Foreword

S. BRIAN McCANN (1935-2004)

The geomorphology community experienced a great loss on January 30, 2004 when Dr. Brian McCann passed away at age 68. Brian's knowledge and love of coastlines motivated his research leading him to undertake extensive work on all of Canada's coastlines. His studies took him from the islands of the High Arctic to Atlantic Canada to fjord deltas on the west coast, and to the shorelines of the Great Lakes. No other Canadian geographer can claim to have such an in-depth knowledge and understanding of Canada's coastal geography.

Brian completed B.Sc. degrees in geography (1957) and geology (1958) at the University of Wales, and a Ph.D. (1961) in geomorphology at the University of Cambridge in England. After seven years lecturing in the Department of Geography at the University College of Wales in Aberystwyth, Brian moved to McMaster University in 1967 where he completed 30 years of service to geography in Canada.

When he first came to Canada in the late 1960s, Brian and his graduate students began some of the first studies of Arctic beaches. His investigations on Devon and Cornwallis Islands, and later at Frobisher Bay (Iqaluit), helped to shed light on the effects of permafrost and ice push on the beach environment. In the 1970s, Brian focused on the sand beaches of the Maritimes. He studied sandspits, barrier islands and dunes at Hog Island and Malpeque Bay on Prince Edward Island, at Kouchibouguac Bay in New Brunswick, in Les Îles de la Madeleine of the Gulf of St. Lawrence, and on Sable Island off Nova Scotia.

Seven doctoral and 19 master's students completed their theses with Brian. Of the 19 M.Sc. students, seven continued their studies at the Ph.D. level. Ten of the students whom he supervised are now faculty members; eight in Canadian universities, and an additional two in universities in the UK and Australia.

Brian was truly a geomorphologist of great breadth. Most would recognize him as a coastal geomorphologist, but Brian's knowledge of geomorphology and of landscape allowed him also to make important contributions to the fluvial, periglacial and glacial geomorphology of the High Arctic. In his career, he wrote 11 chapters in books and published approximately 60 refereed papers.

Brian undertook a range of professional and scholarly activities ranging from working as associate editor of the Canadian Journal of Earth Sciences (1981 to 1990), to participation for 25 years as a member of the Editorial Board of Applied Geography, to writing the annual review of progress in coastal geomorphology and sedimentology for the Journal Progress in Physical Geography. He also participated in an advisory capacity as a member of the Advisory Committee on Arctic Land Use Research of the Department of Indian and Northern Affairs and, in its first four formative years, he was a member of the Committee for the Professional Registration of Geoscientists in Ontario, upholding the interests of geographers. Brian made major contributions to the organization of at least three conferences. In 1980, he edited "The Coastline of Canada", a refereed conference volume published by the Geological Survey of Canada. In 1987, he was responsible for the Annual Meeting of the Canadian Association of Geographers (CAG) held at McMaster University, and in 1993 he was co-organizer of the Third International Conference of Geomorphology, also held at McMaster University. Approximately 700 participants attended this latter conference which clearly established Canada as an important contributor in the area of geomorphological research.

In addition to his research activities, Brian was active in administration at McMaster University. From 1985 to 1991, he was Chair of Geography, a task he undertook with considerable commitment. Because of the excellence of his leadership, he was pressed into service again as Acting Chair in 1994-1995. Colleagues, and also those who were students during his tenure as Chair, speak very highly of his concern for them as individuals. He was always willing to take time to assist students in achieving the best in their studies, and to provide wise counsel when they were making career decisions.

A dedicated teacher, who made valuable contributions from first-year undergraduate to the graduate level, Brian was particularly effective in the field. He was always prepared to run small field trips for his classes, even the large first-year classes, and he often gave up part of his weekends to do this. In addition, for many years he ran a one-week field course in Cape Cod which provided an important educational experience for many McMaster University undergraduates. Brian's greatest strength was his ability to demonstrate to students how to conduct fieldwork. He enjoyed explaining to them the complex relationships between air, land and water on our planet, thereby inspiring them to appreciate the wonders of Earth-surface processes.
For his academic contributions, Brian was presented with the “Service to Geography in Ontario” award by the Ontario Division of the Canadian Association of Geographers in 1996. The following year, he was a worthy recipient of the CAG Award for “Service to the Profession of Geography”. His research and his teaching, and his contributions to professional and scholarly organizations have helped to shape the science of geomorphology in Canada. He was a teacher, scholar, mentor and friend for a whole generation of physical geographers in Canada.

Mary-Louise Byrne and Phil Howarth

Introduction

COASTAL AND NORTHERN PROCESSES, LANDFORMS, AND SEDIMENTS

In this issue of Géographie physique et Quaternaire a set of papers recognizing the influence that Brian McCann had on the study of coastal and northern landscapes in Canada is presented. These papers, that provide a snapshot of the studies that Brian’s students and colleagues are undertaking in Canada today, were presented at a jointly sponsored CAG-CGREG conference, held in his honour, in June 2005. The contributions illustrate the breadth of influence his work has had on physical geography in Canada. The first four papers are spearheaded by academic colleagues who taught at Canadian universities during Brian’s career. The final two papers are contributed by former students who now hold academic positions in Canadian universities.

Woo, Mollinga and Smith present information on simulating active-layer thaw in the Boreal environment. The findings demonstrate the sensitivity of active-layer thaw to differential soil material thermal properties, moisture content, and varying inter-annual soil surface temperatures. The model allows active layer thaw responses to be easily assessed for various land uses.

Trenhaile, Porter and Kanyaya offer a new summary of processes acting on shore platforms of eastern Canada. In this field-based study, the authors measured erosion at several locations in the Bay of Fundy and along Gaspé Peninsula. They document the importance of wave quarrying and frost action on shore platform development.

The migration of sand in the nearshore is the focus of the study by Greenwood, Permanand-Schwartz and Houser. This field-based study of sand migration, bar formation and evolution on a Great Lakes shoreline concludes that the primary mechanism for bar initiation and growth in this location was the cross-shore displacement of sediment by wave-driven (oscillatory) transport and cross-shore mean currents (undertow), rather than by longshore current.

Catto contributes a paper that focuses on a field site located on the east coast of Canada. This work, which examines the long-term evolution of a gravel beach in Newfoundland, shows that tropical storm and hurricane activity substantially modify the beach, but that it is difficult to correlate erosional events with hurricane activity. Local factors dominate in beach evolution at this location.

The last two papers present work that focuses on the coastal zone in the Arctic. Dale and Leontowich document the oceanographic conditions and distribution of sediments and biota in the intertidal and subtidal zones of Iqigik Island, Nunavut. They found that few statistically significant trends are evident with respect to the distribution of organisms and depth. However, variations in species, abundances and densities result from local conditions and substrate characteristics.

The final paper examines coastal regions within Auyuittuq National Park Reserve (ANPR). Solsten and Aitken found that archeological sites within these coastal regions are sensitive to mass-movement processes and are threatened by flooding in response to isostatic submergence and global sea-level rise.

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Ad hoc editor