

## **Riding Mountain Biosphere Reserve/UNESCO**

### **Backgrounder**

We need to be reminded that we are part of a large and encompassing picture and that there are many issues that are facing agriculture and industry and both the rural and urban community. If we strive to create and maintain healthy ecosystems and communities the economic side of things should then be able to take care of itself.

One of the issues facing the Riding Mountain Biosphere Reserve is that of a fairly low public profile. In the past we've worked primarily in the background on issues of concern in the biosphere. We've been involved in encouraging and supporting issues of beaver, Tb, elk movement, wolf research, species at risk and corridor establishment, climate change and land change over time, educational outreach and eco and agri-tourism.

But many folks - who live in and around the BR don't know what a BR is let alone that they live in or near one or what they are all about. Some people think that we are only about "tree hugging" (although personally I do think it is extremely therapeutic to go out and lay in the grass or a meadow from time to time or run your fingers through the dirt and even give a tree a hug to remind ourselves now and then that there is more to life than work and that there is so much about this world that we do not know) and others believe that we are a regulatory body that will tell folks what they can or cannot do. Not true – Biosphere Reserves have no regulatory power. The RMBR is concerned about biodiversity, healthy sustainable ecosystems and healthy sustainable communities. We hope that through providing reliable information the people will make good, informed decisions, whatever the issue.

The following is a brief background about the concept of Biosphere Reserves, how it got started and how, as we proceed into the future while we are focused on our small part of the "biosphere" we are part of a much broader picture.

### **Background - United Nations, UNESCO, Man and Biosphere, Biosphere Reserves, Goals, Strategies and Conventions**

#### **United Nations**

The [United Nations](#) is one of the world's most important intergovernmental organizations. It includes 192 sovereign countries or Member States, representing virtually every country in the world. Founded in 1945, just after the conclusion of World War II, the goal of the United Nations was to maintain international peace and security, develop friendly relations among nations and promote social progress, better living standards and human rights.☐

## **What is UNESCO?**

Headquartered in Paris, France, UNESCO was founded in 1945, shortly after the U.N. came into existence. UNESCO is the U.N.'s lead agency on matters relating to education, the sciences, culture, and communications. UNESCO has the following functions with respect to its four areas of interest:

- 1. To serve as a laboratory of ideas**” encouraging new thinking and continuing reappraisal of current international concerns;
- 2. To be a clearinghouse for information**, especially by trying to identify the most successful solutions to problems;
- 3. To help set standards for international agreements** (including treaties) and, in some cases, to act as the secretariat (executive body) for these international agreements and treaties; and
- 4. To provide technical expertise** to the national governments that are members of the United Nations.

## **Man and Biosphere**

### **What is the Man and the Biosphere (MAB) Program?**

The UNESCO Biosphere Conference in 1968 brought together representatives of government and non-governmental organizations to consider what should be done about threats to the biosphere that were being increasingly perceived by U.N. Member States. The delegates agreed that all governments should join in a broad, research-oriented program to reverse the trend. It was emphasized that establishment of reserves was important to meet scientific, educational, cultural and recreational needs. This came to be known as the biosphere reserve project.

MAB was launched in 1970, and was formally endorsed by Member States at the U.N. Conference on the Environment (the first Earth Summit<sup>®</sup>) in 1972. The original aim of MAB was to establish protected areas representing the main ecosystems of the planet in which genetic resources could be protected and research and monitoring could be carried out. These protected areas were to be called Biosphere Reserves<sup>®</sup> in reference to the MAB programs name.

### **Has the MAB program changed its objectives since it was formed?**

Like all scientific programs, MAB has been refined over the years but still is committed to its original aims. Today, MAB is a set of related scientific research projects with three focuses:

- **Minimizing the loss of biological diversity;**
- **Making people aware of how cultural diversity and biological diversity affect each other; and**
- **Promoting environmental sustainability through the World Network of Biosphere Reserves.**

## Biosphere Reserves

**Biosphere reserves are designed to deal with these central questions: how can we reconcile the conservation of biodiversity and biological resources with their sustainable use?**

An effective biosphere reserve involves natural and social scientists; conservation and development groups; management authorities and local communities - all working together on this complex issue.

**The biosphere reserve network was launched in 1976 and, as of May 2008, had grown to include 553 reserves in 107 countries.** The network is a key component in MAB's objective for achieving a sustainable balance between the sometimes conflicting goals of conserving biological diversity, promoting economic development and maintaining associated cultural values. Biosphere reserves are sites where this objective is tested, refined, demonstrated and implemented.

Biosphere reserves are "areas of terrestrial and coastal/marine ecosystems, or a combination thereof, which are internationally recognized within the framework of UNESCO's Programme on Man and the Biosphere (MAB)". Reserves are nominated by national governments; each reserve must meet a minimal set of criteria and adhere to a minimal set of conditions before being admitted to the Network.

**Each biosphere reserve is intended to fulfill three complementary functions:**

- 1. a conservation function, to preserve genetic resources, species, ecosystems and landscapes;**
- 2. a development function, to foster sustainable economic and human development, and**
- 3. a logistic support function, to support demonstration projects, environmental education and training, and research and monitoring related to local, national and global issues of conservation and sustainable development.**

Physically, each biosphere reserve should contain **three elements: one or more core areas**, which are securely protected sites for conserving biological diversity, monitoring minimally disturbed ecosystems, and undertaking non-destructive research and other low-impact uses (such as education); **a clearly identified buffer zone**, which usually surrounds or adjoins the core areas and is used for co-operative activities compatible with sound ecological practices, including environmental education, recreation, ecotourism, and applied and basic research; **and a flexible transition area, or area of co-operation**, which may contain a variety of agricultural activities, settlements and other uses, and in which local communities, management agencies, scientists, non-governmental organizations (NGO), cultural groups, economic interests and other stakeholders work together to manage and sustainably develop the area's resources.

## **Riding Mountain Biosphere Reserve - overview**

- Designated in 1986 through application from three levels of government – municipal, provincial and federal – to UNESCO in Paris
- only 1 Biosphere Reserve in Manitoba, 15 Biosphere Reserves in Canada, 553 in 107 countries world-wide
- core protected area is Riding Mountain National Park (3000 sq km), zone of cooperation (12,000 sq km) includes 15 Rural Municipalities that surround the park
- 28,000 people live in Riding Mountain Biosphere Reserve
- Important land feature is that it is a confluence of three ecozones – boreal forest, mixedwood forest and prairie grasslands

In light of the background that you've just read, Riding Mountain Biosphere Reserve, while seemingly a relatively small area for our concerns regarding knowledge and research, is actually part of a much broader network of people and organizations with similar interests in many parts of the world. The research and monitoring that is done within this Biosphere Reserve feeds into a much larger body of work that is disseminated nationally and internationally and in many cases is used as a template for similar studies throughout the world.

In order to guide all Biosphere Reserves in the type of research that is imperative to reach their goals, several strategies have been put into practice over the years – In 1983, UNESCO and the United Nations Environment Programme (UNEP) convened in Minsk (Belarus). The Congress's activities gave rise in 1984 to an "Action Plan for Biosphere Reserves". In 1995 at the International Conference on Biosphere Reserve in Seville (Spain) the Seville Strategy was developed and in 2008 at the 3rd World Congress of Biosphere Reserves in Madrid (Spain) came the document known as the Madrid Action Plan (MAP).

### **The Madrid Action Plan (MAP)**

The MAP aims to raise BRs to be the principal, internationally designated areas dedicated to sustainable development in the early 21st century. The focus is on developing models for global, national and local sustainability, and for BRs to serve as learning laboratories and platforms for policy professionals, research and scientific communities, management practitioners and stakeholder communities to work together to translate global principles of sustainable development into local relevant practices.

The biosphere reserve (BR) concept has proved its value beyond protected areas and is increasingly embraced by scientists, planners, policy makers and local communities to bring a variety of knowledge, scientific investigations and experiences to link biodiversity conservation and socio-economic development for human well-being.

During the years since the adoption of the Seville Strategy, global issues and problems have emerged or intensified, making it an imperative for the MAB Programme to adapt and change so as to effectively respond to these emerging challenges.

These major challenges seriously further exacerbate poverty and inequality and include:

- Accelerated climate change with consequences for societies and ecosystems;
- Accelerated loss of biological and cultural diversity with unexpected consequences that impact the ability of ecosystems to continue to provide services critical for human wellbeing;
- Rapid urbanization as a driver of environmental change.

The Madrid Action Plan articulates actions, targets and success indicators, partnerships and other implementation strategies, and an evaluation framework for the WNBR for the period of 2008 to 2013.

## **Goals**

MAP's overall goals are to:

- a) anchor the research, training, capacity building and demonstration agendas of MAB at the interface between the interlinked issues of conservation and sustainable use of biodiversity, mitigation and adaptation to climate change, and socio-economic and cultural well-being of human communities;
- b) enable the active use of places included in the WNBR as learning sites for sustainable development, i.e. demonstrating approaches to enhance co-operation amongst epistemic (academic), political, practitioner and stakeholder communities to address and solve context specific problems to improve environmental, economic and social conditions for human and ecosystem well-being;
- c) collect, collate, synthesize and disseminate lessons learnt from more than 30 years of the work of the MAB Programme and the WNBR as well as their planned actions during 2008-2013 to benefit international, national and local efforts to meet global targets, significantly reducing the current rate of biodiversity loss by 2010 that are linked to mitigating and adapting to global climatic change; and) contribute to the emergence of a new generation of professionals and practitioners who can serve as ambassadors and managers/ coordinators for linking global environmental agendas to national and local development aspirations.

**The major challenges tackled by MAP are:**

### ***1) Ecosystem-wide pressures from global urbanization***

- a. Rapidly changing and spatially shifting population densities, e.g. half of the world's population today lives in urban landscapes, a proportion projected to increase to 66% over the next 50 years
- b. Urbanization as a most complex mosaic of land cover and multiple land uses which creates significant knowledge gaps
- c. Sustainable urban planning is vital

## **2) Impacts of climate change on societies and ecosystems**

- a. UNFCCC (United Nations Framework Convention on Climate Change) and its scientific panel IPCC (Intergovernmental Panel on Climate Change) is confident that the accelerated changes to our climate are anthropogenic – caused by humans
- b. A rise in mean global temperature greater than 2 degree Celsius will mean that two billion people across the globe will face water shortages and at least 40 million more people will be exposed to malaria in Africa. – who would have thought that West Nile would be an issue in Manitoba 20 years ago
- c. 30% of species will be put at risk of extinction, desertification will increase, positive feedback mechanisms in the climate will further reduce tropical forests

## **3) Accelerated loss of biological and cultural diversity with system shifts and unexpected consequences that impact the ability of ecosystems to provide services critical for human well-being.**

- a. Support by ecosystems will become more critical, e.g. nutrient cycling, soil formation and primary production
- b. Provision of ecosystem services is not guaranteed, e.g. food, fresh water, wood and fiber and fuel
- c. Regulation is changing, e.g. climate, flood and disease, water purification
- d. Cultural function is put at risk, e.g. aesthetics, spirituality, education and recreation

## **ACTIONS**

### **1. COOPERATION, MANAGEMENT AND COMMUNICATION**

Biosphere reserves are the principal means for achieving the objectives of the MAB Programme and the visible instrument through which UNESCO as a whole could demonstrate its commitment to sustainability through policy-relevant site-based research, capacity enhancement and demonstration.

### **2. ZONATION – LINKING FUNCTIONS TO SPACE**

While we know that , biosphere reserves should contain one or more core areas, buffer zones, and a transition area (area of cooperation) to accommodate their multiple functions with new challenges, it is important to shift towards a more integrated zoning. The transition area – area of cooperation, in addition to the development function, can also consider conservation/environmental goals and elements. Equally the core area, in addition to its conservation function, contributes to a range of ecosystem services which, in terms of the development functions, can be calculated in economic terms (e.g. carbon sequestration, soil stabilization, supply of clean water and air, etc.).

### **3. SCIENCE AND CAPACITY ENHANCEMENT**

Ecosystems provide goods and services to all humanity, but the sustainable use of these benefits is challenging in the face of rapid climatic, environmental, social, and political changes.

To cope with these changes, biosphere reserves play a crucial role in generating knowledge on how natural systems work and how to maintain ecosystem services and resilient ecosystems while at the same time using these systems to create income, employment and wealth.

Wide cooperation from institutions and stakeholders is needed within biosphere reserves to foster communication among scientists, policy makers, private companies and others. In order to achieve this, there is a need for a significant strengthening of both science and capacity in the WNBR also with a view to applying scientific expertise to global biodiversity management and conservation.

Both scientific as well as traditional knowledge from local and indigenous people is needed for adaptation to change and building resilience.

Biosphere reserves provide an excellent opportunity to play an active role as learning sites for sustainable development in order to implement national policies and strategies for the Decade for Education on Sustainable Development.

Relevant national, regional and global authorities should be encouraged to use biosphere reserve management issues and problems as research questions for multi-disciplinary institutes of higher learning.

#### **4. PARTNERSHIPS**

At all times, the strength and opportunity of partnerships should be drawn upon to cooperatively develop the functions of a biosphere reserve. There is a need to focus efforts on building and improving upon existing partnerships and alliances, championing new initiatives, and creating new partnerships and projects that involve many stakeholder groups. Cooperative activities range from biodiversity conservation to ecosystem management and sustainable use of environmental goods and services.

The 'added value' of partnerships is improved effectiveness of management strategies, change of attitude within the stakeholders themselves, better mutual understanding, more informed decision making, increased awareness, and technical and financial support of the management of a biosphere reserve.

**The Riding Mountain Biosphere Reserve  
is part of a world of good people doing a world of good.**

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