U.S. MAB BULLETIN

THE UNITED STATES NATIONAL COMMITTEE FOR THE MAN AND THE BIOSPHERE PROGRAM

July 1994 Volume 18, No. 1

U.S. MAB Chairman Resigns

Frank H. Talbot, chair of the U.S. MAB Program, resigned from his position as chair and as Director of the National Museum of Natural History, March 30, 1994. Dr. Talbot and his family now reside in Sydney, Australia. The following is quoted from his resignation letter to the members of the U.S. MAB Program.

"After discussion with my family and my doctor, I have decided for health reasons, asthma, to leave Washington DC, the Director position of the National Museum of Natural History, and the Chairmanship of the U.S. MAB Program at the end of March of 1994.

"It has been an honor to serve as the Chair of the U.S. National Committee for the Man and the Biosphere Program.

"My time with the U.S. MAB Program has been most stimulating and challenging for me. Our directorates' research projects are coming to fruition and will demonstrate the validity of U.S. MAB having taken the risk to support truly interdisciplinary projects. Our international leadership in linking the biosphere reserves of Europe and North America has stimulated UNESCO to do the same for all the world. The international network of biosphere reserves is emerging as a result of our actions. Also, as you know, U.S. MAB is currently developing a U.S. Action Plan for Biosphere Reserves. When completed, I am sure that our plan will also provide significant leadership on both the international and domestic levels for meaningful cooperation and action in biological diversity, global change monitoring, and ecosystem management. I am pleased to have been a part of that process and I hope that I have made a useful contribution to the program. I deeply regret that my involvement in MAB, in which I believe so strongly, has been cut short. My best wishes to you all in this important endeavor."

D. Dean Bibles, New Chair of U.S. MAB National Committee

D. Dean Bibles, Director of Land Tenure at the Department of Interior and Special Assistant to Secretary Bruce Babbitt, has been appointed as the new chair of the U.S. MAB National Committee by Ambassador Elinor G. Constable, Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs. The appointment is for three years, to begin July 1, 1994.

Mr. Bibles has over thirty-seven years of land management experience with the U.S. Bureau of Land Management (BLM).

As a steering committee member of the Keystone Center's North American Consultation on Global Biodiversity, Mr. Bibles plays a leading role in the international conservation community.

Mr. Bibles has been active in promoting maintenance of biological diversity, expanding research on ecosystem management, and protecting historic and cultural resources.

Mr. Bibles led the writing of BLM's first statewide wilderness bill in Arizona. He also helped create and manage Arizona's San Pedro Riparian National Conservation Area, which provides habitat for the largest concentration of threatened and endangered species in the United States.

In This Issue

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From the Executive Director

At long last, in December of last year, U.S. MAB organized the first ever meeting of the managers of U.S. biosphere reserves. Representatives and stakeholders of more than 100 sites gathered in Estes Park, Colorado. The managers worked diligently over the four-day event and produced a draft of a strategic plan for future actions of a U.S. MAB Program for biosphere reserves.

Heretofore, the UNESCO designation of biosphere reserve status was frequently viewed as merely an honorary recognition of "excellence" in conservation, science, and education. In 1985 UNESCO added the requirement that the management/land owning agency pledge to operate its site as a regional focal point for environmental cooperation. This regional focus will most likely form the basis of U.S. interbiosphere reserve activity and provide in itself a focal point for interagency cooperation through the U.S. MAB Program.

U.S. MAB

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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 Oceanic and Atmospheric Administration, the National Science Foundation, the Peace Corps, the National Biological Survey, and The Smithsonian Institution.

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

We are grateful to all of the managers that attended for their input and counsel. We are also most grateful to the interagency committee which shepherded the process to this point. Our next *Bulletin* will report on the National Committee's decisions concerning the draft strategic plan and its accompanying initial projects.

January brought the sad news that Washington, DC provided a distinctly unhealthy habitat for our chairman, Dr. Frank Talbot. His "goodbye" column is in this issue. We will all miss his delightful, sophisticated leadership and good humor. We wish him the best of success in his homeland of Australia. It was under his direction and leadership that U.S. MAB finally pressed to bring the biosphere reserves into the main of the U.S. MAB Program.

D. Dean Bibles, Director of Land Tenure at the Department of Interior and Special Assistant to Secretary of Interior Bruce Babbitt, has been appointed by Ambassador Elinor G. Constable as our new chair of the U.S. MAB National Committee. He brings a most impressive list of credentials and background experiences to the position, and we look forward to Mr. Bibles' dynamic leadership. (**See** introduction to Mr. Bibles on page 1 of this issue.)

January also brought the retirement of U.S. MAB's program and publications officer, Mrs. Cecile Ledsky. Mrs. Ledsky had worked assiduously here in the U.S. MAB Secretariat. Her efforts spearheaded U.S. MAB entrance into relations with commercial publishing houses. She was the officer most responsible for the professionalism, rigor, and consistency of the well-received first directory of biosphere reserves, *ACCESS*. Her professionalism and good humor will be sorely missed here in the Secretariat and by all of the members of the various MAB committees and directorates.

Our new program officer is Ms. Antoinette Condo. This issue of the *Bulletin* is Antoinette's first product since joining the MAB Secretariat. We look forward to increasing numbers of high-quality publications under her direction.

The results of U.S. MAB's policy of supporting truly interdisciplinary research through our directorates' core projects are impressive. Two MAB directorates, High Latitude Ecosystems and Temperate Ecosystems, presented a symposium at the meeting of Society and Resource Management, which was well received. Great success was achieved by the MAB Directorate on Human Dominated Systems during their charette on south Florida and the Everglades.

All three of these directorate core projects are now in the payoff stage. U.S. MAB is a program of applied science. The directorates are developing ecosystem management tools, which should be of direct benefit to the agencies and managers of biosphere reserves as well as to the managers of other institutions concerned with protecting, and managing, landscapes. I suspect that few other groups have been able to develop actual management tools to achieve such goals.

U.S. MAB Presentation at Society and Resource Management Symposium

Investigators of the Temperate Ecosystems Directorate and High Latitude Ecosystems Directorate core projects presented papers from their research at the Fifth International Symposium on Society and Resource Management June 10, 1994, at Colorado State University.

The investigators from the Temperate Ecosystems Directorate discussed their interdisciplinary research efforts in the Olympic Peninsula and the southern Appalachian highlands. The morning long session, "Integrating Social, Economic and Ecological Processes at Landscape Scale: A MAB Initiative," was well received. Robert Lee, Professor in the College of Forest Resources at U. of Washington, introduced the topics and acted as moderator. Bob Naiman, Director, Center for Streamside Studies at U. of Washington, talked on the process of investigators of various disciplines integrating their sciences. Roger Soles, Executive Director of the U.S. MAB Program, explained the larger framework of MAB and interdisciplinary research.

David Wear, an economist for the U.S. Forest Service, spoke on, "Land Cover Dynamics on Public and Private Lands." He described how land cover transitions in the study sites have changed over time and how they have differed between land owner types.

Penny Eckert, a doctoral student in the College of Forest Resources at U. of Washington, presented, "A Stochastic Model of Landscape Change Using Integrated Social, Economic, and Ecological Data."

Scott Pearson, ecologist at Oak Ridge National Laboratory and U. of Tennessee, discussed, "Impacts of Land Cover Change on Native Species in a Southern Appalachian Watershed." He described how the land cover maps produced by the landscape change model were used to monitor changes in habitat availability for a diverse group of species.

Susan Bolton, Assistant Professor in the College of Forest Resources at U. of Washington, presented, "Modeling the Interaction Between Land Use Patterns and Water Resources." She described the modeling process for assessing changes in sediment yield as a function of changing land use patterns.

Michael Berry, Assistant Professor of computer science at U. of Tennessee, spoke on, "The Design and Implementation of the Land Use Change and Analysis System (LUCAS) for Unix-based Workstations." LUCAS allows for prediction of results from land management practices over time based on the research of the core project.

Robin Gottfried, Professor of economics at U. of the South, defined the studies of the Temperate Ecosystems Directorate's core proposal in their "big picture" context.

Those attending the workshop were excited about the possible use of LUCAS with their own locally generated data.

The High Latitude Ecosystems Directorate investigator, Jack Kruse, Professor of public policy at U. of Alaska, Anchorage, described the outline of the study, "Resource User Involvement and Management Effectiveness: a Comparison of Arctic Caribou Management Systems." He stimulated discussion on the particular problems arising when attempting to measure management effectiveness. The audience identified with the challenges presented when the needs of a wide variety of resource users must be met.

Charette on the Everglades

The Human Dominated Systems Directorate held a charette at which the participants used a scenario-consequence analysis approach to explore spatially explicit management options for the south Florida/Everglades region.

Ecosystem management and the sustainability of the south Florida/Everglades ecosystem were the topics when the Human Dominated Systems Directorate convened an interdisciplinary group of academic and government experts for an intensive charette on Isle au Haut, Maine, June 5–16. The charette was part of the Directorate's five-year core project, "Ecological Sustainability and Human Institutions."

The participants met in informal groups focused on hydrological, ecological, legal, demographic, economic, and political consequences of management actions. The charette results and the series of meetings that led to it reflect the views of more than 100 natural, agricultural, and social scientists; natural resource managers; economists; attorneys; and policy analysts.

The participants concluded that the ecological sustainability of south Florida can be compatible with urban and agricultural interests. They determined that the current and planned management system will not achieve sustainability for the Everglades and sustainability is achievable only by using ecosystem management principles that reflect the interdependency of humans and their environment.

A statement of principles, the Isle au Haut Principles (**see** page 6 of this issue), was composed. A Geographical Information System (GIS) was developed to provide a spatially referenced source of ecological and social data for use at the charette. The directorate plans to make the GIS and the bibliography available in hard copy and through the Internet for interested parties.

A detailed publication on the process and findings of the charette is expected to be published by MAB in the fall and a book, *Ecosystem Management for Ecological Sustainability: The Case of South Florida*, is being written by the participants.

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Tropical Ecosystems Directorate Funds Proposals

The call for proposals from the Tropical Ecosystems Directorate (TED), issued in the August 1993 *U.S. MAB Bulletin*, generated 34 responses. The projects are to complement the core project of the directorate in the Maya Tri-National region of Belize, Guatemala, and/or Mexico. Fourteen proposals were reviewed in detail. Five proposals, considered the most outstanding, have been selected for funding in 1994. The funded projects, principal investigators, and grant amount are:

"Sustainable Use of Four Species of Sabal (Palmae) on the Yucatan Peninsula based on Distribution, Population Structure and Leaf Production," submitted by Rafael Duran Garcia, head of the Regional Herbarium, and Ingrid Olmsted, both of Centro de Investigacion Cientifica de Yucatan, A.C. $11,106.

"Using Geographic Information Systems and Remote Sensing Technologies for Science and Conservation in the Maya Tropical Forest," submitted by Carlos Soza Manzanero, Director, ProPeten of Ciudad Flores, Guatemala and Conrad Reining, Director, Guatemala Program of Conservation International. $12,000.

"Analysis of Land-Use/Cover Changes in the Southern Yucatan Peninsula (Mexico) Using Remote Sensing and Geographical Information Systems," submitted by Yelena Ogneva-Himmelberger of the Graduate School of Geography at Clark University. $4,980.

"Forest Conservation, Clearance, Sustainable Use and the Tainting of Groundwater Reserves in the Maya Tri-National Region," submitted by Philip Reeder, Assistant Professor of geography at the University of Nebraska at Omaha, Philip Morgan and Rasiah Mathuramany both of the Department of Chemistry at the University College of Belize. $9,330.

"The Recruitment of a Belizean National to a Team Researching the Sustainable Management of Chicle Harvesting," submitted by Marydelene Vasquez of Programme for Belize. $12,000.

In addition to the above grants, the TED is seeking funding for several additional small grant proposals during the current fiscal year.

Job Announcement

Vice President for Program

Ecologically Sustainable Development (ESD), Inc., a non-profit 501 (c) (3) organization dedicated to promoting ecologically sustainable development plans and projects throughout the world, is seeking a Vice President for Program. This position will report to the president of ESD, Inc., George D. Davis.

Function: To direct and manage ESD' program activities and to initiate and develop ecologically sustainable development plans, programs and projects throughout the world. Serves as a member of the senior ESD staff.

Educational Requirements: B.S. required in any of the following areas: Natural Resources, Landscape Architecture, Resource Economics, or Regional Planning.

Other Requirements: Demonstrated successful supervisory and management experience; established contacts in the environmental and NGO communities; and working knowledge of geographic information systems (GIS).

Qualities Desired: Experience in natural resource economics, rural area development, preservation of natural areas, biodiversity management, and international diplomacy; public presentation skills and foreign language fluency are highly desirable.

Salary: Commensurate with experience, appropriate to the nonprofit community.

Submit:
1. A 2–3 page statement articulating your personal definition of ecologically sustainable development
2. Résumé, with introductory letter of interest
3. References—3 professional, 3 personal

Deadline: October 31, 1994

Starting date: approximately January 1, 1995

Submit application to:

Donna Beal, Administrator
ESD, Inc.
P.O. Box 848, 2 Church Street
Elizabethtown, New York 12932
(518) 873–3200
FAX (518) 873–2686

Biosphere Reserve Integrated Monitoring

U.S. MAB continues to collaborate with our counterpart program in Europe and Canada in the Biosphere Reserve Integrated Monitoring (BRIM) program.

The goals of BRIM are:

First, to provide access for the scientific, administrative, and policy making communities to the biological, physical, and social science information available on the biosphere reserves of Europe and North America.

Second, to provide a means for a systematic exchange of scientific information.

Third, to provide for the integrated monitoring of biosphere reserves, with special emphasis on global change, biological diversity, ecosystems management and human impact, and environmental sustainability.

BRIM's first product, *ACCESS: A Directory of Contacts, Environmental Data Bases, and Scientific Infrastructure on 175 Biosphere Reserves in 32 Countries*, is still available for (free) distribution, upon request.

BRIM's second product, *ACCESS II*, will be published in late 1994 by the German MAB Program and will provide detailed information concerning the potential for monitoring and research of the permanent plots in the EuroMAB biosphere reserves. Scientists and managers will be able to obtain specifically desired data directly from the respective biosphere reserves.

BRIM's third product will be standardized formats to report the status of flora and fauna inventories on biosphere reserves.

MABFauna initial results are currently available on the Internet at:

HTTP://ICE.ucDavis.edu/

(World Wide Web and Mosaic)

or

ice.ucdavis.edu

(anonymous ftp and gopher)

MABFlora is currently being developed and will be field tested this summer.

During an international consultative EuroMAB meeting at UNESCO in Paris in April, the UNESCO staff circulated prepublication pages which extended the *ACCESS* format to cover all of the biosphere reserves of Africa, Asia, and Ibero-America. When published by UNESCO, this will greatly expand the amount of information available to the world's scientific and policy making communities.

International Collaboration on Central Europe

U.S. MAB and UNESCO are collaborating with the Global Environmental Facility (GEF) and the World Bank to increase the communication capabilities of the biosphere reserves of central Europe.

World Bank managers of the GEF are working to improve management capabilities at conservation sites in Poland, Czech Republic, Belarus and Slovakia. A critical element of this program is to create national and international communication capability.

UNESCO MAB is developing MABNet to electronically link the data bases of the worldwide biosphere reserves. The World Bank managers and UNESCO MAB have agreed to collaborate to identify the infrastructure needs of central European sites so as to communicate through national and regional nodes and eventually through the Internet.

U.S. MAB is assisting this collaborative effort by supporting a site-survey mission by U.S. experts on Internet and data-base management. Teams led by Han Qunli for UNESCO and James F. Quinn, Professor, Division of Environmental Studies of U. of California, Davis for U.S. MAB will travel to central Europe in July. The teams will identify the communications infrastructure needs to support electronic (including Internet) connections among reserves in Poland, Czech Republic, Belarus, and Slovakia and regional, national, and international nodes.

The Central Europe Office of the World Bank has promised in return that they will help provide the necessary equipment and training needs of these GEF sites.

The U.S. members of the survey teams will also visit biosphere reserves in Germany and France. This portion of their itinerary will advance the objectives of the BRIM program of EuroMAB. The U.S. team will work with the scientists at these German and French sites to incorporate existing biodiversity data bases into the standardized MABFauna and MABFlora data-base format.

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Isle au Haut Principles of Ecosystem Management

The Human Dominated Systems Directorate of the U.S. Man and the Biosphere Program is conducting a five-year interdisciplinary study on ecosystem management for sustainability. In June 1994, on Isle au Haut, Maine, a charette was convened to apply these concepts to south Florida as a case study. The charette concluded that what is being done now for Everglades restoration will not achieve ecological sustainability. A sustainable south Florida environment is achievable only through utilizing ecosystem management principles that recognize the interdependency of humans and their environment. The resulting vision for south Florida would provide for the long-term security of both the ecological and agricultural systems of the region, while supporting the adjacent urban area.

The working principles of the study are:

• The upland, wetland, and coastal ecological systems that make up the Everglades of south Florida are unique in the world. The people of south Florida require the economic support, clean water supply, flood control, recreational experiences, environmental quality, and aesthetic values that only a healthy Everglades can provide.

• The environment of south Florida has much more water on an average annual basis than is required to support all anticipated urban, agricultural, and ecological needs. However, under the present water management system, the major portion of freshwater is lost to the sea, creating competition among users. The ultimate issue is not competing water needs but the storage and wise management of this renewable resource.

• The Everglades ecosystem has become a significantly degraded remnant of the natural ecosystem. The dominant force causing this degradation is the lack of adequate quantities and timely distribution of water to match the natural cycles of the Everglades. We are faced not just with endangered species but much more critically with endangered ecosystems.

• The greater Everglades ecosystem is a unique regional and national resource of global significance whose continued existence is severely threatened. Our vision is to recover and sustain a healthy south Florida ecosystem, including a diverse human culture and its social and economic needs.

• Ecosystem management is emerging as an innovative framework for achieving harmonious and mutually dependent sustainability of society and the environment. Ecosystem management focuses on human and natural systems at regional scales across intergenerational time periods.

• Ecological sustainability requires the scientific identification of an interacting set of ecological and societal conditions that constitute a healthy environment. The ecosystem management process is designed to adapt human/environment interactions in order to achieve ecological and societal sustainability goals.

• Ecological sustainability of a healthy Everglades requires reestablishment of much of the natural hydrological system in order to provide the water quantity, timing, and distribution. This is necessary over a sufficiently large area to support the ecological components, such as wading birds and a mosaic of habitats, which constitute the essence and uniqueness of the Everglades.

ECOSYSTEM MANAGEMENT PRINCIPLES

- Use an ecological approach that would recover and maintain the biological diversity, ecological function, and defining characteristics of natural ecosystems.
- Recognize that humans are part of ecosystems, and they shape and are shaped by the natural systems; the sustainability of ecological and societal systems are mutually dependent.
- Adopt a management approach that recognizes ecosystems and institutions are characteristically heterogeneous in time and space.
- Integrate sustained economic and community activity into the management of ecosystems.
- Develop a shared vision of desired human/environmental conditions.
- Provide for ecosystem governance at appropriate ecological and institutional scales.
- Use adaptive management as the mechanism for achieving both desired outcomes and new understandings regarding ecosystem conditions.
- Integrate the best science available into the decision making process, while continuing scientific research to reduce uncertainties.
- Implement ecosystem management principles through coordinated government and nongovernment plans and activities.

A complex process examining the requirements for a sustainable south Florida has recently been established at federal, state, and local levels. A continuing dialogue among governmental, academic, and public groups is essential using the Isle au Haut ecosystem management framework for ecological and agricultural sustainability. The principles and conclusions of the Isle au Haut charette offer a vision of a win-win situation for achieving long-term regional security and human/environment sustainability. This process is a rare and critical opportunity that must be seized.

Publications

Remember, enclose your self-addressed mailing label (or labels, if you are requesting several items).

STILL AVAILABLE

from U.S. MAB:

ACCESS: A Directory of Contacts, Environmental Data Bases, and Scientific Infrastructure on 175 Biosphere Reserves in 32 Countries. Published by EuroMAB and available in hard copy from the U.S. MAB office, Washington, DC, or on diskette from:

Customer Services Department
Consortium for International Earth Sciences Information Network (CIESIN)
2250 Pierce Road
University Center
Michigan 48710 U.S.A
Tel.: [1] (517) 797–2727
FAX: [1] (517) 797–2622
E-mail: ciesin.info@ciesin.org

or

UNESCO MAB Secretariat
7 place de Fontenoy
75700 Paris, France
Tel.: [33] (1) 4568–4068
FAX: [33] (1) 4065–9535

The diskettes are available at the nominal cost of reproduction. Be sure to specify either MS DOS or Macintosh compatible diskette.

from others:

Ecological Studies of Buck Island Reef National Monument, St. Croix, U.S. Virgin Islands: A Quantitative Assessment of Selected Components of the Coral Reef Ecosystem and Establishment of Long-Term Monitoring Sites Part II, A report prepared for the U.S. Department of the Interior, National Park Service by John C. Bythell, Elizabeth H. Gladfelter, and Mary Bythell, Island Resources Foundation, and West Indies Laboratory, 1992. (72 p.) Available from Attn.: Caroline Rogers, Virgin Islands National Park, P.O.Box 710, St. John, USVI 00830. Part I, 1991.

NEW PUBLICATIONS

from U.S. MAB:

BRIM Biosphere Reserve Integrated Monitoring
Brochure introducing EuroMAB initiatives, to be published by the U.S. MAB Program in August 1994.

from others:

THE ECOLOGICAL CITY: Preserving and Restoring Urban Biodiversity, edited by Rutherford H. Platt, Rowan A. Rowntree, and Pamela C. Muick,1994, is a collection of original essays by professionals from many fields which is focused on issues of public policy and agency-shareholder cooperation. Editors Rowntree and Platt are former members of the U.S. MAB Directorate on Urban Ecosystems. We appreciate their continued interdisciplinary collaboration. (336 p.) Available from the University of Massachusetts Press, Box 429, Amherst, MA 01004; cloth $45, paper $17.95.

EVERGLADES: The Ecosystem and Its Restoration, edited by Steven M. Davis, John C. Ogden, and Winifred A. Park,1994, discusses particular problems of restoration of the Everglades with emphasis on "interrelated roles of ecosystem size, disturbance patterns, and hydrology as determinants of large-scale ecosystem restoration." John Ogden, Steve Light, Lance Gunderson, Joan Browder, and George Snyder, all coauthors of chapters, participated in the recent Human Dominated Systems Directorate charette in Maine. (826 p.) Published by St. Lucie Press, Inc., 100 E. Linton Blvd., Suite 403B, Delray Beach, FL 33483. Tel. (407) 274–9906 Fax: (407) 274–9927.

Coral Reef Monitoring Manual for the Caribbean and Western Atlantic, prepared by Caroline S. Rogers, Ginger Garrison, Rikki Grober, Zandy-Marie Hillis, and Mary Ann Franke with support from the National Park Service, The Nature Conservancy, and World Wildlife Fund, 1994. This manual is designed to explain some methods of coral reef monitoring useful to scientists, students, and reef managers. Available free by writing Attn.: Caroline Rogers, Virgin Islands National Park, P.O.Box 710, St. John, USVI 00830.

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