

### **DESCRIPTION OF GEOSCIENCE PROJECT:**

- Regional geochemical surveys were conducted in New Brunswick from 1985 to 2005 under the National Geochemical Reconnaissance Stream Sediment and Water Program – as part of a joint partnership between the Geological Survey of Canada and the Geological Surveys Branch of the New Brunswick Department of Natural Resources.
- Analytical results and field observations are used to build a national database for resource assessment, mineral exploration, geological mapping, and environmental studies.
- Elements analyzed from sediment samples are Ag, Al, As, Au, Ba, Bi, Br, Ca, Cd, Ce, Co, Cr, Cs, Cu, Eu, Fe, Ga, Hf, Hg, K, La, Lu, Mg, Mn, Mo, Na, Ni, P, Pb, Rb, S, Sb, Sc, Se, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tl, U, V, W, Yb, and Zn.
- A total of 17 open file reports have been published covering 30,000 km<sup>2</sup> of New Brunswick.

### **MEASUREMENT OF SUCCESS:**

- Between 2000 and 2010, approximately \$6 million has been spent carrying out exploration work on the Clarence Stream property.
- Mineral resources at Clarence Stream, using a at a cut-off grade of 3 g/t, are currently estimated as: Indicated Mineral Resources of 822,000 tonnes grading 6.90 g/t gold; an Inferred Mineral Resources of 1.2 million tonnes grading 6.34 g/t gold; and an Indicated Mineral Resource of 114,000 tonnes grading 2.9% antimony.



Bedrock geology map of southwestern New Brunswick

Discovery trench of the Clarence Stream gold deposit in southwestern New Brunswick



Prepared by Les Fyffe, Director, Geological Surveys Branch, New Brunswick Department of Natural Resources.