

# Mistaken Point Ecological Reserve



More than 10,000 fossil impressions, ranging from a few centimetres to nearly 2 meters in length, are readily visible for scientific study and supervised viewing along the coastline of Mistaken Point. Mistaken Point got its name, incidentally, from the difficulty of navigating in the treacherous waters surrounding the point; over fifty ships are known to have been wrecked in the area. S. B. Misra, a graduate student at the Memorial University of Newfoundland found the first fossils there in 1967, triggering a surge of interest in and expeditions to the site. Over the next few decades, the location gained recognition as an important preserve of the Ediacaran biota, and it was established that the site contains the oldest metazoan as well as ocean floor marine fossils in the world. The fossils generally date to approximately 565 Ma. The area, comparable to South Australia's Ediacaran Hills has been important in developing a more nuanced understanding of the development of life in the Precambrian, as few of the organisms that proliferated in this time survived into the Cambrian period. Ediacaran biota is characterized by an ecology which, in a sense, centers itself around the mats of organisms which lived and fed on the sea floor, comprised of the first multicellular and structurally complex organisms that lived, the first animals. The earliest of these have been found at Mistaken Point. Many other fossils from the site have been found nowhere else in the world. The most common fossils found at the site are rangeomorphs, frond like creatures which floated just above the sea floor. Other important discoveries include the *Charnia*, *Charniodiscus*, and *Bradgatia*, other organisms with a frond-like structure. On July 17, 2016, Mistaken Point was declared as a Unesco Heritage site due to its paleontological importance.

## Sources:

- Clapham, M. E., Narbonne, G. M., & Gehling, J. G. (2003). Paleoecology of the oldest known animal communities: Ediacaran assemblages at Mistaken Point, Newfoundland. *Paleobiology*, 29(4), 527–544. doi: 10.1666/0094-8373(2003)029<0527:potoka>2.0.co;2
- Gehling, J. G., & Narbonne, G. M. (2007). Spindle-shaped Ediacara fossils from the Mistaken Point assemblage, Avalon Zone, Newfoundland. *Canadian Journal of Earth Sciences*, 44(3), 367–387. doi: 10.1139/e07-003
- Liu, A. G., & Matthews, J. J. (2017). Great Canadian Lagerstätten 6. Mistaken Point Ecological Reserve, Southeast Newfoundland. *Geoscience Canada*, 44(2), 63–76. doi: 10.12789/geocanj.2017.44.117
- Matthews, J. J., & Meilroy, D. (2019). On the Adhesion of Sediment to Footwear and the Implications for Geoconservation. *Geoheritage*, 11(4), 1749–1756. doi: 10.1007/s12371-019-00380-3
- Memorial University of Newfoundland. (2016, October 25). Faculty of Science. Retrieved from <https://www.mun.ca/science/news.php?id=8060&type=news>
- Misra, S. B. (2010). Discovery of Ediacaran Fossils in Southeastern Newfoundland. Retrieved from <http://mistakenpointfauna.com/?i=1>
- Narbonne, G. M. (2000). Mistaken Point Fossil Assemblage. Retrieved from [https://archive.vn/20130115133256/http://geol.queensu.ca/museum/index.php?option=com\\_content&view=article&id=54&Itemid=61](https://archive.vn/20130115133256/http://geol.queensu.ca/museum/index.php?option=com_content&view=article&id=54&Itemid=61)
- Narbonne, G. (2008, January). The Origin and Early Evolution of Animals. Retrieved from [https://web.archive.org/web/20150724081804/http://geol.queensu.ca/people/narbonne/recent\\_pubs1.html](https://web.archive.org/web/20150724081804/http://geol.queensu.ca/people/narbonne/recent_pubs1.html)
- Waggoner, B., & Smith, D. (2005, October 7). Localities of the Vendian: Mistaken Point, Newfoundland. Retrieved from <https://ucmp.berkeley.edu/vendian/mistaken.html>



GEOL 204 The Fossil Record

Spring 2020 Section 0103

Sam Dombroski, Andrew Gonella,  
Daniel Collison, Kai Vasiluk