
J. H. Calder

Background

Nova Scotia is endowed with twin gifts: a rich geological history and a dramatic showcase in which to display it. Perhaps nowhere else in the world is the story of the evolution of early life on land, including primeval forests and the earliest reptiles through to dinosaurs, so well and completely recorded in the rocks now splendidly exposed in Nova Scotia's coastal cliffs. Singly, not all sites may rate World Heritage status, as Joggins may one day achieve. However, taken as a whole, their story is found nowhere else as completely as in Nova Scotia.

UNESCO has established comprehensive criteria that must be met before a site can be considered, which will require support at the community level, already demonstrated, but further at the provincial and federal levels of government to ensure that infrastructure will be in place and that site interpretation and protection will be ensured for future generations. From a scientific perspective, UNESCO (1972a) requires that a World Heritage Site be "...of outstanding universal value". Nominated geological sites should "be outstanding examples representing major stages of the earth's history, including the record of life, significant ongoing geological processes in the development of landforms, or significant geomorphic or physiographic features..." (UNESCO, 1972b). Further information on the World Heritage Convention and the process for "inscription" of sites can be found at the UNESCO website at www.unesco.org/whc/.

The major responsibility of the Department of Natural Resources in assisting Joggins and Nova Scotia to realize this important goal is to provide the scientific documentation that supports these criteria. To that end, research and documentation of the fossil record and its paleo-ecology, including new discoveries made in 1999, is being conducted in conjunction with Brian Hebert, Saint Mary's University, and preparator Tim Fedak, Fundy Geological Museum (see previous paper, this volume). Assistance to the locally run Joggins Fossil Centre is continuing through assistance in specimen identification, labelling and interpretation.

Status of Sites

Joggins (NTS 21H/09)

In 1998 the Joggins-River Hebert Development Association hosted a series of community meetings to gauge public support and identify any concerns with respect to initiating the process of seeking World Heritage Status from the United Nation's Educational, Scientific and Cultural Organization (UNESCO). Inscription on the World Heritage sites list would have a major positive impact, not only locally but for the province and greater Bay of Fundy region. An estimated 20,000 tourists currently visit the fossil cliffs each year; however, this number has the potential to swell several fold with World Heritage Site designation.
develop just such a management plan. Curator of Special Places Robert Ogilvie, in concert with the World Heritage Steering Committee, has consulted the Joggins community and incorporated their views in the museum’s management plan.

**Brule (NTS 11E/14)**

At Brule (Fig. 1), scientific documentation of this recently discovered site reached a milestone with the submission at year’s end of a comprehensive manuscript to the journal *Palaeos* (Calder et al., submitted). Under the direction of the Colchester Regional Development Agency (Corda) and the local North Shore Development Association, a community-based Steering Committee has been instituted as a first step to incorporation as a charitable society. A provisional site for an interpretive centre in Tatamagouche is being evaluated, where selected material from the collection can be housed and displayed until funds are raised for more comprehensive infrastructure at the site.

Site mapping, excavation, specimen identification and interpretation, in cooperation with Howard van Allen of Dartmouth, continues in a challenging attempt to conserve the fossil record at Brule in the face of unrelenting tidal erosion. Late in 1999, the author received notice of the award of a scientific research grant from the Committee for Research and Exploration at the National Geographic Society, which will assist in funding work at the site and on the collection in the year 2000.

**Sydney Mines (NTS 11K/01)**

A feasibility study advising development of a fossil interpretive centre at Sydney Mines was commissioned by New Deal Development and conducted by Environmental Design and Management Ltd. of Halifax in 1998. An advisory board to New Deal was subsequently formed to consider and oversee implementation of the report’s recommendations, with its first meeting held in 1999. Design for an interpretive centre was commissioned by New Deal from a consortium comprising Ojolick & Associates (Architects/Planners), and Communication Design Group. Scientific advice was provided to the board by the author and by Dr. Erwin Zodrow, University College of Cape Breton, on the structure and ecology of the Coal Age forests as represented at Sydney Mines. By year’s end, the Fossil Advisory Board restructured to form an incorporated, not-for-profit organization, the Sydney Coalfield Fossil Society. The society has adopted as their objective “the development and interpretation of world class fossil sites in the Sydney Coalfield for the long term economic, educational, scientific and historical benefits of surrounding communities; and in particular, recognition and interpretation of the historical significance of fossil sites in Sydney Mines.” The society is currently seeking to broaden its membership within the community, and New Deal has maintained its presence within the new entity.

In May 1999, at the request of the Fossil Advisory Board and New Deal, the writer undertook a speaking tour to schools in the Sydney Mines area to stimulate a sense of stewardship within the community. Presentations were delivered to four schools (Thompson Junior High, North Sydney; Dr. T. L. Sullivan, Florence; Sydney Mines Junior High; St. Joseph Elementary, Sydney Mines), reaching nearly 600 students.

A public fossil display and information centre, titled *Richard Brown & Family: Rocks, Fossils and Plants* was set up at the New Deal Development offices in Sydney Mines for the summer months, staffed by two students and supported by the Department of Natural Resources. The loan of fossil specimens and interpretative assistance were provided by Dr. Erwin Zodrow and the author.

Accessibility of the fossil cliffs adjacent to Shore Road in Sydney Mines, from which the concept of an interpretive centre first derived, remains a concern. The narrow, intertidal exposure on which to walk at the base of the overhanging cliffs remains a safety issue which has been recognized, but as yet unresolved. The area abounds with coastal exposures, however, providing alternate sites of geological and historical interest. These include standing fossil trees at the same stratigraphic horizon west of Cranberry Head and the serendipitous exposure nearby of a peat bog, the precursor to coal, where it endures erosion on the sea cliffs. These interpretive possibilities are currently being evaluated for the Sydney Coalfield Fossil Society by geologists Don MacNeil (DNR Cochrane) and Lynn Baechler with input from Erwin Zodrow and the author. A scientific paper describing the original section of Richard Brown and its fossil flora is in preparation, a collaboration between the author and A. C. Scott, of the Royal Holloway, University of London.

**Challenges and Solutions**

Community development agencies will encounter challenges as they move toward realizing opportunities presented by the fossil heritage in their areas. Some of these challenges include the following.
Protection and sustainability of the fossil resource. This is the requisite starting point for any community based activity, and sites are protected under authority of the Special Places Protection Act.

Co-operation versus competition between communities concerned. It will be important to avoid duplication in the treatment of the subject matter covered at each site. The scientific overview provided by the Department of Natural Resources can help in this regard. Competition between communities for funding is yet another area of potential conflict that will require close linkages between community development groups and funding agencies.

Economic viability. Self sufficiency will require new funding strategies in the absence of government subsidy. Possibilities include corporate and private sponsorship, phased development, and revenue-generating programs.

Imaginative thinking. In the face of diminishing public funding and global competition for the increasingly astute tourist, it will be a challenge to develop innovative programs at each site and solutions to long-term financial viability. It will not be good enough simply to build an unimaginative facility and assume that people will come 'just because it is there'.

The province can help community development agencies in meeting some of these challenges by: (1) providing expertise in paleontology, interpretation, economics and tourism; (2) identifying resources that can be cost-shared between community development agencies; (3) fostering community stewardship of fossil sites; and (4) developing and promoting a provincial (or broader) concept. The concept of a Nova Scotia 'Fossil Trail', linking and promoting the various sites, is an example of a provincial concept that could deliver considerable assistance to communities. Community
based projects of various scales, from simple guided walks without infrastructure to larger sites with interpretive centres, could participate, with the existing Nova Scotia Museum facilities serving as anchors. A ‘Fossil Trail’ may hold the key to strengthening the region’s appeal and natural history resources rather than having individual sites compete with one another for the same resources of funds and visitors. Discussions between the departments of Economic Development, Natural Resources, and Tourism and Culture have begun to plumb the possibilities of such a concept.

Perhaps the most valuable assistance that the province can provide is open-minded support for imaginative approaches to funding and development by the rural communities of Nova Scotia.

References


