

# GAC-MAC: FIELD GUIDE SUMMARY

## Halifax 2022: GAC-MAC-IAH-CNC-CSPG Joint Annual Meeting Field Trips

Amy Tizzard

Department of Natural Resources and Renewables  
4917 Main Street, Oxford, Nova Scotia, B0M 1P0, Canada  
E-mail: Amy.tizzard@novascotia.ca

### HALIFAX 2022 FIELD TRIPS OVERVIEW

This year the 2022 GAC-MAC Annual Meeting returns to ‘Canada’s Ocean Playground’ in the gleaming new convention centre located in the heart of downtown Halifax. Partnered with the Canadian Society of Petroleum Geologists (CSPG) and International Association of Hydrogeologists (IAH-CNC), the meeting also coincides with the 50<sup>th</sup> anniversary of the Atlantic Geoscience Society (AGS). What better way to celebrate Atlantic geoscience by attending one of the many field trips on offer from a variety of organizations!

Delegates have a total of 12 trips to choose from with a bonus free self-guided walking tour of the geology of the historic Dartmouth Commons that will be offered to all conference participants. Trips range from several hours to multiple days to suit a wide variety of interests and budgets.

### Pre-Conference Field Trips

On May 12<sup>th</sup>, join John Waldron on a trip to several spectacular Nova Scotian coastal sites during “*Salt tectonics along a late Paleozoic transform fault, Nova Scotia*”. This 2 ½ day trip will take you across Nova Scotia and focus on Carboniferous rocks of the Maritimes Basin that were deposited and deformed in a transform-fault setting during the assembly of Pangea. Visits to the Joggins Fossil Cliffs, Cliffs of Fundy Geopark and the Pictou Coalfield will provide an opportunity to discuss the complex interaction among sedimentation, strike-slip tectonics, and salt movement.

Kick back and explore how climate, the local geology, soil characteristics and groundwater influence local wines during “*Geology, Groundwater and Wines of the Annapolis Valley, Nova Scotia*”, a single day outing offered on May 15<sup>th</sup>. Field trip leaders will guide participants across a selection of wineries to learn about (and taste) the wide diversity of geological settings that form the distinctive terroir of the Annapolis Valley.

The CSPG sponsored “*3-D Virtual Book Cliffs Tour, Coal Creek and Deadman Canyons, Utah; Sequence Stratigraphy and Sedimentology of Coastal plain, Shoreface and Offshore Successions of the*



Folded Lower Carboniferous Horton Group at Split Rock, spectacularly exposed on the sea cliffs wave-cut platform of the macrotidal Bay of Fundy. Photo: John Waldron.



Benjamin Bridge Vineyards, view looking northeast over the Gaspereau Valley. Photo: Denise Brushett.

*late Cretaceous Castle gate, Blackhawk and Mancos Shale Formations*” will be offered on May 13<sup>th</sup> for those interested in the application of Unmanned Aerial Vehicles (UAVs) to 3-D modelling of normally inaccessible and treacherous vertical canyons. This virtual field trip is offered by knowledgeable guides in a live session and includes a comprehensive summary document and video recording for participants.

From May 12<sup>th</sup> to 15<sup>th</sup>, Nancy Van Wagoner, Les Fyffe, and Dave Lentz will lead participants on a 4-day field trip exploring the “*Volcanism of the Late Silurian Eastport Formation of the Coastal Volcanic Belt, Passamaquoddy Bay, New Brunswick*”. This trip will provide a detailed look at several stunning exposures of a Late Silurian bimodal volcanic and sedimentary sequence, many sites of which are located along the picturesque Bay of Fundy (see Van Wagoner et al. 2022, this Issue).

### Post-Conference Field Trips

As part of the International Geoscience Programme (IGCP)



Bedded and cross bedded felsic lithic-crystal-tuff and lapilli tuff of cycle 2 interpreted to be surge, flow and minor airfall deposits, distal to source. Photo: K. Dadd.



Coastal exposure of volcanoclastic rocks of the Main-à-Dieu Group near the Fortress of Louisbourg, Cape Breton Island. Photo: D. van Rooyen.

project IGCP 683, Sandra Barr, Yvette Kuiper, Deanne van Rooyen, and Chris White are offering a 5-day field trip examining the “*Geological comparisons and correlations among crustal blocks of eastern North America, northwest Africa, and western Europe*”. From May 19<sup>th</sup> to 23<sup>rd</sup>, the field trip will take participants around Nova Scotia to examine the unique geology of the Meguma terrane, the diversity of Avalonian rocks in the Cobequid Highlands, and the contrasts between rocks of the Mira and Bras d’Or terranes on Cape Breton Island. Other areas (southern NB and SE and coastal New England) will be highlighted during evening ‘virtual’ field trips.

From May 18<sup>th</sup> to 21<sup>st</sup>, Jim Walker, Aaron Bustard and Dustin Dahn will lead participants through “*Stratigraphy and tectonic setting of the Bathurst Mining Camp, New Brunswick*”. This 4-day field trip will whisk you away from Halifax to northern New Brunswick to examine the stratigraphic and structural setting of the volcanogenic massive sulphide deposits of the Bathurst Mining Camp. Focus will first be on the Tetagouche Group including the Brunswick Horizon and its associated deposits, followed by a closer look at the California Lake Group and its deposits.

Stretching across the northern Minas Basin and Bay of Fundy of Nova Scotia, *The Cliffs of Fundy Geopark* was officially designated as a UNESCO Global Geopark in 2020. Beginning on May 19<sup>th</sup>, Caleb Grant and colleagues will host a 3-day traverse through the Geopark with “*Telling the story of the Cliffs of Fundy UNESCO Global Geopark, Nova Scotia: linking geoheritage, indigenous heritage and culture*”. This trip will take participants to several stunning localities within the Geopark and demonstrate the importance and interplay of geological features from cultural, scientific, and indigenous heritage perspectives. Louise Leslie’s Field Trip FT- B7 also explores the wonders of the Cliffs of Fundy Geopark but lasts only for a single day and is exclusively for teachers.

Join Grant Wach and colleagues on May 19<sup>th</sup> for a 2-day excursion examining “*Paleozoic Petroleum, CO<sub>2</sub>, and Geothermal Systems of the Maritimes Basins*”. This trip will visit the Joggins UNESCO World Heritage Site to have a closer look at a salt-

withdrawal basin where rates of accommodation were so rapid that trees of the Carboniferous forest were preserved upright. On day 2, the group will descend on the Stellarton Drill Core Library to examine basin complexities in cores analogous to outcrops visited on Day 1.

Crisscrossing the Carboniferous in Nova Scotia and New Brunswick, the field trip “*The Geological Setting of Romer’s Gap: in memoriam of Jenny Clack*” will examine the environments where tetrapod evolution occurred during and after Romer’s Gap. This 3-day trip beginning on May 18<sup>th</sup> led by Adrian Park, Steven Hinds, Matt Stimson, and Olivia King, will examine tetrapod fossils and footprints and the stratigraphy in which they are hosted. No tour of the Carboniferous is complete without a stop at the Joggins UNESCO World Heritage Site followed by an opportunity to get up close and personal with a late Pennsylvanian trackway at the Tatamagouche Creamery Square Heritage Centre.

Rich in knowledge of the Nova Scotia goldfields, Rick Horne, Dan Kontak and Mitch Kerr are offering a 5-day field trip examining “*Gold Deposits*” of the Meguma Supergroup. Beginning on May 19<sup>th</sup>, the field trip will take participants to several deposits in production and near-term development including the Moose River (Touquoy) Mine, Aureus East (Dufferin) and Goldboro properties, as well as examining a recently discovered epithermal gold project in the Antigonish Highlands. Several additional localities will further augment and challenge the understanding and unresolved issues surrounding Meguma gold deposits.

On top of all the exciting field trips across Nova Scotia and New Brunswick, be sure to give yourself enough time to hop on the ferry from downtown Halifax and travel across the harbour to explore the “*Geology and History of the Dartmouth Commons*” using Tim Fedak’s online self-guided tour. Details of the walking tour will be provided in the conference registration package.

Further information and registration details can be found at the Halifax 2022 website: <https://halifax2022.atlanticgeosciencesociety.ca>.