



APGO Education Foundation Releases Wainfleet Wetlands GeoHike on GeoscienceINFO.com

- Wainfleet Wetlands is a Premier Geosite in the Niagara Geopark

July 8, 2024, Toronto, Ontario: The APGO Education Foundation (“APGOEF”) and the School of Earth, Environment & Society at McMaster University are pleased to announce the release of the **Wainfleet Wetlands GeoHike**, located on the south side of the Niagara Peninsula, in the Niagara Geopark (see Figure 1). This virtual tour highlights six (6) stops in this award-winning remediated quarry. To see this as well as all our GeoHikes, visit [our GeoHikes page](#).



Figure 1. Map of the Niagara Peninsula, showing the location of the Wainfleet Wetlands GeoHike (yellow marker) in the Niagara Geopark.

APGOEF is proud to be a Geoscience Education Partner for the Niagara Geopark, which is working in partnership with local communities, tourism businesses, educational institutions, conservation organisations and government agencies across the Niagara Region to have the Niagara Peninsula designated as a UNESCO Global Geopark. The Niagara Geopark recently received its charitable status registration and will shortly be hosting a team of international UNESCO inspectors for a tour of major geosites.

Wainfleet Wetlands is an excellent example of how a former limestone quarry can be remediated and restored to a diverse and healthy ecosystem following completion of mining. The limestone at Wainfleet is teeming with fossils, dating back to the middle Devonian Period, approximately 395 million years ago.



At this time, Wainfleet was located south of the equator and experienced a warm, tropical climate. As such, massive coral reef systems flourished with marine animals such as brachiopods, crinoids, trilobites, bryozoans, and early fishes occupying these relatively shallow seas. The limestone cliffs at Wainfleet contain well preserved fossils of this ancient ecosystem. Large specimens of the colonial rugose coral *Acinophyllum* are found here, providing a glimpse into their structure and how they fit into the ecosystem (Figure 2).

Also described in the Wainfleet Wetlands GeoHike, is the solitary rugose coral *Heliophyllum halli* (Figure 3), which is ubiquitous throughout the limestone here. This coral species has aided our understanding of the ancient Earth, particularly the rotation speed of Earth throughout its history. By studying the growth rings on *H. halli*, it can be determined how many days were in a month during the middle Devonian. In doing so, this tells us that the Earth was spinning much faster in the mid-Devonian with a year being about 395 days as compared to 365 days in year today.



Figure 2. The colonial rugose coral, *Acinophyllum*, centre, at Wainfleet Wetlands.



Figure 3. *Heliophyllum halli*, a solitary rugose coral at Wainfleet Wetlands that can better our understanding of Earth's rotational history.

The Wainfleet Wetlands GeoHike was developed by the GeoscienceINFO team led by Manager Dr. Deana Schwarz, P.Ge., and the School of Earth, Environment & Society at McMaster University, led by Dr. Daniel Dick and Dr. Carolyn Eyles, P.Ge.. Dr. Dick, an expert paleontologist who is a post-doc at McMaster, led the field team that collected the data for this GeoHike. 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. This summer APGOEF has field work in progress with seven universities across Ontario. More releases of GeoHikes are planned in 2024 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.
- 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 (“APGOEF) 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 by:

- Holding lectures, presentations, and conferences on geoscience both in person and virtually to introduce geoscience to high school and university students as well as enhance the knowledge of the general public.
- Providing scholarships to post-secondary students for the study of geoscience in the final year of a Bachelor of Science (B.Sc.) degree program.
- Providing bursaries to immigrants to Canada who are internationally trained geoscientists and have demonstrated financial need for completion of licensure procedures for registration as professional geoscientists (P.Ge.o.s) in Ontario.

APGOEF provides funding to support innovative geoscience education projects working with university geoscience departments, community groups and not-for-profit organizations across Ontario. Please see our website at www.apgoedfoundation.ca

GeoscienceINFO.com is a one-stop spot for the public for information about the earth beneath their feet. This innovative website provides interesting information on all facets of geoscience in a form understandable to the public. A particularly exciting feature of GeoscienceINFO.com is the highlighting of virtual fieldtrips in different areas in Ontario. This enables viewers to experience and learn about the geology of an area while traversing it digitally in ESRI ArcGIS Online™ and StoryMaps™. Information on the latest discoveries and news in the world of geoscience is featured on the website, on our blog [Beneath Your Feet: A Geoscience Blog](#), as well as on our social media.

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

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