

From U.S. MAB Chair D. Dean Bibles

Although a newcomer to the chairmanship and the National Committee of U.S. MAB, I have long been a supporter of the MAB concept and a collaborator in some of its activities. I have been given the privilege of assuming the chairmanship at a propitious time.

We are now beginning to see the impressive results of the energy that U.S. MAB has devoted to its activities under the leadership of my two distinguished predecessors, Frank Talbot and Tom Lovejoy. Several biome-based directorates have produced remarkable interim reports; other directorates are just beginning what promises to be exciting research. At my first National Committee meeting in July, following the recommendations of a meeting of Biosphere Reserve Managers in Colorado last year, we funded a new directorate on Biosphere Reserves. This, I hope, will be the beginning of a major U.S. MAB emphasis on our extraordinary assemblage of reserves within the United States.

U.S. MAB is also modernizing. We are working to provide electronic linkages between committee members, the reserves, the directorates, the U.S. MAB Secretariat, and the public. Through EuroMAB we hope to build upon the already close ties we have with our colleagues in Paris and around the world.

Our Federal government is in the process of changing the way environmental science is planned and funded. The Office of Science and Technology Policy has created a Subcommittee on Biodiversity and Ecosystem Dynamics and has charged it with developing the nation's environmental research agenda for these subjects. This month, U.S. MAB became a part of that effort.

I look forward to the future of U.S. MAB with great anticipation. The opportunity is ours and the time is now. I welcome your thoughts and suggestions as we move into these exciting times. Until we get on line at the U.S. MAB Secretariat, I can be reached on E-Mail at D1BIBLES@ATTmail.com.

U.S. MAB on the Federal Bulletin Board Service

Since mid-August, the *U.S. MAB Bulletin* has been available through the General Printing Office's Federal Bulletin Board Service (FBBS.) Our library is DOS_MAB. From the Main Menu of FBBS, select **White House and Federal Agencies** and Enter; select A for additional agencies and Enter; select **State Department** and Enter; under **Library 3** select **Science and Technology** and Enter; and find *U.S. Man and the Biosphere*.

On FBBS you will find all of the issues of the *U.S. MAB Bulletin* and most other documents published by the U.S. MAB Secretariat. We will continue to publish paper copies of these documents as well. The FBBS can be accessed through Internet for a fee of \$1 per 50 kilobytes, plus \$1 per file. The fee to read or download the document will be listed in the description. Our directory should be checked quarterly for new documents.

By January 1995, U.S. MAB publications should also be available free of charge through Internet. More details to come.

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Arctic Ungulate Conference

The second International Arctic Ungulate Conference will be held August 13–17, 1995 at the University of Alaska Fairbanks, U.S.A. This conference incorporates the International Reindeer/Caribou Symposium and the International Muskox Symposium.

A call for papers (abstract deadlines, etc.) and preliminary travel and accommodation information will be announced in autumn 1994.

For information please contact:

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U.S. MAB BULLETIN

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“The mission of the United States Man and the Biosphere Program (U.S. MAB) is to foster harmonious relationships between humans and the biosphere through an international program of policy-relevant research which integrates the social, physical, and biological sciences to address actual problems. These activities—broadly interpreted—include catalytic conferences and meetings, education and training, and the establishment and use of biosphere reserves as research and monitoring sites.” Adopted by the U.S. National Committee for the Man and the Biosphere Program, January 6, 1989.

U.S. MAB is supported by the Department of Agriculture-Forest Service, the Department of Energy, the Department of the Interior-National Park Service, the Department of State, the Agency for International Development, the Environmental Protection Agency, the National Aeronautics and Space Administration, the National Biological Survey, the National Institutes of Health, the National Oceanic and Atmospheric Administration, the National Science Foundation, the Peace Corps, and the Smithsonian Institution.

The program is organized into six directorates: Biosphere Reserve, High Latitude Ecosystems; Human Dominated Systems; Marine and Coastal Ecosystems; Temperate Ecosystems; and Tropical Ecosystems.

From the Executive Director

Under the new chair, D. Dean Bibles, the National Committee launched two major new program directions for the U.S. MAB Program. The committee not only approved a Strategic Plan to guide the development of a U.S. Biosphere Reserve Program, but also approved initial funding of a number of key elements to get the development underway. Major components will include an interactive process with the supporting agencies and other stakeholders, as well as working with regional organizations to help them assess and carry out feasibility studies to develop an inclusive regional organization to implement the fourth function of biosphere reserves: the regional integrator.

The National Committee also approved a major core research project for the Marine and Coastal Ecosystems Directorate. Marine refugia will be the focus of this interdisciplinary scientific research effort, which will specially aim to include the managers of such reserves, and commercial and recreational interests. While U.S. MAB has supported some individual research efforts involving marine sciences in the past, this marks the first approval of a marine program as a major core research project.

In conjunction with the annual summer meeting, the U.S. MAB National Committee also held a “report to the agencies” symposium to provide substantive feedback to the agencies that have supported the development of the U.S. MAB interdisciplinary research program. The directorates on Temperate Ecosystems, on Human Dominated Systems, and on High Latitude Ecosystems all provided in-depth reports on their findings and progress. The latest developments of the EuroMAB biosphere reserve network were also presented. As a result of the progress achieved by these directorates, a number of written products and reports are being prepared. The National Committee approved a most ambitious publication schedule.

U.S. MAB will also be making more products available electronically. An article inside this issue can guide you to information about the U.S. MAB LUCAS (Land Use Change and Analysis System) simulation model at the University of Tennessee. The location of the MABFlora and MABFauna data bases at the Information Center for Environment (ICE) at the University of California Davis is publicized in our upcoming brochure on the BRIM initiative. The Consortium for International Earth Sciences Information Network (CIESIN) holds the *ACCESS Directory of Biosphere Reserves in Europe and North America*. By mid August, U.S. MAB will have its own directory on the Federal Bulletin Board Service.

Roger E. Soles

Canada's Ecological Monitoring and Assessment Network Adopts Smithsonian/MAB Permanent Plot Monitoring Methodology

At a course held in April 1994 at Kejimikujik National Park (KNP) in Nova Scotia, the Ecological Monitoring and Assessment Network of Canada adopted the International Biodiversity Monitoring methodology developed by Smithsonian/MAB for the Global Biodiversity Network as a model for biodiversity monitoring in Canadian forest ecosystems. The plots established by this methodology in Canada will operate in close association with already established forest monitoring plots.

Francisco Dallmeier, Director, SI/MAB Biological Diversity Program, conducted the one-week training course at Kejimikujik National Park using the Smithsonian/MAB monitoring methodology. Two one-hectare plots in the temperate mixed (Acadian) forest were established. These are the first plots in Canada to become part of the Global Biodiversity Network. This Network intends to monitor three hundred sites by the year 2000 to obtain continuous records of composition, structure, and dynamics of forest ecosystems.

Subsequent to the Kejimikujik meeting, Cliff Drysdale, the park ecologist at KNP, and Don MacIver, forest climatologist, Atmospheric Environment Service, Environment Canada, were invited to participate in the May training course for the Global Biodiversity Network held by the Smithsonian at its Front Royal, VA facility.

The Ecological Science Center (Cooperative) News, Environment Canada, Ottawa, Ontario K1A 0H3, will follow the progress made in spreading the methodology through the biosphere reserves and parks of Canada.

For further information regarding the Canadian forest biodiversity monitoring initiative, or the Ecological Monitoring and Assessment Network, please contact:

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Ecological Monitoring and Assessment Network
Environment Canada
Place Vincent Massey
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SI/MAB Biodiversity Program

SI/MAB was created in 1986 to focus on problems associated with maintaining global forest biodiversity, emphasizing the practical application of research in achieving sustainable resource management.

SI/MAB combines long-term biodiversity measuring and monitoring projects with professional training courses that teach the principles and procedures of monitoring and of data collection, verification, and dissemination. The work is accomplished in a network of protected areas located worldwide where we address the need to gain a thorough understanding of ecosystem functions and of the consequences of human activities for natural systems.

The program has established a global network of permanent, long-term biodiversity monitoring plots centered on habitats that are richest in biodiversity or that are the most threatened. The monitoring records forest composition, structure and dynamics, and environmental changes. SI/MAB uses a consistent protocol for documenting each plot in detailed user and field guides for researchers and host-country educators. Results of the research and training courses is published in timely, descriptive reports for use by a wide audience. For two years SI/MAB has conducted professional training programs to reinforce host-country capabilities.

In 1994/95, SI/MAB will be expanding its monitoring and training projects. The global biodiversity monitoring network is expected to increase to three hundred plots by the year 2000, focusing on Biosphere Reserves and other critical protected areas. By 2000 our global network will represent the world's largest grouping of biodiversity monitoring plots in a diverse range of forest habitats. It will be linked by the SI/MAB protocol of consistent methods for measuring and monitoring biodiversity and BioMon, the SI/MAB Biodiversity Monitoring Database for managing data and preparing detailed reports and other publications. SI/MAB is also organizing two international symposia, scheduled for 1995 and 2000, to bring together researchers from the network sites and interested people for discussions of the results of the monitoring efforts and their implications for forest ecosystem management in protected areas of the world.

For more information regarding the Smithsonian/MAB Biodiversity Program, please contact:

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Strategic Plan for the U.S. Biosphere Reserve Program

At the July 29th U.S. MAB National Committee meeting, A Strategic Plan for the U.S. Biosphere Reserve Program was approved. The Plan was initiated by the biosphere reserves managers in December 1993 at Estes Park, CO.

The writing of the U.S. Strategic Plan was prompted by UNESCO's request that country MAB Programs create and approve Biosphere Reserve Action Plans.

The mission of the United States Biosphere Reserve Program is to establish and support a network of designated Biosphere Reserves that are fully representative of the biogeographical areas of the United States. The program promotes a sustainable balance among the conservation of biological diversity, compatible economic use, and cultural values through public and private partnerships, interdisciplinary research, education, and communication.

Goals of the Strategic Plan for the U.S. Biosphere Reserve Program

- Establish a Policy and Operational Framework for the U.S. Biosphere Reserve Program.
- Create a National Network of Biosphere Reserves that Represents the Biogeographical Diversity of the United States and Fulfills the Internationally Established Roles and Functions of Biosphere Reserves.
- Acquire and Integrate Knowledge for Sustaining Biodiversity, Cultural Values, and Viable Economies within an Ecosystem/Landscape Context.
- Promote Public Awareness and Education that Strengthens the Commitment of Stakeholders to MAB Concepts.
- Establish Mechanisms for Sharing and Disseminating Data and Information Among U.S. Biosphere Reserves and Between U.S. Biosphere Reserves and Others.

The *Strategic Plan* recommends forty-five actions for implementation by the agencies and organizations participating in the U.S. MAB Program and the administration of U.S. Biosphere Reserves. As of March 1994, forty-seven areas in the United States were designated as Biosphere Reserves. These reserves include ninety-nine administrative units under public and private ownership.

Copies of *A Strategic Plan for U.S. Biosphere Reserves Program* will be available from the U.S. MAB Secretariat.

Biosphere Reserve Directorate Begins Work on Newly Approved Program

The U.S. MAB National Committee approved critical elements of the budget submitted by the new Biosphere Reserve Directorate.

The Biosphere Reserve Directorate, led by Acting Chair Hubert Hinote of the Southern Appalachian Man and Biosphere Program (SAMAB), met in Gatlinburg, TN August 3-5 to begin work on the program for U.S. Biosphere Reserves.

The National Committee approved funds for the directorate to encourage cooperation and sharing of goals between reserve managers and local stakeholders; public education of the role of biosphere reserves; and development of a system for organized information-sharing among biosphere reserves.

During the following year the directorate will review the U.S. Biosphere Reserves network and develop guidelines for the selection of new biosphere reserves. The directorate will also solicit proposals for assistance to regional biosphere reserve organizations. An informational brochure about the U.S. Biosphere Reserve Program is planned.



Marine and Coastal Ecosystem Directorate Begins Core Project

In July, the U.S. MAB National Committee approved the first year of the new core project of the Marine and Coastal Ecosystem Directorate.

Michael P. Crosby, chair of the Marine and Coastal Ecosystem Directorate, will be one of the principal investigators of the core project, "Ecological and Socioeconomic Impacts of Alternative Access Management Strategies in Marine Protected Areas." The project will integrate natural and social science studies of the effects on marine areas of different intensities of fishing and recreational diving use.

The four study sites are: Florida Keys of Largo, Western Sambo, and Dry Tortugas; California Channel Islands; Kaho'olawe and Molokini Islands, Hawaii; and St. John and St. Thomas Islands, U.S. Virgin Islands.

The hypotheses to be investigated in the case studies of this core project will address the natural resource changes both within and adjacent to areas with various levels of access to the resources of the reserve. The restrictions to be examined vary from single species limitations on harvest to a near complete ban on fishing or entrance to the protected area. While specific hypotheses to be tested at each study site will vary, all hypotheses and field work are directed toward the examination of the core project's unifying objective: assessing how these various access management strategies impact or change the diversity, abundance, and behavior of specific species, as well as the overall condition of the ecosystems.

The project will also examine the related socioeconomic changes that occur due to various levels of managed access. Among the hypothesized changes are income levels from fishing, changes in the value of recreational experiences, and what value the local population places on increasing biodiversity in a biosphere reserve. Within the socioeconomic context of the project, analysis will also be conducted to determine allocations of benefits and costs under different access strategies and the resulting community tension or support.

Investigators and collaborators on the project, in addition to Michael Crosby, are Reed Bohne, manager of Grays Reef National Marine Sanctuary, NOAA; James Bohnsack, research fishery biologist of Southeast Fisheries Center, NOAA; Gary Davis, research marine biologist, National Biological Survey; J. Walter Milon, professor of economics, University of Florida; Ernst Reese, professor of zoology, University of Hawaii; Callum Roberts, research assistant professor of marine ecology, University of the Virgin Islands; Daniel Suman, Division of Marine Affairs, University of Miami; Daniel Richards of the National Park Service; Peter Haaker of the California Department of Fish and Game; and Jerald Ault, University of Miami.

International Smithsonian/MAB Symposium

Measuring and Monitoring Forest Biological Diversity: The International Network of Biodiversity Plots, May 23–25, 1995, at the Smithsonian Institution, Washington, D.C.

Symposium Objectives: The symposium's primary objective is to illustrate the importance of baseline information provided by forest biodiversity plots. This will be achieved through the presentation of scientific papers on floristic composition, structure, diversity, and dynamics of forest plots, along with complementary research on other taxa that can be linked to one of the sites.

Proceedings of the symposium will be published as a reference text for researchers, managers, and students focusing on the comparative analysis of forest types, especially for use with the SI/MAB plot network, through a partnership of government agencies, environmental organizations, commodity groups, professional associations, and academia—all with the aim of providing further insight to the management of the biodiversity resource.

Registration: a fee of US\$150 covers attendance at all sessions, a copy of extended abstracts, a welcome reception, and coffee, tea, and snacks.

Language: English will be the working language at the symposium.

Call for Abstracts: Deadline: December 15, 1994.

Submission. For particulars on paper preparation, please write:

International Center
Smithsonian Institution, Suite 3123
1100 Jefferson Drive, SW.
Washington, D.C. 10560

If any material in the paper is copyrighted, send with your paper photocopies of letters granting permission for use and credit for the source. All papers must be submitted in "hard" copy, accompanied by 3.5" disks with the text in WordPerfect 6.0. The disk must be free of formatting and control characters.

To receive the third announcement, in October, which will contain the schedule of events, contact:

Dr. Franciso Dallmeier
Chair, Symposium Planning Group
1100 Jefferson Drive SW., Suite 3123
Washington, D.C. U.S.A. 20560
Tel. (202) 357-4793: Fax. (202) 786-2557
E-Mail: IC.FGD@IC.SI.EDU



Temperate Ecosystems Directorate Phase III

Robert J. Naiman, chair of the Temperate Ecosystems Directorate, presented Phase III of the directorate's core project to the U.S. MAB National Committee at their July meeting. A one-year continuation of the project was approved.

The project, "Land-Use Patterns in the Olympic and Southern Appalachian Biosphere Reserves: Implications for Long-Term Sustainable Development and Environmental Vitality," will continue to focus on integration of information in the Land-Use Change and Analysis System (LUCAS), a major product of the directorate's research.

The Land-Use Change and Analysis System (LUCAS) for UNIX-based workstations was developed by the Temperate Ecosystems Directorate for managers of biosphere reserves and other protected areas. LUCAS is designed to model the effects of land use on landscape structure in regions such as the Little Tennessee River Basin in western North Carolina and the Olympic Peninsula of Washington.

The purpose of LUCAS is to be a spatially explicit landscape-change model useful in land-use policy decisions. Multidisciplinary data was integrated to study the effects of socioeconomic and ecological factors on land-use changes.

LUCAS uses maps from many sources, principally from remotely sensed images, census and ownership maps, topographical maps, and output from econometric models. These map layers are stored, displayed, and analyzed using the Geographical Resources Analysis Support System (GRASS), which was developed by the U.S. Army Construction Engineering Research Laboratories. Simulations using LUCAS produce revised land-cover maps that demonstrate the amount of land-cover change stimulated by various land uses. These maps are expected to be useful in policy decisions regarding issues such as biodiversity conservation, assessing the importance of landscape elements to meet conservation goals, and long-term landscape integrity.

Information on LUCAS is available on the World Wide Web via Mosaic at the following URL:

http://www.netlib.org/utk/cs_dept/research/berry/lucas/index.html

LUCAS E-Mail Reflector: lucas@cs.utk.edu

Written or phone inquiries may be directed to:

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Fax. (615) 974-4404

U.S. National Committee For the Man and the Biosphere Program (July 1994)

Mr. D. Dean Bibles, Chair
Department of the Interior
Dr. Robert Campbell
Weyerhaeuser Company
Dr. Robert Costanza
University of Maryland
Dr. Michael P. Crosby
National Oceanographic and Atmospheric
Administration
Dr. Francisco Dallmeier
Smithsonian Institution
Dr. Jerry W. Elwood
Department of Energy
Dr. Sally Fairfax
University of California, Berkeley
Dr. Denny B. Fenn
Department of the Interior
Dr. Ralph M. Garruto
National Institutes of Health
Dr. William P. Gregg
National Biological Survey
Dr. Mark A. Harwell
University of Miami
Mr. Hubert H. Hinote
Southern Appalachian MAB Cooperative
Dr. Twig Johnson
Agency for International Development
Dr. Peter R. Jutro
Environmental Protection Agency
Dr. Jack Kruse
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Dr. Thomas E. Lovejoy
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University of Washington
Mr. Rafe Pomerance
Department of State
Dr. JoAnne P. Roskoski
National Science Foundation
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Department of Agriculture—Forest Service
Dr. Milton Russell
University of Tennessee
Dr. Roger E. Soles
U.S. MAB Secretariat
Dr. Diane Wickland
National Aeronautical and Space Administration



Publications

To order publications from the U.S. MAB Secretariat, OES/EGC/MAB, Room 608, SA-37, Department of State, Washington, DC 20522-3706, please include self-addressed mailing labels.

STILL AVAILABLE

from U.S. MAB:

Ecological Network of Networks: Creating a Network to Study Ecological Effects of Global Climate Change. Report of a workshop sponsored by the Ecological Systems and Dynamics Task Group of the Committee on Earth and Environmental Sciences, held October 1991, Washington, DC, edited by Caroline Bledsoe and Mary Barber, 1993. (20 pp.)

Towards a Global Terrestrial Observing System (GTOS): Detecting and monitoring change in terrestrial ecosystems, a report of a workshop sponsored by Observatoire du Sahara et du Sahel, Global Change and Terrestrial Ecosystems, Core Project of the International Geosphere-Biosphere Programme, UNESCO Man and Biosphere Programme held at Fontainebleau, France July 27-31, 1992, edited by O. William Heal, Jean-Claude Menaut, and William L. Steffen, 1993. (71 pp.)

INFOMab no. 20, 1993 (52 pp.), contains news from MAB National Committees and reports on studies, proposed projects, conferences, publications, etc., related to MAB programs worldwide. Published by UNESCO Programme MAB. Some earlier issues are also available.

from others:

Development or Destruction: The Conversion of Tropical Forest to Pasture in Latin America, edited by Theodore E. Downing, Susanna B. Hecht, Henry A. Pearson, and Carmen Garcia-Downing, 1992, is a collection of research studies, interviews with community leaders and peasants, and recommendations. (405 pp.) Available from:

Westover Press, Inc.
5500 Central Avenue
Boulder, CO 80301
Tel. (303) 444-3541
Fax. (303) 449-3356
paper \$57.50

NEW PUBLICATIONS

from U.S. MAB:

BRIM: Biosphere Reserve Integrated Monitoring, 1994, is a brochure that describes the EuroMAB program to link the data bases created in the biosphere reserves of Europe and North America with the worldwide scientific community. (12 pp.)

from others:

Northern Perspectives is published quarterly by the Canadian Arctic Resources Committee Inc. The current issue, Volume 22, Number 1, Spring 1994, contains articles titled, "Managing and Monitoring: Tools for Sustainable Development,"; "The Ecosystem Approach: Implications for the North" by Robert F. Keith; "Canada's Ecosystem Monitoring and Assessment Initiative: Building a Network of Ecological Science Centres" by Patricia Roberts-Pichette; "The Imbalance of Marine Science in Canada" by Whit Fraser; and "Giving Traditional Ecological Knowledge Its Rightful Place in Environmental Impact Assessment" by John Sallenave. Back issues can be purchased at \$4 Canadian each from:

CARC
1 Nicholas Street
Suite 412
Ottawa, Ontario
Canada K1N 7B7
Tel. (613) 241-7379
Fax. (613) 241-2244.

Natural Resource and Environmental Accounts for Development Policy: Final Report on a Seminar Held in Washington, DC, April 13-14, 1993, by the Committee on the Environment of the OAS Permanent Council, 1994. (70 pp.) Twig Johnson, chair of the U.S. MAB Tropical Ecosystems Directorate, was a presenter at this seminar. Available from Department of Regional Development and Environment Executive Secretariat for Economic and Social Affairs, Organization of American States, Washington, DC 20006.

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