



BULLETIN

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UPDATE FROM THE U.S. MAB CHAIRMAN:

A Scientific Advisory Panel appointed by the Chairman of the MAB International Coordinating Council (ICC) has issued a report suggesting a significant restructuring of the Man and the Biosphere Program. The Panel's report will be considered by the ICC during its meeting in late October 1986. Copies of the full report may be obtained from the U.S. MAB Secretariat. Your comments and suggestions would be very much appreciated for consideration by the Secretariat.

The Scientific Advisory Panel consists of twelve scientists serving as individuals, including three from the U.S.: Drs. Orie Loucks, Ariel Lugo and Otto Solbrig.

The highlights of the Panel's recommendations are: reorganize the research program, enrich the training program, and streamline the communications program.

When reviewing the MAB research plan, the Panel attempted to respond to three needs: maintain continuity, develop new research directions, and produce a research plan achievable within the resources likely to be available. The Panel recommends a matrix approach be used to organize MAB's research program, as illustrated:

Research Themes	Project Areas (examples only)				
	Tropical	Temperate	Arid	Urban	Etc.
Ecosystem functioning under different intensities of human impact					.
Mgmt. and restoration of human-impacted resources					.
Human investment and resource use					.
Human response to environmental stress					.

The suggestion to reformulate the research program is based on the following considerations from improvements in ecological theory and administrative realities:

- Recent advances in theory, methods and examples provide better ways to deal with human-biosphere interaction;
- Many international programs are now fulfilling some roles originally addressed only by MAB;
- Budgetary constraints in UNESCO;
- New dimensions to environmental and resource issues require MAB to continue its leadership in the environmental field;
- Innovative approaches to new technology and scientific understanding are needed to benefit humans in their relationship to the natural resource base that supports them.

Training activities historically have been an important part of MAB and the Panel recommended that this area continue to receive a high priority. New initiatives should be developed in conjunction with studies in the area of man/resources. A small program of "in-service" refresher courses should be developed

for advanced training for personnel of resource management agencies with priority given for in-country training. Selected young scientists should receive training of six months to a year. These innovations should be supported through new proposals developed by the MAB Secretariat in cooperation with national committees and international assistance agencies.

The MAB communications program serves two needs--internal program needs and those of a broader public audience. After reviewing the wide range of MAB publications, the Panel recommends that two forms be terminated, the poster series and Natural Resource Research Series, and two new forms amenable to second party support be introduced, bi-annual reports and a MAB books series.

Sam McKee
U.S. MAB Chairman

REPORT FROM THE EXECUTIVE DIRECTOR:

The events of recent months have reaffirmed our prior optimism regarding the increasing support for U.S. MAB's interdisciplinary program of research, education and training on the relationship of people to their environment.

In April the Smithsonian Institution joined U.S. MAB, and Dr. Terry Erwin of the Museum of Natural History was named to head the Smithsonian-MAB Program on Biological Diversity. The National Oceanic and Atmospheric Administration (NOAA), which joined MAB in FY 1985, planned, and carried out in June, a well-received international seminar on the management of marine protected areas (see the following item). Also in June, U.S. MAB and the Peace Corps signed an interagency agreement which provides for an exchange of support and services, especially in the area of tropical forestry.

Although the United States has withdrawn from UNESCO, the Administration sought and received alternative funds for the support of MAB and other science-related programs. Part of these funds will support a U.S. scientist chosen by the U.S. National Committee for MAB, Dr. Melvin I. Dyer, to assist the staff of the MAB Secretariat in Paris to develop and coordinate international research programs. He will also help implement the recommendations of the scientific advisory panels--mentioned in the MAB Chairman's report--to be adopted during the forthcoming meeting of the MAB International Coordinating Council.

I am happy to report that U.S. MAB has in press several publications which will synthesize and summarize knowledge on tropical forests, on the application of remote sensing to environmental data bases, and on an environmental background monitoring effort. These publications, and others we intend to issue in the coming year, coupled with the opportunities described in the recommendations of the scientific advisory panel, continue to point the way for an exciting and relevant future for the U.S. MAB Program.

This issue of the Bulletin highlights some of our FY 1985 program grants; the next issue will review the FY 1986 program.

Roger E. Soles
Executive Director

RECENT MAB CO-SPONSORED MEETINGS:

● International Marine Protected Area Management Seminar (June 1-12, 1986):

This Seminar was organized and held by the Sanctuary Programs Division, National Oceanic and Atmospheric Administration (NOAA) in collaboration with the U.S. MAB Program, the National Park Service, World Wildlife Fund--US, and the International Union for the Conservation of Nature and Natural Resources (IUCN). Officials from 22 countries attended, providing representation from major world ocean basin regions including the Caribbean, South Pacific, Southeast Asia, the Middle East, Mediterranean, and the North Atlantic. The delegates were government managers and scientists currently responsible for marine protected areas in their countries.

The Seminar's central theme was the management of different types of designated marine areas including marine sanctuaries, marine national parks, marine wildlife reserves, and maritime historical monuments. Specific objectives were to:

- Provide an international forum for exchanging information on problems facing marine protected areas and the policies and approaches available for improved management;
- Inform participants of current developments in marine protected area management around the world;
- Provide practical information on marine resource protection, and on marine research and education tailored to the objectives of marine protected areas;
- Provide the opportunity to examine operations at several existing marine protected areas; and
- Encourage the development of improved marine protected area management techniques through continued exchange among national and international organizations responsible for such areas.

Technical content of the Seminar included issues and techniques pertinent to both tropical coral reefs and cold temperate marine environments. Among topics covered were: the role of customary rights in establishing marine protection programs; economic benefits of marine protected areas; human-related disturbances including pollution, anchor damage, and incidental take of marine mammals and turtles; and the role of marine research, education, and on-the-water enforcement to mediate these problems.

Sessions were followed by field demonstrations of management techniques at site visits to Key Largo and Looe Key National Marine Sanctuaries in Florida, and Channel Islands National Marine Sanctuary in southern California. National delegates gave presentations on the status of marine protected area management in their countries including updates on the establishment of a marine reserve around the Galapagos Islands, the creation of a new marine park program in Malaysia, the formulation of the National Marine Park policy for Canada, and the implementation of the voluntary marine reserve program in the United Kingdom. Overall, the Seminar program was considered unique because of its management focus, integration of a range of marine resources including submerged cultural resources, and its broad international scope.

During the Seminar, participants identified issues of common and immediate concern including the role of traditional use in marine protected areas, the concept of multiple use, alternative sources of funding for management programs, defining critical information needs for management, and need for an international network for marine protected area managers. Observations and suggestions were compiled into "action plans" to be incorporated into proceedings for the Seminar. A commitment was also made to establish a support network to continue the exchange of information and expertise among the national agencies represented at the Seminar.

● Joint United States-United Kingdom Siting of Hazardous Technological Facilities Workshop (May 27-30, 1986):

This MAB Workshop on Environmental Perception and Siting of Hazardous Technological Facilities, at the Center for International Briefing at Farnham Castle in Surrey, England, was also co-sponsored by the U.S. National Science Foundation and the U.S. Social and Economic Research Council. The planning committee for the U.S. contingent consisted of members of U.S. MAB Directorate 13 (Perception of Environmental Quality). Workshop Co-chairmen were Professor Kenneth Craik of the University of California at Berkeley, and Professor Terrence Lee, Vice-Chancellor of the University of Surrey. U.S. MAB representative was Dr. Vincent Covello of the National Science Foundation, and chairman for U.S. MAB-13. Dr. John Bowman of the National Environmental Research Council was the U.K. MAB representative.

The 31 participants consisted of leading U.S. and U.K. researchers and experts on environmental impact perception, public risk perception, and the siting of

HIGHLIGHTS - FY-1985 U.S. MAB PROGRAM GRANTS:

- MAB-1 (Tropical Forests): Publication, People and the Tropical Forest: A Research Report from the U.S. Man and the Biosphere Program. Summaries of 20 grants awarded between 1979 and 1982, through the MAB Research Consortium for the Study of Man's Relationship with the Global Environment. Edited by the chairman and members of the MAB-1 directorate: Drs. Ariel Lugo, John J. Ewel, Susanna Hecht, Peter Murphy, Christine Padoch, Marianne Schmink, and Donald Stone. In press.

Report on the Research History and Opportunities in the Bano de Oro Research Natural Area of the Luquillo Experimental Forest Biosphere Reserve. Reconnaissance of the area for vertebrates and invertebrates, a summary and updating of information on a virgin plot of tabonuco trees (which has been monitored by the U.S. Forest Service since 1946), summarization of all available knowledge on the environment and ecosystems of the Natural Area, and the synthesis of information and editing of final report are involved.

Publication, Watershed Management in the Caribbean, by the Institute of Tropical Forestry. Supplementary funding for these proceedings of the U.S. MAB-sponsored second meeting of Caribbean Foresters, St. Vincent (March 1984).

Educational film project, Research to Protect the Tropics. Supplementary support for Organization of Tropical Studies film, directed by MAB-5 (Fresh Water Resources) member, Dr. Charles R. Goldman, U.C.L.A. This film will disseminate information nationally and internationally to scientists, land/resource managers and the public to the end that future tropical land management be directed towards minimizing the negative aspects of the development which is certain to occur in the tropics.

- MAB-4 (Arid and Semi-arid Lands): Continuing support for the development of this directorate's research proposal, Alternative Strategies for Coping with Severe Sustained Drought within the Arid West, a follow-on project from their 1982 interdisciplinary conference on Impacts of Limited Water for Agriculture in the Arid West. Funding sources to carry out this proposal are currently being developed by the members of MAB-4.
- MAB-6 (Arctic Ecosystems): International conference, Arctic Science Policy and Development: Local and International Perspectives (August 1985). Supplementary support to the UNESCO/MAB-Northern Science Network conference on exchange of information relating to arctic science policy in circumpolar nations with a goal of encouraging increased communication between nations and between community representatives and national decision makers.

Classification system, Bibliography of Vegetation Classification, Inventory, and Mapping of Alaska. Supplementary support to update and complete the 1980 bibliography, a necessary step toward publication of a vegetation classification begun in 1976 and now being revised. Earlier versions have been widely used in Alaska by federal and state agencies, in Canada, and by the University of Colorado. Principal investigators are MAB-6 member, Dr. C. T. Dyrness, with Dr. Leslie A. Viereck.

- MAB-7 (Caribbean Island Ecosystems): Report, The Economic Benefits of Marine Parks and Protected Areas in the Caribbean Region, by Tom van't Hof, Netherlands Antilles National Parks Foundation. For use in a workshop at the International Marine Protected Area Management Seminar (see page 2). Subject information will be made available, at a later date, via proceedings of the seminar.

International workshop, Interoceanic Workshop on Sustainable Development and Environmental Management in Small Islands. Initial funding for preparation of background documentation and organizational arrangements for a meeting of experts, to be held in Puerto Rico, November 1986. In addition to U.S. MAB, sponsors include UNCTAD, UNEP, UNESCO/MAB, the Commonwealth of Puerto Rico, and MAB/Canada.

HIGHLIGHTS - 1985 MAB PROGRAM GRANTS (Continued):

● MAB-8 (Biosphere Reserves):

- (1) Development of the data collection framework for
- (2) An inventory of macroreserves in the Eastern Forest Biogeographical Province.

The development of the data collection framework, (1) above, includes:

- (a) classification of vegetation types to be used in describing existing site conditions (including a bibliography on existing classification systems);
- (b) a categorization of protected areas according to management objectives (including a bibliography on previous efforts) and accomplished in close coordination with IUCN's Commission on National Parks and Protected Areas;
- (c) an identification and formatting of data elements to be collected for each site;
- (d) a directory of contacts in international organizations, federal and state governments, private institutions, and individuals for carrying out the study;
- (e) procedure for formatting, coding, and entering tabular and cartographic information into the Conservation Data Base (CDB); and,
- (f) a proposed data management system, including description of analytical capabilities.

An inventory of macroreserves, (2) above, will provide descriptive information in accordance with the data collection framework, (1) above, for sites 5,000 acres or larger within the Eastern Forest Biogeographical Province, as delineated by Udvardy in his most recent mapping of world biogeographical provinces (in press). Sites smaller than 5,000 acres will be included occasionally if they are outstanding examples of the ecosystems characteristic of the province. The information will directly support the selection of areas for nomination as Biosphere Reserves (B.R.) in this province, now being initiated. Site descriptions will contain the information required by (1) above as well as additional information which may be needed by B.R. selection panels to identify and evaluate candidate sites within ecological subregions of the province. A map of each site will be provided to enable locations and, for larger sites, boundaries to be digitized for entry into the CDB being developed at Florida State University by U.S. MAB, the National Park Service, and the Geological Survey. The cartographic portion of the data base uses 1:2,000,000 scale geopolitical base maps provided by the Geological Survey. Tabular information on site characteristics will also be entered into the data base.

Brochure on Biosphere Reserves & Biological Diversity Posters. Support for developing appropriate media materials to disseminate concepts which need to be communicated on the Biosphere Reserve project, and to enhance public awareness of the need for conserving biological diversity through the use of images which make concepts relevant to daily life.

- MAB-14 (Pollution): Research on a U.S. Global Pollution Pilot Background Monitoring Site. Supplementary support for a joint United Nations Environment Program (UNEP), Global Environmental Monitoring System (GEMS) and U.S. MAB research effort. (See following item for additional information.)

INTEGRATED GLOBAL BACKGROUND MONITORING NETWORK:

The primary activity of the U. S. MAB Directorate on Pollution is the establishment of an Integrated Global Background Monitoring Network. The objectives of this network are to:

- (1) Establish reference levels for compounds that are considered pollutants that have both natural and anthropogenic sources;
- (2) Serve as an early warning site for detecting long-term transport of man-made toxic substances. Because many of these compounds already exist in more impacted areas, it is difficult to measure either changes in their levels or their distribution. However,

in pristine areas their confirmed presence in atmospheric samples or in other environmental media samples could be an alert that a particular compound has spread to regions far beyond its original sources. For example, such a station would have been valuable 25 years ago in detecting the actual spread of DDT around the globe. It would also have helped detect earlier the spread of acid precipitation.

(3) Establish baseline levels for selected ecosystem parameters against which data from more impacted areas can be compared. This involves identifying and measuring through time fundamental biological processes that are indicators of ecosystem functioning.

Currently, through funding from the Global Environmental Monitoring System (GEMS) and the World Meteorological Organization (WMO), a pilot station is operating at Torres del Paine National Park in Southern Chile, and through a grant from the U.S. Man and the Biosphere Program, a U.S. site is operating at Olympic National Park. Recently a joint cooperative effort was put forward between the U.S. MAB-6 (Arctic Ecosystems) directorate and the U.S. MAB-14 (Pollution) directorate to further explore the possibility of developing this pilot network. Leaders in this effort were Drs. Chuck Slaughter and Bruce Wiersma. These two directorates propose to look at the potential of the Noatak National Preserve as a baseline monitoring site. A grant was obtained for a one-week pulse study, and a team of five scientists including Chuck Slaughter and Jerry Hilgert from the Institute of Northern Forestry, USDA Forest Service, University of Alaska, Art McKee and Charlie Halpern from Oregon State University School of Forestry, Forest Sciences, and Bruce Wiersma from the Idaho National Engineering Laboratory, spent a week in the Noatak National Preserve in early September of 1985. During this week, they did intensive vegetation plot analyses, aquatic surveys, and sampling for a large number of trace elements. This project was significantly aided by logistical support and technical advice provided by Noatak National Preserve Park Service staff.

The results of the initial sampling are completed and will be published by U.S. MAB. The unanimous decision of all members of the team, based upon their initial impressions of the site and subsequent analysis of data, is that the Noatak has high potential for being a very good baseline monitoring site. The pollution levels measured are extremely low. The vegetation gradients are sharp and occur over short distances. The rather simple vegetation structure suggests that potential anthropogenic impacts might be more easily assessed here than in more complex systems. There is a relative species richness in the vegetation which facilitates sampling. There is an abundance of plant species such as mosses and lichens which have potential for absorbing atmospheric constituents directly from the atmosphere, and many of the vegetation species are at the extremes of their range and might more readily show additional stress from anthropogenic influence than they would in other areas.

APPLICATION OF SATELLITE REMOTE SENSING TECHNOLOGY:

The Urban Ecosystems Directorate (MAB-11), is developing a research proposal on the application of satellite remote sensing technology to Mexico City's urban growth and land use problems to explore and develop the Mexico City urban ecosystem project potential. There is concern about the rapid and essentially unmapped urban growth and the serious reduction of cropland and forests. Landsat is the only existing technology with potential feasibility to monitor the changes and provide a comprehensive tool for urban planning and ecological impact analysis. The proposed research is an extension of investigations currently underway in the Salt Lake City area supported by U.S. MAB, U.S. Forest Service, NASA and the University of Utah—multi-faceted remote sensing analysis of associated problems in a similarly semi-arid environment. The proposed MAB project in the Valley of Mexico would involve both ecological analysis and socio-economic impacts (population densities, public works, and human conditions) in the urban sectors detected by Landsat.

ESTABLISHMENT AND EXPANSION OF BIOSPHERE RESERVES (B.R.):

Several Site Managers' Workshops to discuss establishment or expansion of United States Biosphere Reserves have been convened or are planned. In December 1985, a workshop discussed linkage of the Great Smoky Mountains and Coweeta B.R.s to form a Southern Appalachian B.R., with the addition of Oak Ridge National Laboratory and several state and USDA Forest Service areas. Tom Gilbert, former National Park Service/MAB Coordinator and MAB-8 Co-chairman, has developed a plan for this B.R. as

the center of a regional demonstration project on environmental research and management; it is under review by the U.S. MAB National Committee. In March a workshop was held to discuss formation of a Cumberland Plateau B.R. that would include Big South Fork National Recreation Area, part of the Daniel Boone National Forest, and several other areas. Another was held in May on a proposed Central Appalachian B.R. comprising Shenandoah National Park and parts of George Washington and Monongahela National Forests. Later this year other workshops are scheduled for site managers to discuss formation of biosphere reserves recommended by a selection panel for the Lake Forest Province. Planning is also getting underway for the establishment of B.R. selection panels for the Acadian Boreal Coastal Region (jointly with Canada), the Californian Biogeographical Province, and the western portion of the Eastern Forest Biogeographical Province.

NEW U.S. MAB DIRECTORATE CHAIRMAN:

Dr. Vincent Covello, Program Director for Risk Assessment (Health, Safety and the Environment), Office of the National Science Foundation Assistant Director for Biological, Behavioral, and Social Sciences, was elected to chair the MAB-13 (Perception of Environmental Quality) Directorate at their January meeting. Dr. Ervin Zube, School of Renewable Natural Resources, U. of Arizona, and Chairman of this group since 1980, will remain on the Directorate which includes Drs. Susan Abbasi, Library of Congress; Terry Daniel, U. of Arizona; Donald R. Field, Oregon State U.; Helen M. Ingram, U. of Arizona; Kirsten Johnson, Clark U.; Andrew Seidel, U. of Texas; and Thomas R. Steward, National Center for Atmospheric Research. Two long time members, Drs. Ken Craik, U. of California (Berkeley) and Cy Wapner, Clark University "stepped down" but will serve as resource associate members in the future. Best wishes to Dr. Covello, and many, many thanks to Dr. Zube who has done an impressive job over the years as Chairman of the MAB-13 Directorate.

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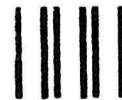
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The MAB 36-poster exhibit, ECOLOGY IN ACTION, is available on loan. You pay for shipping via busline. Send for descriptive brochure and/or further information from Phylis Rubin, MAB Program Officer, MAB Secretariat, U.S. Department of State, OES/ENR/MAB, Washington, D.C., 20520, or call (202) 632-2816.
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