

TALK AT COLUMBIA FALLS, MONTANA  
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TOWARD A CROWN OF THE CONTINENT BIOSPHERE RESERVE  
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OVERVIEW

The 1980s will probably go down as the decade when the biosphere became a political reality. By the end of the decade, there was no longer any possibility of ignoring the global nature of human impacts. The hole in the ozone layer, pollution of the planetary seas, loss of biological capital, and climate change became etched in the global consciousness as planetary problems. These problems affect everyone through their effects on the biosphere--the Earth's living envelope where Homo sapiens is now, by any measure, unchallenged dominant force for change. Global change--the catch-all for the sum of these influences--will ultimately have to be addressed where it began, in each locality where decisions on the use of resources are made.

It seems obvious that we will need to have models for making sensible decisions locally that can be useful at larger scales. The Crown of the Continent region can be especially valuable in this respect for several reasons. It has outstanding conservation values that guarantee the interest of the conservation community. It has long history of research on natural ecosystems and forestry, and more recently on assessing the effects of development, that can provide the understanding needed. Its people--be they from Canada, the U.S., or Native American communities--define their culture in relation to the region. Their sense of regional allegiance can be an important motivating force for solving problems. Finally, the region has a good history of cooperation on environmental issues upon which to rely in the future.

Issues like air pollution and acidic deposition, solid waste management, maintaining ground water and surface water quality, and managing the landscape to prevent loss of biological diversity and provide suitable habitat for elk, mountain goat, grizzly bear, mountain lion, and other wide ranging animals will be addressed only through cooperative management. It now seems likely that the effects of global warming will be much greater in mid-continent areas, and that the environment here by the end of the next century could be very different from the one we see today. In one way or another, regional and global issues affect everyone who lives, works, or visits this remarkable region. We need to understand how environmental stress affects ecosystems and their species, so we can predict the effects of future stresses--such as those associated with global climate change. We also need to understand how people have shaped the past and the present of the region, so we can use this knowledge to make intelligent decisions on how people will shape its future. In the end, it is those who feel themselves a part of the Ecosystem, who respect its uniqueness, and are concerned about its problems who will ultimately write the blueprint for its future. If those who own the future do not have the best possible information, they will have a progressively harder time dealing with the problems.



I believe that the Man and the Biosphere Program--or, more specifically, its biosphere reserve program--provides one of the most promising ways to improve regional self-awareness and self-understanding by providing a geographic and organizational framework for cooperation in gathering, sharing, and applying resource information. The purpose of my talk is to give you a perspective on your biosphere reserves as an opportunity to help solve regional and even global problems, rather than simply as international designations applied to already existing protected areas. I hope that you will leave tonight a little more convinced that a truly operational biosphere reserve in this unique region can give people the knowledge, skills, and constructive attitudes that can really make a difference in solving complex environmental problems.

#### MAB PURPOSE

Build knowledge, skills, and values for rational use of ecosystems to sustain society

Understanding natural and modified ecosystems

Assessing the present, and predicting the future

Using the natural and social sciences (avoiding imbalances)

Encouraging voluntary cooperation

International: among governments (115), UN agencies, NGOs

National: among agencies, scientists, NGOs thru autonomous programs

Local: through biosphere reserve programs and MAB pilot projects involving conservation, science, and economic development interests

#### RESEARCH PRIORITIES

U.S. Priorities: Biological Diversity, Sustainable Development, and Global Change.

Understanding how ecosystems function under different types, patterns and intensities of human activities. E.g., fire, grazing, logging, mining, recreation, strict protection--biodiversity effects.

Understanding how to manage and restore degraded ecosystems.

Participatory approaches in tropical reforestation (Cordillera, Virgin Is), desertification (Mt. Kulal)

Understanding how our investments in terms of intellect, funds, and institutional arrangements set up scenarios of ecosystem improvement or deterioration

Understanding how people respond to environmental stress



## INTERNATIONAL MAB ORGANIZATION

Intergovernmental-- 35 nation ICC, Secretariat, N. Committees

## U.S. MAB ORGANIZATION

National MAB Committee. Chairman. T.Lovejoy  
11 contributing agencies: state, NPS, FS, NASA, NOAA, NSF, DOE, EPA, SI,  
USAID, Peace Corps  
Budget: 1.1 million. Up from low of 100K & 2 agencies in 83  
Directorates--natural/social. Tropical, Temperate, High Lat.,  
Coastal/Marine, Human Dominated. All involved in BR (new)  
MAB Grant program. Supports research, mgt, training activities. MAB  
goals/agency needs.

ROLES OF BIOSPHERE RESERVES--Overriding importance of maintaining biological  
diversity at all levels, and related benefits (ecological services,  
products, amenities)--many not now envisionable. An INFORMATION  
RESOURCE

### Conservation Role (Scale is the BIOGEOCULTURAL REGION)

Representative ecosystems--mixed mountain systems of cont.NA  
Genetic resources--area most biologically diverse high  
mountain system at this latitude and degree of continentality  
Traditional land use systems--traditional hunting/trapping,  
Indian agroecosystems, species of cultural significance

### Logistical Role

International network--similar areas in China, Europe  
Monitoring--e.g., GC local-bioregional-global  
Interdisciplinary research-- sustainable development (Flathead  
basin)  
Comparative Research--Glacier/Coram re logging; rec. mgt, exotics  
Multi-level cooperation. Northern Sciences Network. Possibility  
for temperate zone mountain BR network...

### Development Role

Problem-oriented research--No.Flathead Basin assessment process  
information for regional planning  
Education and demonstration--Waterton BR projects; environmental  
education  
Local participation--help set research & ed agenda (as at  
Waterton)

SYNTHESIS ROLE = LANDSCAPE FOR LEARNING



## ZONATION--

DESCRIPTIVE. Zones based on existing uses. Managers may use to prescribe uses, but not MAB requirement (as in LDC where BR is a mgt category)

OPPORTUNISTIC. Any area within the biogeocultural area can join. Program is key, not BR territory. Good program will foster enthusiastic supporters.

Core Zone

Buffer Zone (Area of Managed Uses)

Transition Area (Zone of Cooperation)

ZONATION NOT YET DONE FOR CROWN OF THE CONTINENT BR REGION.

## MANAGEMENT IMPLICATIONS

No Legal Obligations

Good PR--gives recognition and meaning to the area; regional pride;  
increases confidence that people are working jointly to solve problems

Source of funds and endorsements. Attract research dollars. Security of sites. Information-rich landscape.

More scientific use. Synergism interaction in information rich landscape.  
Glacier region provides outstanding opportunities. Global change will greatly increase importance of Glacier area.

Aegis for cooperation--BR program is forum for discussion of issues  
Local people help set BR agenda  
Framework for coordination among regional institutions--joint stake in information products and programs (cost effective)  
International--region has a long history of transborder communications but needs unifying theme

More emphasis on activities that will benefit people and their ecosystems.  
by demonstrating ways to do things differently.

## NATIONAL PARKS AND BIOSPHERE RESERVES

(from slide)

## MISCONCEPTIONS ABOUT BIOSPHERE RESERVES

Gratuitous honor--requires no implementing actions. Once the case. But now must have a structure to deliver a program that benefits the area

Only applies to strictly protected natural areas. Byproduct of early designation of NPs--incomplete as BR.

Way to protect land from development. Cant use as a club. Purpose is to provide information for rational decisions on sustainable development. MAB wont take sides (e.g., NC nuclear repository; Pinelands hazardous waste, Cabin Creek mine)

Risk of United Nations or Federal intervention in local affairs  
Voluntary program. Partnerships. No legal requirements.

Loss of management prerogatives. U.S. voluntary network would unravel if attempts to infringe occurred. No possibility.

No financial benefits. Regional organizations have great potential. Dont look to Washington--look to your own backyard. MAB may be good aegis for generating political support for bioregional cooperatives to solve environmental. Ten functional regional MAB programs would change funding picture entirely.



MILESTONES FOR BIOSPHERE RESERVES AND THE CROWN OF THE CONTINENT AREA

<u>Biosphere Reserves</u>	<u>Crown of the Continent</u>
1971 UNESCO Launch	
1974 Nixon-Brezhnev Summit	
1976 First Designations	Glacier and Coram BR designations
1979	Waterton designation
1980 World Conservation Strategy	
1982	Kalispell BR Symposium (50th Anniversary of the Peace Park) Waterton BR committees U.S. MAB comments on Cabin Creek mine
1983	Rocky Mountain International BR proposal
1984 UNESCO Action Plan U.S. Withdrawal from UNESCO	Rocky Mountain International BR deferred Waterton-Glacier delegation to Minsk
1985	Flathead River International Study Board begins Cabin Creek impact study
1986	Glacier takes stock of its Biosphere Reserve program
1987 Brundtland Commission Report	
1988 U.S. MAB Reorganization First Regional MAB Program	
1989	Final IJC Report on Cabin Creek Project calls for sustainable development strategy for Flathead Basin Crown of the Continent "regional ecosystem" seminar
1990 U.S. MAB BR Plan (Prop.)	Glacier B.R. selected as core global change research area  Crown of the Continent Man and the Biosphere Program .....

WHAT HAS MAB DONE FOR THE REGION?

Funded by USMAB..

\*History of scientific activity (Glacier)

\*Fire Ecology study & applications in fire mgt (Glacier)

Regional Initiatives..

o Cooperative mechanisms

Waterton Biosphere Management Committee, Technical Committee.

Transborder cooperation between Glacier-Waterton

Ad-hoc cooperation, regional workshops and symposia

Northern Science Network (Glacier has participated in past)

o Research

Regional GIS (NPS-FS) applications to fire, wildlife mgt, extraction

Biosphere grant program (Glacier Nat History Assn)

Park as a regional genetic resource: Population studies on west slope cutthroat trout, bighorn sheep; kokanee salmon restoration with state. (Glacier)

Ecology & control of exotics (Glacier--proposed coop.with Coram?)

Range management research, park-private land interface (elk management) (Waterton)

Facilitated research on global change (Glacier)

GEMS site (1981-1982)

o Education

Interpretive exhibits (Waterton)

o International

Cooperation with Peru, Nepal, China, Australia (Waterton)



NEEDS (Waterton 1987)

Involve local politicians, industry, landowners

Involve students (all levels)

Involve high profile non-governmental community leaders of solid reputation

Enlist the media to portray BR correctly

Open management policy, but encourage others to accept limits of shared decisionmaking

Discourage use of BR for lobbying for or against conservation/development, provide balanced information for informed discussion

Coordinating structure must have a charter--shouldnt be ad hoc

SOUTHERN APPALACHIAN MAB PROGRAM--A Possible Framework. A unique biogeocultural MAB institution.

SAMAB Cooperative FS,NPS,TVA,EDA,DOE,EPA States pending.

SAMAB Foundation

Use organization chart.

SAMAB Projects

- o SAMAB Annual Conference (Southern Appalachian Research and Policy Issues for the 90s)
- o Refereed workshop on integrated GC program for So.Apps. (advance working papers, multiagency)
- o 10 res. mgt projects approved (state forest stewardship, best ag/for mgt practices, wetlands, cultural resources, heritage database, landowner involvement, cooperative NR inventory)
  - o Dogwood anthracnose conference (Sept) with cities of Asheville/Knox.
  - o Representative ecosystems project
  - o Budget development strategy
  - o Directory or environmental ed activities (SAMAB members); SAMAB feed to Econet (schools)
  - o Ecotourism project.
  - o Pharmacological uses of native plants (regional synthesis)-complete
  - o SI/MAB Biodiversity program

I suggested time-line exhibit on people & environment in So.Apps.

"Who owns the land? The land belongs to the people, a little to the dead, some to the living, most to those not yet born"