

The Fossil Cliffs of Joggins

... towards World Heritage Site designation

The classic Carboniferous section at Joggins, Nova Scotia, gained the attention of the world in the mid 19th Century as the proving ground for Sir Charles Lyell's *Principles of Geology*. It was the site of coal mining as early as the 1600s and became the first field project of the newly formed Geological Survey of Canada in 1842.

The Coal Age forest swamps of Joggins were a 'greenhouse' of terrestrial evolution, as witnessed by the record of life within the fossil forests, which ranges from the earliest land snails to the first unequivocal reptiles. Relentless erosion of the spectacular sea cliffs by the world-record tides of the Bay of Fundy continually exposes fresh rocks, ensuring that new discoveries will continue to be made at Joggins.

World Heritage Designation for Joggins

The Community of Joggins has begun the preparation to be nominated as a World Heritage Site. Currently, an estimated 20,000 tourists visit the fossil cliffs each year, a number that has the potential to swell several fold with World Heritage Site designation.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) requires that a World Heritage Site be "...of outstanding universal value"¹. Nominated geological sites should "be outstanding examples representing major stages of the earth's history, including the record of life..."²

Joggins meets these criteria. Now it is our challenge to demonstrate this to the world.

Sources: ¹ Article 2 of *The Convention Concerning the Protection of the World Cultural and Natural Heritage*, UNESCO, 1972

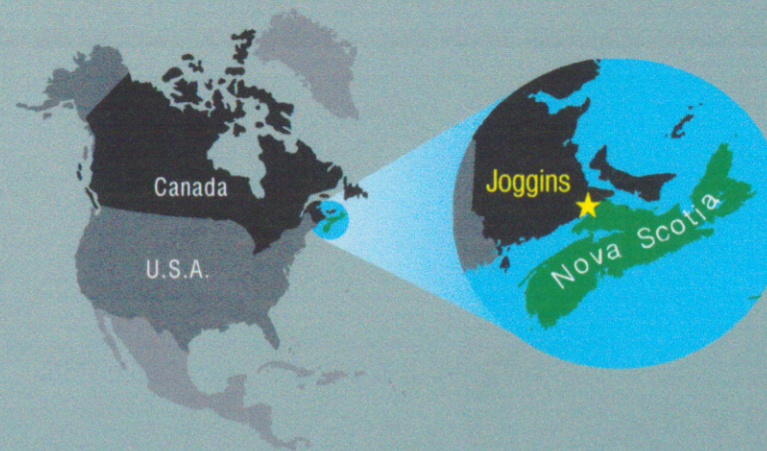
² *Operational Guidelines for World Heritage Sites*, UNESCO



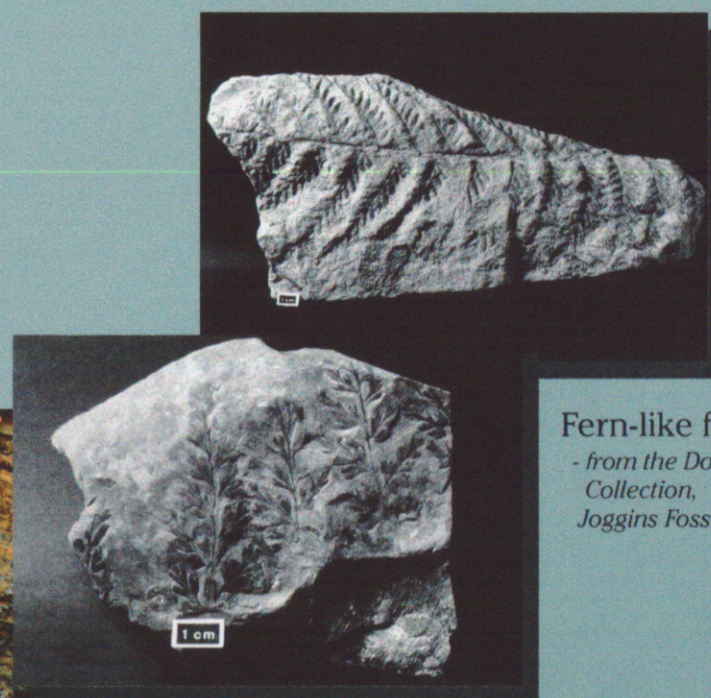
Nova Scotia
Natural Resources
Minerals and Energy Branch

Illustration ME 1998-1

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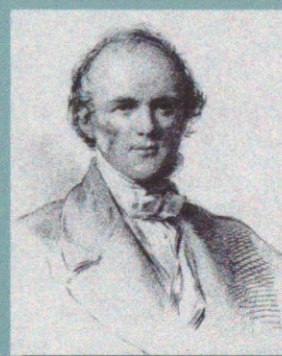
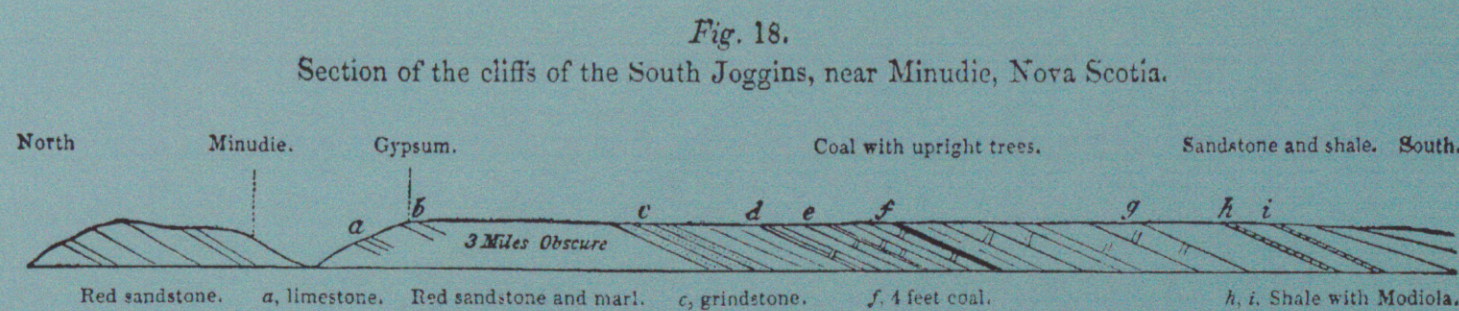
One of the great trees of the Coal Age fossil forests for which Joggins is famous.



Fern-like foliage
- from the Donald Reid Collection,
Joggins Fossil Centre



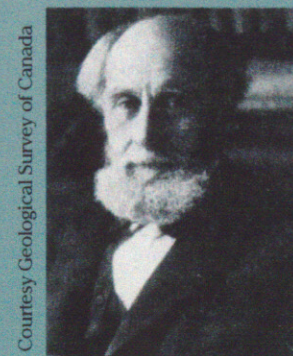
The strange occurrence of fossil reptiles and amphibians within the fossil trees of Joggins has intrigued paleontologists and enthusiasts alike since their discovery a century and a half ago. The long held 'pitfall theory', depicted in countless textbooks, suggests that the animals fell into the hollow stumps and became trapped. Ongoing research suggests another possibility, that the trees, scarred by fire, were dens for the young tetrapods. From an original painting by Stephen Greb.



Sir Charles Lyell

'But the finest example in the world of a natural exposure [of the Coal Measures] in a continuous section ten miles long, occurs in the sea-cliffs bordering a branch of the Bay of Fundy in Nova Scotia'

Sir Charles Lyell, writing of Joggins in *The Student's Elements of Geology*, 1871.



Sir J. William Dawson

Sir J. William Dawson documented the fossil record of Joggins in the last half of the 19th century.

