NEW SERIES

GEOHERITAGE

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SUMMARY
Geoheritage, a word that embraces recognition of the continuum between the geological record and cultural values, has gained widespread usage during the past three decades in Europe and Australia, and has attained increasing acceptance since the turn of the century in Asia and North America. By drawing attention to the value of society's understanding of the processes responsible for landscape development as it contributes to an aesthetic appreciation of nature, as well as for practical applications such as mitigating geohazards, this term provides a useful overture to encourage public awareness of the origin, evolution and significance of the abiotic components of our planet. In addition to this educational aspect, the term also provides a focus for establishing and nurturing programs dedicated to geopreservation and geoconservation.

SOMMAIRE
L'usage de l'expression " patrimoine géologique ", dont le contenu sémantique forme un continuum qui va des données géologiques aux valeurs culturelles, s'est largement répandu en Europe et en Australie au cours des derniers trente ans. Et, depuis le début du XXIe siècle, l'expression est de mieux en mieux acceptée en Asie et en Amérique du Nord. Cette expression attire l'attention sur l'importance d'une compréhension communautaire des processus responsables de la formation des paysages parce qu'elle favorise une appréciation esthétique de la nature, ainsi qu'aux applications pratiques comme l'atténuation des géorisques. Cette expression suscite l'intérêt public pour l'origine, l'évolution et la signification des composantes abiotiques de notre planète. Outre cet aspect éducatif, cette expression appelle la réalisation et le soutien de programmes de géopréservation et de géoconservation.

Two internationally important organizations that have geoheritage mandates include UNESCO, which has developed an expanding program for creation of a Global Geoparks Network [http://www.unesco.org/science/earth/geoparks.shtml], and ProGEO, the European Association for the conservation of geological heritage [http://www.sgu.se/hotell/progeo/]. In North America, a summary of the geoheritage movement has been posted by Andrew Alden in his '*Guide to Geology*' website [http://geology.about.com/od/geoheritage]. As an indication of the growing awareness of the economic potential of encouraging citizens, who have little or no formal training in geology, to expand their appreciation of geoheritage, the First Global Geotourism Conference was held, during the summer of 2008, in Fremantle, Western Australia. Three International Geoparks conferences (beginning in 2004) and seven European Geoparks conferences (beginning in 2000) have now been held, and many national and international geoscience organizations include geoheritage sessions in their programs. The 33rd International Geological Congress held in Oslo, August 2008, included several sessions on geoparks and geoheritage, as well as an excursion to the first UNESCO European Geopark in Scandanavia.

Well before geoheritage became an accepted term for the promotion of the geosciences, as well as for action to preserve and protect geologically significant sites, many Canadian geoscientists were involved in establishing a variety of outreach programs that provided the groundwork for acceptance of the geoheritage concept. Worthy of special mention in this regard, Ward Neale was at the forefront of a significant drive in the 1980s to promote geological education at all levels. Ward was a leader in initiating both the Calgary Science Network and the Canadian Geoscience Education Network (CGEN), two key organizations devoted to the promotion of geoscience awareness and curricula development. In 2003, the latter organization adopted geoheritage as a new initiative worthy of support, and CGEN president Fran Haidl worked with Québec organizers, Serge Perrault and Pierre Verpaelst, to bring together a diverse group of speakers for a two-day Geoheritage Symposium, during the 2008 Annual Meeting of the Geological Association of Canada (GAC), in Québec City. This gathering, complemented by a field excursion to view building stones of the Québec Citadelle, proved to be a resounding success.

Although Europe, Asia and Australia remain well ahead of Canada in promoting geoheritage, the papers presented at the Québec (GAC) Geoheritage Symposium have demonstrated that the Canadian geoheritage movement is gaining momentum. Some of these papers have been

accepted for sequential publication as a Geoheritage Series in *Geoscience Canada*, commencing with this issue. The first paper is a summary version of the invited introductory talk presented by Murray Gray. His paper offers an impressive overview of geodiversity, a word introduced in 1992 to provide a term for the geosciences that biodiversity provides for the biological sciences. In reaching out to the public, this parallel term has proven to be particularly helpful for promoting geoheritage. Additional papers in this series will deal with various aspects of geoheritage education not only in schools, but also via publications, museum and conference displays, lectures and field excursions. The state of geoheritage protection and preservation through laws and governmental programs also will be evaluated, as well as progress in the creation of local, national and international parks and park programs.

I first became aware of the importance of the nascent geoheritage movement in 2001, while evaluating, with like-minded geoscientists, ways to develop an outreach program in Ottawa. The Ottawa–Gatineau Geoheritage Project was the outcome, and it offered talks and guided geotours to increase public awareness of the importance of the geosciences. Since that time, the casually organized group has expanded to include 12 members with diverse experience in proselytizing the wonders of geology to anyone interested. Table 1 lists a sampling of concepts that are essential to appreciating the origin and evolution of landscapes and these have been introduced during our presentations to school, church, service and retirement groups. The project continues to set up posters and displays during annual municipal Open-House sessions and the annual Ottawa Gem and Mineral Show; it also creates posters, brochures and displays specific to particular sites of interest, such as Pinhey's Point and Petrie Island on the Ottawa River, and the Chamber of Commerce in Almonte, 40 km west of Ottawa. The project is well received and enthusiastically supported by nature-based groups, such as associations of field naturalists, rock-garden enthusiasts, and the international Riverkeeper and Waterkeeper organizations. To raise awareness of the importance of preserving unique geosites, presentations have been made to the City of Ottawa Planning Group, and to the Board of Governors of the National Capital Commission. Perhaps Murray's paper on geodiversity, and other papers forthcoming in this Geoheritage Series, will inspire others to initiate additional geoheritage programs elsewhere in Canada.

Table 1. Concepts essential to appreciating the origin and evolution of landscapes.

Geological Time
Actualism
Rock Cycle
Lithification: Sediment vs Sedimentary rock
Original Horizontality of Strata
Lateral Continuity of Strata
Superposition of Strata
Cross-cutting Relationships
Principle of Inclusions
Biological Evolution, Index Fossils
Stratigraphic Correlation