

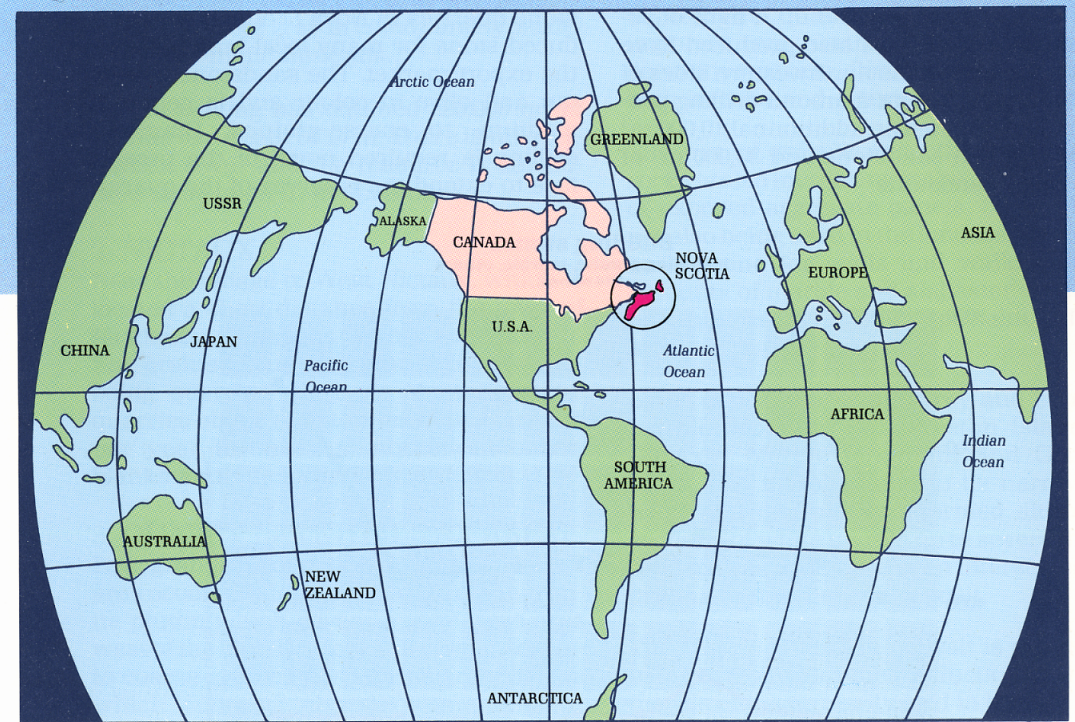
Geology

Nova Scotia is a region which contains great diversity and ages of rock types. Rocks as old as one billion years are found on Cape Breton Island. Many episodes of heat and pressure (metamorphism) have greatly altered these rocks to gneisses, schists, marbles and quartzites.

The granites, slates and quartzites of southern Nova Scotia are about half the age of the marbles of Cape Breton Island. They represent an active period of mountain building, between 350-400 million years ago, which produced a mountain range as high as the present Rocky Mountains. Erosion of highland areas throughout northern Nova Scotia and Cape Breton Island over the next 100 million years resulted

in the deposition of thick sandstone and shale beds which host the Province's rich coal fields. Continuing erosion and coastal movements, along with an ice age spanning the last 60,000 years, have given rise to today's landforms. The massive ice sheet reached over 1 km in thickness and stripped many areas of Nova Scotia bare to bedrock while depositing thick mantles of rocks, soil and debris over others.

From these diverse geological endowments, Nova Scotia has in the past and continues to produce building stone ranging from the Precambrian marbles of Cape Breton through the Devonian granites of the southern mainland, to the Carboniferous sandstones of the northern mainland.



SANDSTONE

Sandstone is composed mainly of quartz grains of sand size set in a fine grained matrix of silt, clay, silica or carbonate cement. Other minor constituents include feldspar, mica and minor iron minerals. Sandstone occurs in a wide range of colour, grain size and texture.

The sandstones of northern Nova Scotia, which have been quarried for dimension stone, may be divided into two broad categories — red sandstone from Amherst, Northport and River John and olive, buff and grey sandstones from Wallace, Eight Mile Brook, Sawmill Brook and the McKeen quarry.

Recent studies have outlined significant reserves of sandstone at the following locations.

1. WALLACE QUARRY

The Wallace quarry has produced three colours of stone in the past. The greatest volume of stone produced was a medium to dark olive-green, fine- to medium-grained massive sandstone of Late Carboniferous age. The average thickness of the quarried unit was 12 m. It overlies a fine- to medium-grained blue-grey sandstone with an average thickness of about 3 m. A light olive-green sandstone was also produced from small pockets on the northwestern sides of the quarry. A recent diamond-drilling program has outlined an additional 40,000 m³ of olive-green sandstone and 33,000 m³ of blue-grey sandstone.

2. AMHERST QUARRY

This is one of the oldest quarries in northern Nova Scotia and the pinkish-red stone raised for building stone from this location is probably as well known as the olive-green Wallace stone. The quarry is about 30 m deep, 100 m in diameter and presently inactive.

Recent drilling has outlined 27,000 m³ of red sandstone and the resource is open in all directions.

3. EIGHT MILE BROOK

A small quarry producing light grey sandstone was operated by a gravestone manufacturer on Eight Mile Brook at the beginning of this century. A drill program in 1986 outlined 26,000 m³ of high quality grey sandstone.

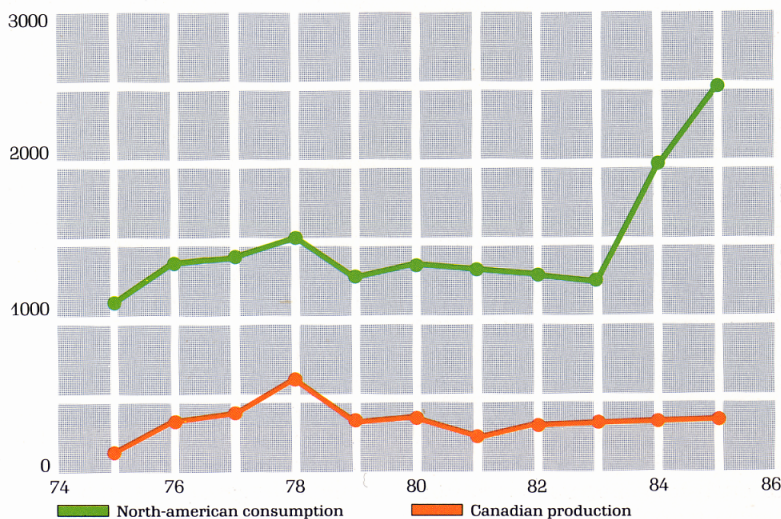
4. HARDWOOD HILL

A new sandstone quarry was recently opened near Hardwood Hill, Pictou County. Diamond-drilling has outlined the presence of a large quantity of tan to olive, fine- to medium-grained sandstone at this location. At present the sandstone is being quarried for rock fill only and no building stone extraction has taken place.

5. ENGLISH PROPERTY (MCKEEN QUARRY)

This quarry is one of the oldest building stone quarries in Nova Scotia, having produced stone for many local buildings and the export market. The sandstone is grey, tan and olive in colour and is generally medium- to coarse-grained. Diamond-drilling is required north of the present face to extend the reserves of the quarry.

Building stones
including granite, marble, others
(000 tonnes)



GRANITE

Granites are the most universally used monumental and building stones and are widely used as cladding panels, pavers, thresholds, steps and risers, and for monument blanks and press rollers.

A large portion of Nova Scotia is underlain by granitic rocks. Past granite production has exploited the South Mountain Batholith and its related satellite plutons in areas such as Shelburne, Nictaux, Halifax and Terence Bay.

The eastern shore region of the Province boasts a number of plutons of "black granite". The old black granite quarry at West Erinville produced thin slabs of a good quality black granite (gabbro) for the monument industry.

Recent studies have outlined significant reserves of granite at the following locations.

1. TERENCE BAY

Two types of granite are available in the Terence Bay area. A white monzogranite containing less than 10% mafic minerals is present on the shoreline directly across the Terence Bay River from the village of Terence Bay. Farther inland the monzogranite is more grey in colour and typically has more mafic minerals.

Recent drilling has outlined 220,000 m³ of granite to a depth of 14 m. There is no overburden cover and the resource is considered to be open in all directions.

2. NICTAUX

Near the village of West Nictaux, which is located a short distance from the town of Middleton, Annapolis County, a medium- to fine-grained, blue-grey granite is presently being quarried. Heritage Memorials Ltd. quarries about 1,500 tonnes of blue granite per year for use as monument bases, blanks and other specialty products.

3. QUARRY LAKE (HALIFAX AREA)

Past granite production from the Halifax area occurred along the margin of the granite pluton which covers a very large area west of the city. The rock is a grey, medium- to coarse-grained porphyritic granodiorite which contains abundant xenoliths or "knots" of slate. Large quantities of the stone have been used in building construction, and for curbstone and paving blocks.

Although the Quarry Lake area has not been drilled, it appears to contain a large reserve of granite suitable for building stone.

4. SHELBURNE

Past production of granite for monuments and building construction took place near the Shelburne Harbour area. The rock is a fine- to medium-grained, grey muscovite-biotite granodiorite to monzogranite. Although there is no production from the area at the present time, the stone has proven very suitable for architectural work in the past.

5. ERINVILLE

Past production of "black granite" (gabbro) for monuments took place at Erinville, Guysborough County, in the early 1930s and again in the early 1960s. The gabbro consists of a fine- to medium-grained dark grey to black rock composed of labradorite, pyroxene and amphibole with minor amounts of ilmenite and apatite. Recent drilling has outlined a small gabbroic plug about 300 m in diameter which may be suitable for the production of quarry blocks.

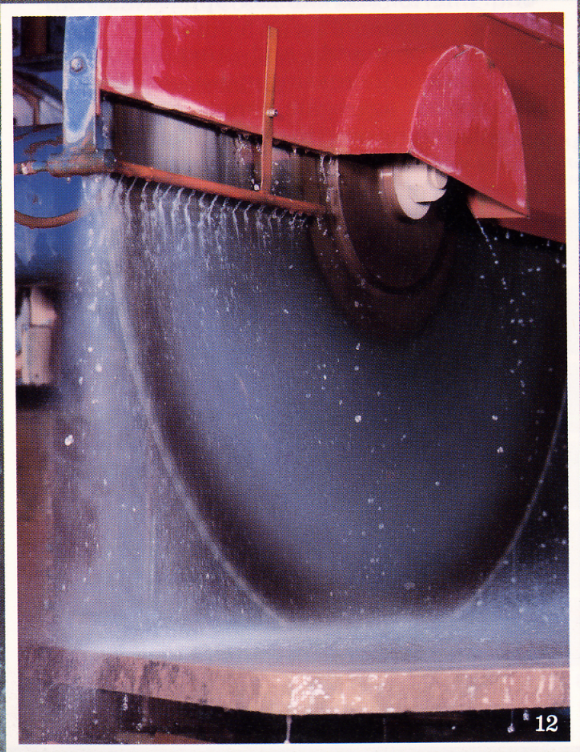
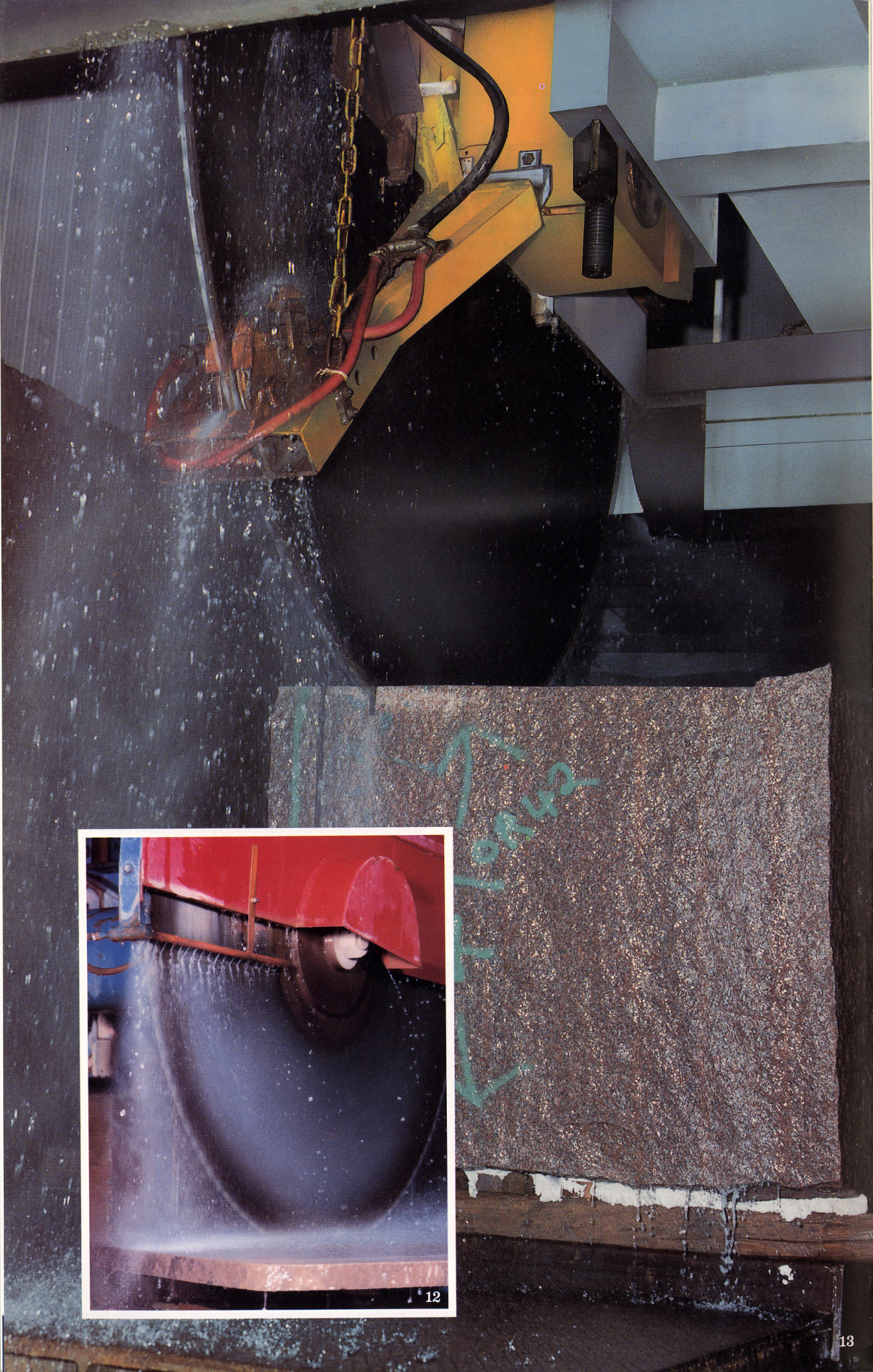
MARBLE

Significant quantities of marble are imported into North America for use as decorative panels, floor tiles and trim for both interior and exterior applications.

The use of marble and other decorative rocks is also increasing in the manufacture of exposed aggregate panels. Stone chips are also being used in the landscaping field, as is stone for walls and walks. Minor amounts of marble and alabaster are used by sculptors and in other specialties of the arts.

Large deposits of white, grey and banded marble occur on Cape Breton Island at Glencoe, Marble Mountain and George River. The marbles tend to be narrow in width and structurally deformed, although sections of white marble up to several hundred metres wide have been intersected by drilling at the Glencoe deposit.

The Marble Mountain deposit is presently being exploited for the production of white marble chips primarily sold in bags at garden centres. This material may also be well-suited for the production of chips for exposed aggregate panels.



Stone fabrication industry

Nova Scotia has many stone processing facilities producing a product line ranging from monuments, mausoleums, desk tops and counter tops in granite to rock-faced ashlar, intricate mouldings and fancy carving in sandstone. Modern plants equipped with state of the art sawing, shaping and finishing machines turn out work of the highest quality.

Both local granite and sandstone are used in addition to many varieties of imported granite and marble. One of our monument manufacturers has pioneered the use of a computerized lettering machine and has the only computer controlled letter-cutting machine operating on a production line in Canada.

- 12 Diamond saws
- 13 Diamond saws
- 14 Polishing granite monument blank
- 15 Sawing sandstone slab to shape

- 16 Diamond saw
- 17 Computer controlled monument lettering
- 18 Diamond mono-saw in sandstone

