

**Comments by Thomas E. Lovejoy,
U.S. MAB Chairman**

I was once challenged to think about what a colonization plan might look like if people were only just now contemplating the occupation of this planet. The disparity between the present use of this planet and the variety of possible colonization plans was immediately obvious. Clearly, the greatest flaw is that we continue to dwell in the middle of what might euphemistically be termed our experiments on how to live on Earth. The ultimate folly of this sort of non-planning is now playing itself out in drastically altered atmospheric composition and, inevitably, climate change. While some wish to wait until they can see evidence of change before they act, by that time it will be too late to prevent much devastating global change.

While we were devising a colonization plan, it is certain that it would include elements like biosphere reserves. They are the essence of a scientific approach allowing for manipulation of peripheral habitats while the central core remains undisturbed to provide the comparison deriving from a proper scientific "control." Within our long history on the planet, biosphere reserves provide the ultimate in a rational approach to determining productive yet sustainable ways to use environments. But most biosphere reserves are that more in name rather than in actual ongo-

continued on page 2

**First Meeting of U.S. MAB
Coordinating Committee for
Biosphere Reserves**

The U.S. MAB Coordinating Committee for Biosphere Reserves held its first meeting in Washington on March 26-27, 1990. The Committee was established by the U.S. MAB National Committee in January. Each directorate chair was directed to designate one member to serve on the committee along with representatives from the supporting federal agencies and several from the private sector. Dr. Robert Woodmansee, Member of the U.S. National Committee and Director of the Natural Resource Ecology Laboratory at Colorado State University, chairs the committee. This Committee aims to strengthen the biosphere reserve program within U.S. MAB.

The Committee agreed to convene a workshop later this year to bring together Committee

continued on page 4

In This Issue

- **Positions available on U.S. MAB Directorates**
- **First meeting of U.S. MAB Coordinating Committee on Biosphere Reserves**
- **UNESCO sets agenda for Biosphere Reserves**

continued from page 1

ing social and biological scientific research. Stimulating the right kind of research in biosphere reserves is no small challenge, but a new U.S. MAB committee chaired by Dr. Robert Woodmansee of the National Resource Ecology Laboratory at Colorado State University is charged with looking at biosphere reserves in general, and at that problem in particular. I hope that we will all give this challenge appropriate thought and pass ideas along to Bob Woodmansee.



U.S. MAB BULLETIN

The U.S. MAB Bulletin is published quarterly by the U.S. MAB Secretariat, OES/EGC/MAB, Department of State, Washington, DC 20520. Tel. (202)632-2816, 2786.

"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 United States Department of State, the United States Department of Agriculture-Forest Service, the United States Department of the Interior-National Park Service, the Agency for International Development, the Environmental Protection Agency, the National Oceanic and Atmospheric Administration, the National Aeronautics and Space Administration, the Peace Corps, the Smithsonian Institution and the National Science Foundation.

The program is organized into five directorates: High Latitude Ecosystems; Human Dominated Systems; Marine and Coastal Ecosystems; Temperate Ecosystems; Tropical Ecosystems; and a U.S. MAB Coordinating Committee for Biosphere Reserves.

Notes from the Executive Director

Recently, just one day's mail brought in three newsletters calling for the creation of new environmental agendas—or claiming to have already established them. Another service offered to send me, biweekly, computer diskettes of just the latest activities on global change.

Even on a regional basis this proliferation of programs and activities abounds. To help keep one scorecard, the U.S. MAB Directorate on High Latitude Ecosystems will be proposing to the MAB Northern Science Network that the Network itself begin to act as a global clearing house of information on arctic programs. We wish them well in promoting this concept among the national MAB programs of the high latitude nations.

U.S. MAB's effective track record on environmental policy is based on rigorous science. Federal agency and private sector scientists find the U.S. MAB auspices an effective umbrella and inter-linkage that allows for policy-relevant environmental research to be done. We believe that another key element in MAB's effectiveness lies in our bringing together scientists of various disciplines to examine issues and problems.

Consequently, this issue of the Bulletin contains a call for scientists to apply for 3-year appointments to MAB's inter-disciplinary program directorates. While only a very limited number of appointment opportunities are available, we will keep this window of opportunity open through August so that everyone who is interested in applying will have time to obtain application forms and the mission statement(s) of the appropriate directorate(s).

While our U.S. MAB Secretariat provides administrative support to the U.S. MAB Program, I am extremely proud that we too can occasionally play an immediate role in protecting the environment. It has long been our desire to have this U.S. MAB Bulletin printed on recycled paper. Claimed non-availability, non-competitive costs,

continued on page 3

continued from page 2

and low quality have blocked the realization of our goal. Now, however, Mrs. Cecile W. Ledsky, the Secretariat's Publications Officer, has broken through these barriers. Through diligent efforts, she has obtained the General Services Administration's Federal Supply Catalogue and schedules and the Government Printing Office's Federal Supply Schedules from which federal agencies order bond, offset book, writing, and other paper supplies, which now include a component of recycled paper products. The catalogues include descriptions and stock numbers by which agencies can order high quality recycled paper products. The State Department is now ordering recycled paper for most of its paper needs.

If you've faced similar problems in dealing with your agency procurement agents, write to Mrs. Ledsky and she'll be happy to send you the excerpt from the GSA catalogue, which provides this useful information. Hopefully, our next issue will be on recycled paper!

Hope you did something good for Earth Day; now keep it up.

Roger E. Soles

Symposium and Workshop on Coastal Barrier Biosphere Reserves on the U.S. East Coast.

This symposium and workshop were held at the American Institute of Biological Sciences' annual meeting held in Toronto, Canada in August 1989. Its primary aim was to develop goals and a strategy for implementation of a functional network of U.S. coastal barrier biosphere reserves on the U.S. east coast. The symposium and the workshop were sponsored by the U.S. Man and the Biosphere Program (U.S. MAB) in cooperation with the American Institute of Biological Sciences. The symposium was co-chaired by G.

Carleton Ray, University of Virginia, and William P. Gregg, Jr., National Park Service. Paul G. Risser of the University of New Mexico was Workshop Facilitator and M.G. McCormick-Ray served as Rapporteur.

At the symposium, it was noted that "it is on the coasts that we see some of the most intense conflicts between the resource demands of an expanding world population and the dynamic and fragile ecosystems that provide those resources. A critical need exists for model areas in which to demonstrate sustainable resource use. Coastal biosphere reserves will offer excellent settings in which to conduct research into how economic growth can occur that is both socially and environmentally sustainable."

Mid-Atlantic coastal barrier systems were selected as potential "models" for implementing biosphere reserve concepts in coastal-marine areas. The symposium dealt with these "models" via six major papers: 1) Historical Background and Purpose; 2) Regional Research Issues; 3) Global Research Issues; 4) Public Education and Involvement; 5) Management Planning; and 6) Incentives for Organizational Investment in MAB.

The papers presented emphasized the need for establishing a functional network of U.S. coastal and marine biosphere reserves and implementing biosphere reserve concepts in those areas. However, most symposium participants agreed that biosphere reserves have evolved in concept but not yet in practice in these areas. Coastal biosphere reserves have yet to demonstrate that they can successfully be applied to the concept of placing human activities harmoniously within the biosphere—mitigating human impacts upon ecosystems and restoring degraded ecosystems, while planning for sustained human development.

The workshop based its discussions on 7 themes which were considered together to incorporate the individual objectives, actions, research plans and major functions of biosphere reserves. These were: 1) Ecogeographic classification and

continued on page 7

continued from page 1

members, biosphere reserve managers, and scientists from outside the program to develop a strategic plan for the U.S. biosphere reserve program. The plan will establish clear program goals, provide operational guidance, and create an agenda for action.

In addition, the Committee agreed to develop a directory of biosphere reserve staffs (administrative and scientific) by areas of expertise; and possibly to convene a national workshop of biosphere reserve managers after completion of the strategic plan.

Positions Available on U.S. MAB Directorates

The U.S. National Committee (for MAB) will accept applications for a limited number of 3-year appointments to the U.S. MAB Directorates. Openings exist on each of the directorates. Applicants from both the social and biological sciences as well as others will be considered for the directorates on High Latitude Ecosystems, Human Dominated Systems, Marine and Coastal Ecosystems, Temperate Ecosystems, and Tropical Ecosystems.

The travel and related costs of attending directorate meetings by scientists and others employed by government agencies must be supported by the attendee's agency. The travel and related costs of attending directorate meetings by scientists and others from institutions in the private sector will be supported by the U.S. MAB Program.

Persons who are interested in applying must first contact the U.S. MAB Secretariat for an application form and for a copy of the appropriate directorate's mission statement. The mission statement outlines the core of each directorate's program. Applications will be accepted by the Secretariat through September 1, 1990; appointments will be made in November.

UNESCO/MAB Meeting on Biosphere Reserves

A meeting was held at the UNESCO/MAB Secretariat in Paris, in January 1990, to develop the functional interrelationships of biosphere reserves.

The main recommendations resulting from the meeting were as follows:

- 1) 20 to 40 sites from existing biosphere reserves should be identified by MAB as a network for long-term monitoring and research on global change;
- 2) A common data set and methodology should be established for data collection. A minimum number of variables should be allowed to permit the largest number of intersite comparisons of abiotic and biological processes and fluxes. However, decisions will have to be made on the method to be used for integrating data from separate locations;
- 3) Imaginative approaches to funding for long-term monitoring and research on global change should be developed. For example, funding for start-up activities, investment in training and equipment, long-term funding for operations and periodic evaluations should be established; different funding sources for industrialized countries and developing countries should be identified; all funding opportunities such as endowments, debt for nature swaps, or combining with a function which is attractive to certain funding sources (e.g., demonstration of sustainable development for the World Bank, etc.) should be pursued;
- 4) Coordination should be developed using the "networking" experience gained in the Chinese Ecological Research Network (CERN) or from the Long Term Ecological Research (LTER) sites in the United States.
- 5) One or more pilot projects should be begun within the next 2 years to determine whether global changes can be detected in the network. Biosphere reserve managers should be encouraged

continued on page 5

continued from page 4

to initiate experiments, which are simple, suitable for detecting climate change, require data from a network of sites, require long-term observation, can produce results in from 2 to 5 years, are relatively inexpensive using low technology, encourage exchanges in a network, and can use simple models.

It was decided that a technical report of the workshop would be prepared for distribution. It will concentrate on: reasons for coordinated international research and monitoring; scientific issues and research sites; the role of biosphere reserves in international research; organization and development of biosphere reserves for this purpose; and measurements and data management. This report should be available from UNESCO/MAB later this year.

Congratulations to Ariel Lugo: First Winner of the USDA Forest Service's Distinguished Science Award

Congratulations are due Ariel E. Lugo, Chairman of the U.S. MAB Program's Directorate on Tropical Ecosystems and Director of the USDA Forest Service's Institute of Tropical Forestry in Rio Piedras, Puerto Rico. He has been awarded the Forest Service's inaugural Distinguished Science Award, its highest honor for research, for his 10-year research effort to promote good tropical forest resource management.

The Forest Service's citation noted that Dr. Lugo has adapted many temperate research techniques to tropical conditions. He has collected and synthesized data and developed a range of basic management options to lessen the impacts of intense human use on tropical forests. His research and synthesis on the performance of whole ecosystems has resulted in a much broader understanding of tropical nutrient and carbon cycling, tree growth and the loss of nutrients from

forests to estuarine and marine ecosystems as a result of heavy rainfall. His research has shown that forest cover to prevent erosion is more important in tropical than in temperate ecosystems and he has communicated a sense of urgency to the pace of research in the tropics.

We all join the Forest Service in congratulating Dr. Lugo on his award and are proud that scientists of his caliber continue to provide leadership to the U.S. MAB Program.

Stephen Siebert, Winner of UNESCO/MAB Young Scientists Research Grant Award

Congratulations to Stephen F. Siebert, of Cornell University, recent winner of one of UNESCO's MAB Young Scientists Research Grant Awards for 1990. Dr. Siebert's award was to enable him to study "Sustainable Development for Rainforest Conservation: Rattan in Indonesia". He will evaluate rattan cultivation and management as an alternative to forest conversion and uncontrolled forest product collection in Indonesian forest preserve buffer zones.

Dr. Siebert is one of 10 young scientists, younger than 35 years of age, awarded research grants by UNESCO from a worldwide competition. A country's MAB National Committee may nominate no more than two candidates per year. Congratulations! We're proud to have a U.S. winner!

Applications for UNESCO's 1991 Young Scientists Research Grants are available from the U.S. MAB Secretariat. All completed applications must be received by the U.S. MAB Secretariat by December 1, 1990. The applications will then be reviewed by the U.S. National Committee and, if approved, will be submitted to the UNESCO MAB Secretariat for a decision in early 1991.

A National Institute for the Environment???

Dr. Thomas E. Lovejoy has joined with other prominent American scientists in support of a bill introduced in the Senate calling on the National Academy of Sciences to conduct a study of the feasibility of an umbrella research arm, The National Institute for Environmental Research, to support research on a variety of environmental issues. Further information on this proposal, S.2371, can be obtained from Dr. Stephen P. Hubbell, Department of Biology, Princeton University, Princeton, NJ 08544.

New Version of Biosphere Reserve Brochure Now Available Through the Government Printing Office

The new version of the Biosphere Reserve Brochure/Map, updated to contain all U.S. biosphere reserves designated through July 1989, is now available. It ALSO contains a new code to the location of the world's biosphere reserves.

The brochure is available through the Superintendent of Documents at the Government Printing Office (GPO) Bookstore, 941 North Capitol Street NE, Washington, DC 20401; Tel. No.(202)783-3238. Stock # 044-000-07277-0 at a cost of \$3.00 each. PUT IN YOUR ORDER NOW. Bulk order discounts *may* be available.

Volunteer Position Open

Over the past years, the U.S. MAB Secretariat has accumulated large numbers of environmental studies, reports, books, slides, videos, etc. in our library/media center. Many of these items are relevant unpublished materials or hard-to-obtain

reference sets, data, etc. Over the years, a number of environmentalists have found this library a useful source of materials. However, in recent years, as the volume of incoming materials has increased significantly, we just have not been able to keep track of the increased flow, nor to make assessments as to the merits of particular items to maintain in our library/media center. This environmental educational resource function of the U.S. MAB Secretariat is important and we want to keep it open. But, we don't have the funds to pay someone to monitor the materials and keep them organized.

Are there any volunteers who would like to assist the U.S. MAB Program by organizing this material?

A volunteer would first (re)organize the materials into categories (primarily by ecosystems and subjects), and then type/enter the material into a "user friendly" computer. The resulting lists would then be circulated to the U.S. MAB directorates for judgements as to the materials' merits. The final lists of materials would then be made available to the general public. This volunteer work would have to be performed during normal office hours in downtown Washington, DC. If interested, please contact the U.S. MAB Secretariat.

UNESCO/MAB Book Series Launched

The Man and the Biosphere book series has been launched by UNESCO with the intention of reaching upper level university students, scientists, and resource managers who are not necessarily specialists in ecology. The books will cover a range of environmental and natural resource issues. They will provide resource material in the form of case studies based on primary data collection, syntheses of comparative research, assessments of knowledge, or reports of panels of experts. Several volumes are currently in press.

continued on page 7

continued from page 6

Currently available from The Parthenon Publishing Group, Inc., 120 Mill Rd., Park Ridge, NJ 07656, USA, is Volume I, **The Control of Eutrophication of Lakes and Reservoirs** edited by Sven-Olof Ryding and Walter Rast (former member of the U.S. MAB directorate on Fresh Water Resources), and Volume 2, **An Amazonian Rain Forest, The Structure and Function of a Nutrient Stressed Ecosystem** edited by Carl F. Jordan (former member of the U.S. MAB directorate on Tropical Forests).

We congratulate the international MAB Secretariat staff and John Jeffers, the series editor, for organizing and inaugurating this important book series.

continued from page 3

site selection; 2) Development of observatories (data gathering); 3) Framework for interdisciplinary research in support of resource policy; 4) Links with domestic conservation and management programs; 5) Development of incentives and constituencies; 6) Institutionalizing MAB in each region; and 7) Identification of resources and support. It was concluded that U.S. MAB must respond to the need to integrate functional relationships among biosphere reserve administrative units by providing programmatic linkages among sites and adjacent terrestrial and marine areas, as well as with other biosphere reserves in the international MAB network.

The results of both the symposium and workshop are being prepared for publication in "Bioscience" late in 1990.

PUBLICATIONS

Free Publications available from U.S. MAB:

REMEMBER, ENCLOSE YOUR SELF-ADDRESSED MAILING LABEL (OR LABELS, IF YOU ARE REQUESTING SEVERAL ITEMS).

New from U.S. MAB:

- Puerto Rico Workshop on **LAND-BASED SOURCES OF MARINE POLLUTION IN THE WIDER CARIBBEAN REGION**, August 7-9, 1989, San Juan, Puerto Rico.

- **THE NATIONAL SCIENCE AND TECHNOLOGY WEEK POSTER**, APRIL 22-28, 1990; reverse side includes a directory of available educational materials.

Also Available from U.S. MAB:

- UNESCO Publication, MAB Digest 4, the **Role of Land/Inland Water Ecotones in Landscape Management and Restoration, Proposals for Collaborative Research**, edited by Robert J. Naiman, Henry Decamps, and Frederic

Fournier. To determine the management options for the conservation and restoration of land/inland water ecotones through increased understanding of ecological processes.

Available from others:

- **WHAT IS A BIOSPHERE RESERVE?** Brochure/Map. Listing and location of all international (and U.S.) biosphere reserves as of July 1989. Containing a new code to the location of all biosphere reserves. Available from: GPO Bookstore, 941 North Capitol Street NE, Washington, DC 20401. Tel. (202)783-3238. Stock # 044-000-07277-0 @ \$3.00 each.

- UNESCO Publication, MAB Digest 1 on **Eutrophication Management Framework for the Policy-Maker** by Marjorie Holland, Walter Rast, and Sven-Olof Ryding. Eutrophication of lakes and reservoirs is one of the most pervasive water quality problems worldwide. This digest aims to provide: quantitative tools for assessing the state of eutrophication of lakes and reservoirs; a framework for developing cost-effective management strategies; specific technical guidance and case studies for effective management of eutrophication. Available from the Programme on Man and the Biosphere, UNESCO, 7, place de Fontenoy, 75700 Paris.

continued on page 8

PUBLICATIONS

- UNESCO Publication, MAB Digest 3 on **Contributing to Sustained Resource Use in the Humid and Sub-Humid Tropics, Some Research Approaches and Insights**, by Malcolm Hadley and Kathrin Schreckenber.

An overview of recent, ongoing, and planned activities within the MAB framework pertaining to the ecology of humid and sub-humid tropical ecosystems, principally forests and savannas. Available from: the Programme on Man and the Biosphere, UNESCO, 7, place de Fontenoy, 75700 Paris.

- **FINAL REPORT OF THE INTERNATIONAL WORKSHOP, "LONG-TERM ECOLOGICAL RESEARCH—A GLOBAL PERSPECTIVE,"** September 18-22, 1988 in Berchtesgaden, Federal Republic of Germany. It is available from: MinR Wilfried Goerke, Dipl.-

Biologe, Bundes- ministerium fur Umwelt, Naturschutz und Reaktorsicherheit, Godesberger Allee 90, 5300 Bonn 2, Federal Republic of Germany.

- **OUR CHANGING PLANET:** The FY 1991 U.S. Global Change Research Program, A Report by the Committee on Earth Sciences to Accompany the U.S. President's Fiscal Year 1991 Budget. Available from: Committee on Earth Sciences, c/o U.S. Geological Survey, 104 National Center, Reston, VA 22092. (Learn where the \$1 billion for global change research has been allocated for FY91.)

DEPARTMENT OF STATE PUBLICATION 9731
Bureau of Oceans and International Environmental
and Scientific Affairs

Released April 1990

U.S. Man and the Biosphere Program, OES/ENR/MAB

DEPARTMENT OF STATE, U.S.A.
Washington, D.C. 20520

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

BULK RATE
POSTAGE & FEES PAID
U.S. Department of State
Permit No. G-130