

## UNESCO GLOBAL GEOPARK NETWORK (GGN)... ABSTRACT

Beginning in 1998, the UNESCO Global Geopark initiative now extends to 33 countries and features 120 “Parks”. Canada is a signatory member of UNESCO. The federal government has assigned the task of overseeing Geopark development to the Canadian Federation of Earth Sciences.

The Geoparks are becoming very popular worldwide, due to their combination of conservation, sustainable development, and community involvement. The single constant is the requirement for each park to exhibit “significant geological heritage”. As such, many of the Parks are developed in former (and active) mining regions.

In Canada there are currently 2 recognized Global Geoparks. They are “Stonehammer”, located at St. John NB, where the focus is on plate tectonics, fossils, glaciation, geological education, and adventure tours. The second site is “Tumbler Ridge”, in northeastern BC, within an active coal mining region, where the focus includes dinosaur tracks, waterfalls and mountain hiking. A number of other mining communities are currently being considered, such as the Fort Mc Murray area (Wood Buffalo), Sudbury, and the Temiskaming Rift Valley of Ontario and Quebec.

The GGN has a particular interest in developing (or maintaining) a sustainable economy that is based on geotourism in regions that have a strong mining heritage. This is featured most prominently in the “Tuscan Mining Park”, in Italy. Centuries of active mining ended in the 1990’s, but educational geological and mining tours of the former mines and smelters have replaced some of the lost jobs.

CLRA members have always worked toward the protection and redevelopment of the natural environment following mining activity. Members should now consider redirecting part of their activities to the redevelopment of a **sustainable economy** that is based on the geological assets of former Canadian mining regions. To this end, a link with the GGN could prove effective.

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# INTRODUCING THE UNESCO GLOBAL GEOPARK NETWORK

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“UNESCO” is the acronym for the “United Nations Educational, Science, and Cultural Organization”. Canada is a signatory member of this international body and actively participates in UNESCO programs.

Established in 1998, the UNESCO Global Geopark Network (GGN) now involves 120 Geoparks spread out over 33 countries. As of June, 2016, there are two full-fledged UNESCO Global Geoparks in the “Canadian Geoparks Network” (CGN) plus an additional ten “Aspiring” Canadian Geoparks that are in various stages of development.

Our lives are shaped by geology and landscape. Collective decisions on where we settle, the crops we grow, the water resources that we require, the climate itself, all resonate back to geological opportunities...and limitations. Those of us who are directly linked to the extractive resource industry are well aware that what we mine, the energy resources that we chose to use, and the natural hazards involved in procuring these resources, are directly linked to geology.

But what is the geological awareness level of the general population (in any country)? Are they knowledgeable of the implications of geology in their lives? UNESCO advisory staff looked at this issue in the closing years of the last century and came to the conclusion that no, the essential components of “Earth Science” understanding were not sufficiently present in the public domain on a global level.

Previous experience with “The Man and the Biosphere Programme”, created in the early 1970’s by UNESCO, was highly successful. Hundreds of sites in more than a hundred countries became the “World Network of Biosphere Reserves”. These closely managed facilities are places for learning about sustainable development, as it relates to the human connection to biology. Similarly, the UNESCO “World Heritage Sites” initiative promotes the conservation of natural and cultural sites of outstanding universal value.

Could a new program be developed for the Earth Sciences as a whole, through actively engaging with local communities, with the aim of educating the global population about global geodiversity? The vision included the concept that Geoparks would be of significant size, and would have the potential to include both Biosphere Reserves and World Heritage Sites within the parks boundaries.

## **THE ESTABLISHED CRITERIA**

There are four basic features that are fundamental for the development of a Geopark. These standards must be met and confirmed by representatives of the country that nominates a specific park to the Global Geopark Network.

- **GEOLOGICAL HERITAGE** of international value, based on peer-reviewed, published research on the areas geological sites, must be proven to exist.
- **MANAGEMENT** by a body having legal existence that is recognized under national legislation must exist. It will be represented by all relevant local and regional authorities and principal private partners. The organization must develop a comprehensive management plan to protect the landscape and conserve cultural identity.
- **VISIBILITY** to visitors, as well as the local population must exist, in order to promote sustainable local economic development, primarily through Geotourism and Agritourism. It is important to establish a corporate identity.
- **NETWORKING**, both on the National and International scale is obligatory in order to be a member of the UNESCO Global Geopark Network (GGN). By working together across borders, the GGN contributes to increasing understanding among different communities and enhances peace-building processes.

Criteria satisfaction is evaluated during biennial meetings of the International Conference on Geoparks, which also is in charge of undertaking periodic reviews.

## **TOP 10 FOCUS AREAS OF UNESCO GLOBAL GEOPARKS**

### **Natural Resources**

UNESCO Global Geoparks inform people about the sustainable use and need for natural resources, whether they are mined, quarried, or harnessed from the surrounding environment, while at the same time promoting respect for the surrounding environment and the integrity of the landscape.

### **Geological Hazards**

The promotion of awareness for local geological hazards, including volcanoes, earthquakes and tsunamis, may help prepare populations by developing disaster mitigation strategies. These efforts build important capacity and contribute to the development of more resilient communities that can effectively respond to disaster.

### **Climate Change**

Geoparks may hold the history of ancient climate change in the geological record, and the facilitators can be the educators on current climate change. The Geoparks can influence best practices for the population by utilising renewable energy and employing

the best standards of “green tourism”. Such community and educational activities or projects are important to raise awareness on the potential impact of local climate change

## Education

All UNESCO Global Geoparks must develop and operate educational activities for all ages in order to spread awareness of our geoheritage and its links to other aspects of our natural, cultural, and intangible heritages. Education can be offered in both formal and informal packages, and can be designed in a format that will allow both adults and retired people the opportunity to teach others.

## Science

Geoparks are encouraged to work with academic institutions to engage in active scientific research in the Earth Sciences, and other disciplines as may be appropriate, to advance our knowledge about the earth and its processes. In addition, a Geopark must take great care not to alienate the public from science, and must avoid the use of technical jargon in programs aimed at attracting the interest of the general public.

## Culture

UNESCO Global Geoparks are fundamentally about people, and about exploring and celebrating the links between communities, our practices, and the Earth. Many Geoparks have strong links to the arts communities, which allow the synergy released by the constructive arts and science combination, to become active in a unique manner. Mythology, folklore, building traditions and farm practices all come into play.

## Women

The Global Geopark Network has a strong emphasis on the empowering of women through focussed education programmes and through the development of women's cooperatives. Geoparks are a platform for the development of sustainable local cottage industries and craft products. Women often operate accommodation services for visitors.

## Sustainable Development

Despite the presence of important geological heritage, it is equally important that the area has a plan for the sustainable development of the people who live there. This may take the form of sustainable tourism activities, or sustainable agriculture and food tourism. UNESCO Global Geopark status does not imply restrictions on ANY economic activity that complies with indigenous, local, regional, and/or national legislation.

## Local and Indigenous Knowledge

Geoparks actively involve local and indigenous peoples, preserving and celebrating their culture. Local and indigenous knowledge, practices, and management systems, alongside science, are included in the planning and management of the Global Geopark.

## Geoconservation

UNESCO Global Geoparks are areas that use the concept of sustainability, value the heritage of “Mother Earth”, and recognize the need to protect it. The defining geological sites in UNESCO Global Geoparks are protected by indigenous, local, regional, and/or national law and appropriate management authorities and agencies that will provide the necessary monitoring and maintenance of these sites. However, Global Geoparks do not interfere with the removal of geological material from licensed mines, quarries, etc. that are subject to regulation under national and/or international legislation.

## UNESCO GLOBAL GEOPARKS AND MINING

Most member Geoparks have incredible geologic landscapes to enjoy, but they do not have an active history in quarrying or mineral extraction. However, the small subset that does represent the international mining industry provides a glimpse into the potential of incorporating mining heritage into the developing field of sustainable Geotourism. There are clear indications that the UNESCO Global Geopark Network is concerned about the loss of employment opportunities and cultural values when a long term mining region is permanently closed. However, there is economic value in mining heritage.

Could the GGN be suggesting that mine reclamation specialists need to do more than secure a minesite from pollutant discharge while re-establishing traditional vegetative cover? Are they saying that mine reclamation includes the re-establishment of meaningful, sustainable economic opportunities among the long term residents in a traditional mining town? Does the UNESCO Global Geopark initiative indicate that there are values to be consciously preserved in the infrastructure of the mining complex, as well as in the infrastructure of the surrounding communities themselves?

The answer may be in the evaluation of mining and quarry areas that are part and parcel of a current regional Geopark. Here is a list of Global Geoparks that involve various levels of mining history and should be researched (on the internet) by individuals involved in mineland reclamation.

Tuscan Mining Park UNESCO Global Geopark (Italy)

Geological and Mining Park of Sardinia UNESCO Global Geopark (Italy)

Troodos UNESCO global Geopark (Cyprus)

Swabian Albs UNESCO Global Geopark (Germany)

Bakony-Balaton UNESCO Global Geopark (Hungary)

Ore of the Alps UNESCO Global Geopark (Austria)

Terras de Cavaleiros UNESCO Global Geopark (Portugal)

Copper Coast UNESCO Global Geopark (Ireland)

Idrija UNESCO Global Geopark (Slovenia)

Karawanke/Karawanken UNESCO Global Geopark (Slovenia/Austria)

Yanqing UNESCO Global Geopark (China)

Tumbler Ridge UNESCO Global Geopark (Canada)

## **PRESENT AND FUTURE UNESCO GLOBAL GEOPARKS IN CANADA**

To assist in Geopark development, Canada initiated the Canadian National Committee for Geoparks (CNGG) in 2009. The first Geopark to achieve international recognition was Stonehammer, in 2011, located at St. John, New Brunswick. It was followed by Tumbler Ridge in 2014, located in north-eastern British Columbia.

Membership of the CNGG comes from all parts of Canada. The CNGG assists Geopark proponents in the development of plans, advising on the strengths and weaknesses of Aspiring Geoparks in Canada. Figure 1 outlines the Canadian Geopark Network as it was defined in early 2016, with 2 fully accredited UNESCO Global Geoparks and 10 Aspiring Canadian Geoparks.

The UNESCO Global Geopark program is a long term venture. As only 2 Geoparks in any one nation can achieve international recognition in any given year, it will be a long time before there are representative sites in every Province and Territory. This is a primary reason why Canada should look at developing Geoparks that are much larger in size than what is normal in most parts of the world.

Note that this program is dependent on individual citizens, community organizations, not-for-profit agencies, and private companies to take the initiative and develop Geopark projects. These are “grassroots” projects. They do not originate in the offices of Federal, Provincial, or Territorial governments, although the support and cooperation of these organizations is essential in the long term. All Provincial governments have staff who are familiar with the program.

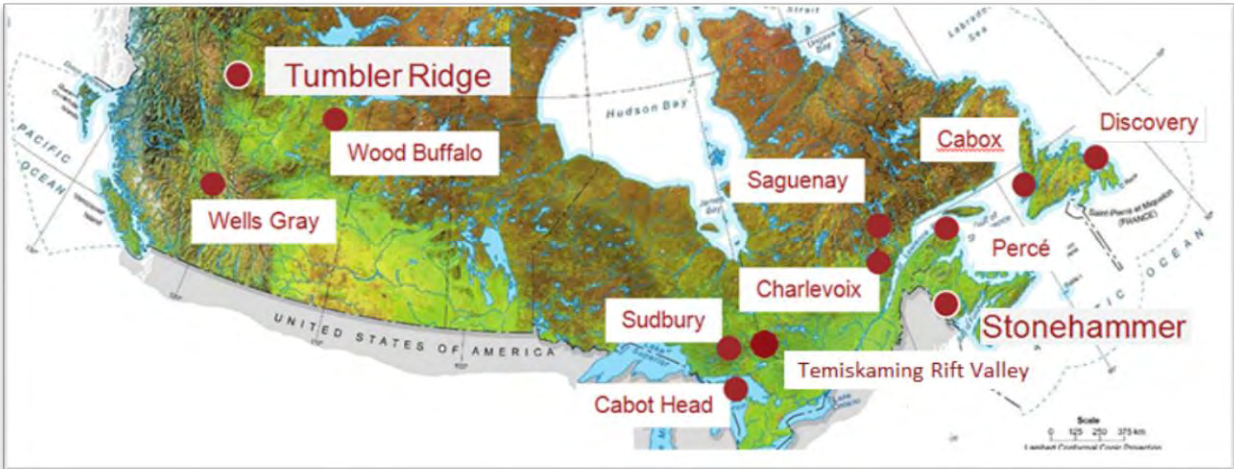


Figure 1: UNESCO Global Geoparks and Aspiring Canadian Geoparks

## THE OPPORTUNITY FOR CLRA

When the Canadian Land Reclamation Association originated in the mid 1970's, there was a vision that the organization would bring all elements of land reclamation science together in one professional network. However, in reality, the science had not progressed much further than the focus of the original Ontario Cover Crop Committee at the University of Guelph.

Science is progressive and reclamation professionals now evaluate a whole host of new technologies in an effort to build the most suitable reclamation plan for each individual project. Most research is done with the goal of enhancing the biological opportunities for the renewal of the derelict site. However, UNESCO, through the Global Geopark initiative, is suggesting that there is another component in (mine) land reclamation that needs to be addressed. That is the requirement of developing sustainable human opportunities in the shadow of abandoned mine operations. This is a cultural need of humans, who are also part of the biosphere.

A century ago, mine operators abandoned projects without thought, when ore turned to waste. Environmental consideration had not yet evolved. Workers were left to fend for themselves as best they could. Today, most governments encourage the eradication of all traces of a mines existence, in addition to the necessary protection of the biosphere from pollutants. Workers are financially encouraged to retrain for new careers and move.

But through it all, the human community that is left behind remains culturally linked to the reason for its original existence. They are mining towns with a proud history, inhabited with the offspring of generations of miners. To destroy all evidence of their cultural heritage is an affront to those who stay and try to achieve a sustainable way of life in their home town, in their geoheritage. UNESCO suggests this idea to be valid.

In Cobalt, Agnico Eagle recognized that there is a human need for this community to maintain its mining heritage. As part of its corporate commitment to the community, the company representatives are expanding their reclamation planning to allow for geotourism opportunities. As such, there is a direct link being created between Cobalt and the historic mining communities of Europe, who are finding a new future as part of the UNESCO Global Geopark Network.

Cobalt will be a core community in Temiskaming Rift Valley Aspiring Canadian Geopark.

CLRA members and the organization itself have the opportunity to evolve over the next few years and align reclamation activities more closely to the human cultural needs in former mining communities. The public has invested heavily in the infrastructure that supported the mines. Reclamationists are well positioned to broaden their scope to include a sustainable future for mine communities, as an integral component of a successful land rehabilitation project.

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# **41<sup>st</sup> CLRA National Annual General Meeting and Conference**

McIntyre Arena, Timmins, Ontario

June 26-29, 2016

## **PROCEEDINGS**



Canadian Land Reclamation Association  
Association canadienne de réhabilitation des sites dégradés