



STONEHAMMER™



United Nations
Educational, Scientific and
Cultural Organization



Stonehammer
UNESCO
Global Geopark

IRVING NATURE PARK

Location: Sand Cove Road, west Saint John, NB.
GPS: 45°13.53' N; 66°07.02' W

Access: accessible dawn until dusk, free



Geological Age: Neogene (Quaternary) 15 - 10,000 years old;
Precambrian-Cambrian 600 to 540 million years old

Features: Visitor Information, guided tours, interpretation, beach, driving trail, hiking/walking trail, picnic facilities



ROCKS

The geology of the Irving Nature Park includes both Precambrian to Cambrian bedrock (600 to 540 million years old) exposed on Taylor's Island and at Sheldon Point, and overlying sand, gravel and clay deposited during the last ice age less than 15,000 years ago. The age of the older volcanic and sedimentary rocks have been hard to determine. Although they have many interesting features, this note will focus on the ice age geology of the Irving Nature Park. This is one of the best places in Stonehammer to see this part of the geologic record. The ice age geology is made up of 'unconsolidated' sediments. They are not rock yet. They are too young.

20,000 to 10,500 years ago glaciers melted from the Maritimes



During the 'Younger Dryas' glaciers got bigger

CLIMATE CHANGE

The end of the ice age was a time of rapid climate change especially during the 'Younger Dryas' cold interval. About 11,000 years ago temperatures plummeted about 7°C in a decade. Sub-arctic insects re-invaded the Maritimes for hundreds of years until temperature warmed again. A peat bog on the hill at Saints Rest Beach records this rapid climate event.



snail
NBMG 4208



brittlestar
NBMG 8440

FOSSILS ARE PROTECTED BY LAW IN NEW BRUNSWICK
A PERMIT IS REQUIRED TO COLLECT FOSSILS
If you find a fossil, note its location, photograph it and send the information to the New Brunswick Museum (www.nbm-mnb.ca)



sub-arctic beetles
in peat bog



GLACIERS

At a time geologists call the 'Last Glacial Maximum', about 20,000 years ago, continental glaciers covered most of North America, including the Maritimes. By 10,000 years ago New Brunswick was probably 'ice-free'. As the glaciers retreated they left piles of sand and gravel along their margin. Called 'moraines' and 'outwash', these piles of sediment are easily seen on the modern landscape. We often use them as sand and gravel quarries. The quarry on Sand Cove Road above the beach is an example. About 15,000 years ago the front of the glacier stood here at the Irving Nature Park. You are standing behind the Sheldon Point moraine, now mostly eroded away to create the beach. This was a tidewater glacier since the glacier ice was up against the ocean. The red clay along the beach cliff is composed of layers of ocean sediment. Occasionally fossils of snails, clams, sea urchins and starfish can be found in the clay. As the glacier continued to retreat it left a series of moraines where it stood still for a period of time. Looking northwest from the beach you can see Manawagonish Road on the hill. The road is built on the Manawagonish Moraine. This moraine acted as a dam and forced the St. John River to flow through the Reversing Rapids.