

APGO Education Foundation Releases Charleston Lake GeoHike on GeoscienceINFO.com

February 3, 2026, Toronto, Ontario: The APGO Education Foundation (“APGOEF”) and the **Geological Sciences and Geological Engineering** department at **Queen’s University** are pleased to announce the release of the **Charleston Lake GeoHike**, located approximately 50 kilometres southwest of Brockville (see Figure 1). This virtual walking tour follows 7 stops along the Sandstone Island Trail and highlights the local geology and geological processes. To see all our GeoHikes in the Kingston area, visit our [Kingston Hub](#). All our GeoHikes can be viewed on [our GeoHikes page](#).



Figure 1. Map showing the location of the Charleston Lake GeoHike (yellow star).

Charleston Lake is situated on the Frontenac Arch, a stretch of igneous and metamorphic rock that connects the Canadian Shield in northern Ontario to the Adirondack Mountains to the south. There are two main types of bedrock exposed in Charleston Lake - ancient Precambrian granite and the younger Late Cambrian Period to Early Ordovician Period sandstone and conglomerate. From the ancient Grenville Orogeny to the younger Paleozoic seas, the geologic history of the rock at Charleston Lake is complex and tells many interesting stories!



Begin your hike at Stop #1 by looking at some Early Paleozoic sandstone and conglomerate outcrops, then move over to Stop #2 to see some details preserved in these same rock units. Fine details such as cross bedding are visible in the sandstone here (see Figure 2). Learn how these features form through the movement of individual sand grains. At Stop #3 you will see some fair-sized plagioclase crystals and discover how different minerals form from cooling magma. Moving on to Stop #4 you will encounter an open cave that was once used by Indigenous Peoples as shelter. Examine for yourself the very same walls that once provided shelter from the elements! At Stop #5 you will visit some ancient granite, formed during the Grenville Orogeny over a billion years ago. Be prepared to put your thinking cap on at Stop #6, as you will encounter a rounded structure in the rocky outcrop itself (see Figure 3). Try and think what could have carved this shape in the rock before reading what geoscientists think it to be. Finish your hike at Stop #7, where you will see groundwater in action and learn about the type of rocks that make good aquifers.

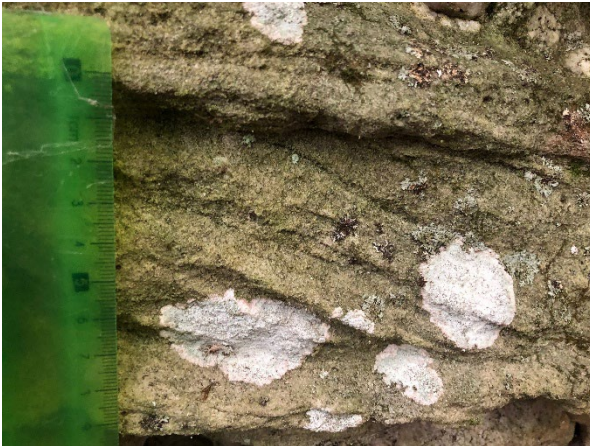


Figure 2. Cross bedding preserved in sandstone at Stop #2 on the Charleston Lake GeoHike.



Figure 3. Cylindrical structure in sandstone at Stop #6 on the Charleston Lake GeoHike.

The Charleston Lake GeoHike was developed by the GeoscienceINFO team led by Manager Dr. Deana Schwarz, P.Geo., and the Geological Sciences and Geological Engineering department at Queen's University, led by Dr. Daniel Layton-Matthews, and the hard work of students Olivia Winslow, Chloe Brunton, and Vivian Wacheski. It is part of a growing series of geoscience-based hiking tours released across Ontario that aims to enhance public knowledge of geoscience using a hands-on and virtually accessible approach. We plan to release more GeoHikes in 2025 and subsequent years, throughout Ontario.

GeoHikes are 1-3-hour non-intensive hiking tours on maintained trails in Ontario that highlight local geology and describe their geological and environmental significance. GeoHikes can be used as guides while walking the trail in person, or as a virtual alternative at home or in the classroom. Visiting sites in person is a great way to learn but virtual tours are also an exciting way to expand one's knowledge when in-person access is not possible. Through the use of ESRI's innovative ArcGIS-StoryMap™ application and the integrated features, GeoHikes provide the user with an immersive experience. GeoHikes typically include:

- 360-degree photos and/or drone videos to provide a detailed overview of each site.



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- LiDAR-based virtual 3D models that show locations of key features such as fossils, important structures and other geological features at the buildings or rock outcrops.
- Slide bars to show multiple images or overlays of important features or geologic information.
- Descriptions of geological features.
- Audio descriptions of written content.

About the APGO Education Foundation

The APGO Education Foundation is a registered charitable organization under the Canada Not-for-profit Corporations Act, registration number 84604 5052 RR0001. The purpose of the charity is to advance the education of the public in the area of geoscience – see <https://apgoef.ca>. [GeoscienceINFO.com](https://apgoef.ca), developed by the Foundation, is an innovative one-stop spot for the public to gather information about the earth beneath their feet. This website provides interesting information on all facets of geoscience. A particularly exciting feature of GeoscienceINFO.com is the highlighting of virtual field trips in different areas in Ontario. This enables viewers to experience and learn about the geology of an area in person or while traversing it digitally in ESRI ArcGIS Online™ and StoryMaps™.

If you like our work, please consider making a tax-deductible donation to support our programs.

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