BLUE BEACH AND AVON RIVER EXCURSION, NOVA SCOTIA

On 6 June 2026, sixteen NSIS members and guests participated in an excursion to two sites on the Avon River in Kings and Hants Counties. The first site was at Blue Beach, between Hantsport and Avonport, and the second site was along the Pisiquid Lake portion of the Avon River in Windsor.

We spent the morning first at the Blue Beach Fossil Museum[1] and then on the Beach itself. Blue Beach (Fig 1) is a world-class and world-famous fossil site and has long been known by paleontologists and geologists for its unique treasures – especially the first evidence (in 1841) for the presence of vertebrates in the Carboniferous. It is now important for evidence of the invasion of the land by the first vertebrates to leave the sea, the so-called "Romer's Gap"[2,3]. The fossil trackways make Blue Beach the official birthplace of vertebrate paleontology in Canada.

We met our host and guide, Chris Mansky (Fig 2), at the Blue Beach Fossil Museum. He has dedicated over two decades collecting and



Fig 1 Blue Beach on the Avon River.

[1] www.cbc.ca/news/canada/nova-scotia/blue-beach-fossil-museum-chris-mansky-funding-1.5237511

[2] Blue Beach Fossil Museum. (2026). History & Geology, Age and Geological Setting, Milestones in Previous Research, Romer's Gap, The Fossils, Tetrapods, Fishes, Invertebrates, Plants. www.bluebeachfossilmuseum.com/

[3] Anderson, J.S., *et al.* (2015). A diverse tetrapod fauna at the base of 'Romer's Gap'. PLoS One. 2015. Apr 27;10(4):e0125446. doi:10.1371/journal.pone.0125446



Fig 2 Explaining fossils.



Fig 3 Chris Mansky

cataloging over 10,000 specimens from the beach resulting in an extraordinary paleontological record going back 350 million years. Chris used samples from the collection to teach us a lot about ..the geologic period, fossil-forming processes, things that may be seen in samples from the beach, and much more (Fig 3). For example, we learned that the term "fossil" only applies to items derived from living things such as "body fossils" – bones, shells, leaves, branches. "Trace fossils" are impressions left by living things – footprints, worm tunnels, etc. Other common features are from non-living processes – sedimentary features of wave action, mud cracking, etc.

We also learned that specimens exposed by splitting apart two sedimentary layers often appear in both pieces, one as a convex (raised) feature and the other as a concave (depressed) feature. So, depending on which rock is found, a footprint may be concave (as you'd expect) or it could be a raised impression.

Chris also explained the significance of the finds at Blue Beach – those that provided the earliest evidence of evolving creatures moving from aquatic existence to a terrestrial way of life. These four-footed tetrapods were abundant and the museum has many trace fossils of their footprints[4].

[4] Mossman, D.J. & Grantham, R.G. (2008). *Eochelysipus horni*, a new vertebrate trace fossil from the Tournaisian Horton Bluff Formation, Nova Scotia. Atlantic Geoscience 44: 69-77. doi.org/10.4138/5933



Fig 4 On the beach.

After a wide-ranging discussion and Q&A, we moved down to the beach[5] which, as planned, was at low tide (Fig 4). It was littered with sandstones, siltstones and shales that had been eroded out of the cliffs and moved up and down along the coast by Bay-of-Fundy tidal action. The period of formation was 350 million years ago, long before dinosaurs, so we weren't going to see anything large. But based on what we had learned in the museum we realized that something of interest could be seen in nearly every apparently-plain-looking rock. Usually these were simple examples, but once in a while something like mud-worm traces or even a tiny piece of fossilized bone could be seen, and occasionally nice-looking footprints. We all had an enjoyable and interesting time looking at rocks and bringing them to Chris to identify what we had found (Fig 5, Fig 6).

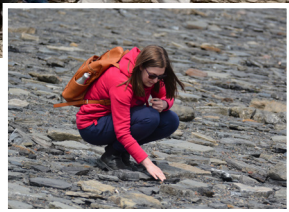


Fig 5 Fossil hunting.



Fig 6 Footprint (upper right).



Fig 7 Along the trail.

[5] Werle, D. (2026). Regional and local setting of the Blue Beach fossil cliff area in Nova Scotia, as seen by Earth observation satellites. Maps and text. Werle (personal communication).



Fig 8 A fossil seashell.



Fig 9 A nice gypsum sample.

After our visit to Blue Beach, most of us had a very nice lunch at an establishment in Windsor and then moved on to re-group at the Clifton Museum Park (formerly known as Haliburton House Museum). Tim Fedak then took us on a guided geological walk along part of the lovely Riverview Trail next to the Avon River (Fig 7). The river was once an extension of the large Windsor Sea that covered all but the mountainous highlands in Nova Scotia from about 335 million years ago[6].

There was a high escarpment along the walk, and in parts it was limestone and in other places gypsum. These materials are different from those we saw at Blue Beach and were formed in a slightly later period. Tim took us to a limestone section that provided many pieces of easily-splitable rock, and we were able to find some fossils, mainly of small seashells (Fig 8). Further along the trail Tim showed us sections of pure gypsum (Fig 9), and he explained how gypsum is transformed into plaster. Today gypsum is the basis of drywall construction panels, making it an important Nova Scotian export. As we made our way back to Clifton Museum Park, Tim pointed out several large limestone sinkholes on the perimeter. He noted that all of the numerous fossil mastodons found in Nova Scotia were victims of falling into similar sinkholes, and it has been shown that they did so in different interglacial periods.

[6] Fedak, T. (2026). Map of Nova Scotia showing the various geological groups of the Carboniferous period, plus a map of the Windsor Sub-basin, and relevant references. Fedak, (personal communication).



Fig 10 The End of a Good Day.

It was a very full and educational day (Fig 10), and we learned much that was new to us about the geology and paleontology of this region of Nova Scotia. Most of us pay scant attention to the geological features all around us, and this day taught us that there is much to be learned, even from seemingly insignificant surroundings. As a bonus, the weather was good and the landscapes were scenic. We all felt that it was a very successful excursion.

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