



Dept. of State, IO/UCS  
WASHINGTON, D. C. 20520

September 1, 1978

B U L L E T I N

Editors' Note:

The purpose of this MAB Bulletin is to keep all of those involved in U.S.-MAB current on what's going on in the organization. The information contained in the Bulletin will be more specific and more immediate than that in the Newsletter, and Bulletin news must come from the 400-plus far-flung people with an interest in U.S.-MAB. We consider ourselves to be, not editors, but rather compilers and processors of the information that you supply to us. Please let us know:

1. Have we reached you at your best address? Are your name and address correctly spelled?

2. Do you know of someone who ought to receive the Bulletin whom we have neglected to include in the mailing list?

3. Most importantly: we will rely largely on the readership of the Bulletin to keep us posted on MAB news items in the following categories:

- i. progress of activities in each Project Area.
- ii. ideas for research, at their earliest stage of development. (This is in response to a feeling voiced at the meeting of Directorate Chairmen in May, that such an exchange of ideas could result in improved inter-Directorate cooperation and identification of funding arrangements for projects.)
- iii. changes in personnel.
- iv. new publications.
- v. upcoming meetings, conferences, etc.
- vi. special reports as required.

Stress will be placed on providing names, addresses, and telephone numbers of contacts for further information, publications, etc.

We look forward to hearing from you, both to report MAB news items and to give us some feedback on the format and content of this Bulletin. We can be reached at:

MAB Bulletin  
Dept. of State IO/UCS  
Washington, D.C. 20520

(202) 523-5051 (Nat. Park Svc.) or  
(202) 632-2816

The next issue of the Bulletin is projected for October 15.

Paige Grant  
MAB Program Assistant

Susan Lukowski  
MAB Communications Specialist

Report: Current Activities of U.S. MAB Projects 1-14

Note: the following is an updated version (August 1978) of material which some of you will have previously seen. The name and address of the Chairman of each Project Area is provided as a contact for further information on the activities listed.

MAB-1: Ecological Effects of Increasing Human Activities on Tropical and Subtropical Forest Ecosystems.

Chairman: Frank B. Golley  
Institute of Ecology  
University of Georgia  
Athens, Georgia 30602  
(404) 542-2968

1. "Role of Forest Cutting on Nutrient Cycles in Amazonian Forest at San Carlos de Rio Negro, Venezuela." A trilateral (Venezuela, U.S., Germany) project of research and training that has been in progress for four years and is projected to last at least another two. Much information has been generated and the researchers intend to take the concept of the project to other tropical American countries, to Africa, and to Asia.

2. An international census of tropical ecologists has been completed by Frank Golley at the University of Georgia. Until other arrangements are made, that group will continue the necessary updating of the census.

3. In a further attempt to open up the channels of communication among tropical ecologists, especially between the east and west, the task has been undertaken of establishing world-regional centers for translation and distribution of the newsletter "Wallaceana" among tropical ecologists.

4. MAB-1 was represented at the conference on tropical deforestation at the Department of State, June 1978. The conference was called to develop suggestions from experts on the subject, as to what directions AID and Department of State policy on tropical deforestation ought to take.

5. MAB-1 is collaborating with MAB-2 in the conference planned for May 1979 at Michigan State University: Biological and Sociological Basis for a Rational Use of Forest Resources for Energy and Organics.

MAB-2: Temperate and Mediterranean Forest Ecosystems.

Chairman: Peter F. Ffolliott  
School of Renewable Natural Resources  
University of Arizona  
Tucson, AZ 85721  
(602) 626-2594

1. See MAB-1, #5, above.

2. MAB-2 will be involved in an international symposium on "The Role of Fire Frequency in Ecosystem Development and Ecosystem Management", at the East-West Center of the University of Hawaii, December 1978. The meeting is co-sponsored by U.S. MAB and U.S. SCOPE.

3. Planning is underway for a workshop on intensive forest management in the summer of 1979.

4. Also in the planning stage is a workshop on "Models to Describe Effects of Atmospheric Pollutants", scheduled for summer 1980.

MAB-3: Impact of Land Use Practices on Grazing Lands - Savannah and Grassland.

Chairman: E. Thomas Bartlett  
Department of Range Science  
240 Natural Resources Building  
Colorado State University  
Fort Collins, Colorado 80523  
(303) 491-7256

1. A five-year "Tunisian Presaharan Project" is underway, through Utah State University. The subject under study is restoration of the ecosystem through alternate grazing and land-use systems.

2. MAB-3 cooperated in the First International Rangeland Congress, held in Denver, August 14-18, and sponsored by the Society for Range Management. Two special sessions were led by MAB-3. The first, a discussion of MAB-3 projects around the world, was chaired by MAB Chairman Don King and included a description of the international program by Bernd von Droste of MAB Paris and by Tiberiu Ionesco, Joint UNESCO/FAO MAB-3 Project Coordinator. MAB-3 projects in the U.S., Egypt, Sudan, Tunisia, Nigeria, Bolivia, Chile, Peru, and New Zealand were described by representatives from those regions. A second session emphasizing MAB's interdisciplinary nature, social problems in rangeland use, included participants from the U.S., Canada, Syria, and Egypt.

3. A directory of social scientists working with range management has been prepared. A limited number of copies are available from the MAB Secretariat.

MAB-4: Arid zones: Impact of Human activities on the dynamics of arid and semi-arid ecosystems.

Chairman: Jack Johnson  
Director, Office of Arid Lands Studies  
University of Arizona  
Tucson, Arizona 85719  
(602) 626-1955

1. The development of a jojoba-based industry on Southwestern U.S. Indian reservations is being studied. One of the results of the study may be recommendations for educational programs for the Indians so that they can maintain a foothold in this developing industry.

2. A multidisciplinary group from the University of Arizona Arid Lands Studies Department has been working with Niger's Ministry of Planning to develop a methodology for choosing between various development strategies, based on consideration of the country's natural resource base. The project has focused on the Department (province) of Zinder. LANDSAT imagery is being used to assess the extent and productivity of grazing lands, semi-arid forest resources and watersheds, and surface water resources, particularly the dry lakes (mares); also to determine the location and extent of urban areas, agricultural areas, and barren and eroded land. In addition, documents pertaining to natural resources have been collected for analysis of trends through time. The project is funded for another ten months, during which communication links between the American researchers and the Nigeriens will be further strengthened.

3. In Ghana, work is in progress with the Council on Scientific and Industrial Research to develop various LANDSAT products for a small test site in Ghana's savannah region.

4. Researchers have been working to assist the Peruvian government in planning for management of the development of Lomas de Lachay, one of the last remnants of the coastal foothill fog forest. LANDSAT imagery and color and infrared aerial photography is being used in combination with a systems approach to management. These tools were introduced to Peruvian officials at a workshop in Peru last summer.

MAB-5A: Ecological Effects of Human Activities on the Value and Resources of Lakes, Marshes, and Rivers (Fresh Water).

Chairman: Edward A. Fernald  
Florida Resources & Environmental Analysis Center  
Florida State University  
Tallahassee, Florida 32306  
(904) 644-2008

1. There is a MAB-5A proposal afloat for a River Restoration Program, consisting of (1) a symposium of scientists, planners and other professionals with expertise in the area of river restoration, as well as representatives from the media; (2) publication of the technical papers generated at the symposium; (3) a conference developed out of the symposium, geared to non-technical decision-makers and the public; and (4) publication of the content of the conference. Participation in planning and carrying out this program is invited from other MAB Project Directorates.

2. MAB-5A is supporting a pilot project in interpreting scientific papers for use by non-scientists. The first will be on the subject of testing the pollution status of receiving waters.

3. This summer has seen a two-month study of the correlation between the beginning of the rainy season in Guatemala and the increase in the cases of diarrheal diseases in that country. Further research on the subject may be conducted with MAB-5A support.

4. Preparation of a training manual on bioassay technique is being evaluated for possible MAB-5A support.

5. Dr. Fernald presented a paper on "The Land Use Decision-Making Process: Examples from Forestry Impacts on Water Quality", at an international regional MAB-5 conference in Poland, June 1978.

MAB-5B: Ecological Effects of Human Activities on the Value and Resources of Deltas, Estuaries, and the Coastal Zone.

Chairman: Jack R. Van Lopik  
Dean, Center for Wetland Resources  
Louisiana State University  
Baton Rouge, Louisiana 70803  
(504) 388-1558 or 6710

1. MAB-5B is conducting an ecological study program in Campeche, Mexico. It is intended that the information generated can lead to an understanding of the fishery resource and of potential impacts of oil and gas development on the region, and ultimately to a handbook on coastal zone planning in Campeche.

2. A proposal is under consideration for research on an urban estuary, concentrating on energy flows, "urban metabolism".

MAB-6A: Impact of Human Activities on Temperate and Tropical Mountains.

Chairman: Jack D. Ives  
Director, Institute of Arctic and Alpine Research  
University of Colorado  
Boulder, Colorado 80309  
(303) 492-7909

1. MAB-6A Chairman Dr. Ives has recently taken on the chairmanship of a UN University program entitled "Highland-Lowland Interactive Systems", to be conducted in Thailand, the Himalayas, and in Papua-New Guinea.

The following are research projects in progress:

2. "Application of remote sensing to solution of land-use problems in the Colorado Rocky Mountains"

3. "Avalanche and snow mechanics research, San Juan Mountains - alternate methods of avalanche control"

4. "Adaptation of altitude in Andean Natives" (in collaboration with MAB-12)

5. Preparation of a state-of-knowledge volume on the Andes of South America.

6. "Nutrient movement in a mountain watershed supporting light residential development"

7. Development of an environmental atlas for the Colorado Front Range - including vegetative cover, tree line, and soils - to aid in land-use planning toward the area's designation as wilderness.

MAB-6B: High Latitude Mountain and Tundra Ecosystems (Alaska)

Chairman: Frederick Milan  
Institute of Arctic Biology  
254 Arctic Health Research Center  
University of Alaska  
Fairbanks, Alaska 99701  
(907) 479-7039

1. MAB-6B has conducted a three-year multidisciplinary study of herbivory in tundra: "Research on Arctic Tundra Ecosystems" (RATE). The study was concerned with the influence of grazing on the area around an Alaskan Eskimo Village south of Barrow. The integrated results of the research from nine sub-projects within the study were recently reviewed at a symposium at the University of Illinois.

2. A study of "Range Interrelationships of the Western Arctic Caribou Herd" has been in progress for two years, conducted jointly with the Alaska Department of Fish and Game and using ERTS imagery and aerial photography to map the range.

3. A seminar workshop was held in November 1977 to determine the present state of knowledge about caribou herds in Alaska and to recommend future research requirements to the management agencies who funded the workshop: Federal-State Land Use Planning Commission, U.S. Fish and Wildlife Service, U.S. National Park Service, Alaska Cooperative Wildlife Unit, and the Institute of Arctic Biology (University of Alaska). The report of the findings of the workshop will be published shortly.

4. Frederick Milan, on an NSF Travel Award, attended a scientific meeting in Finland on "A River Valley as a Focus of Interdisciplinary Research". An additional small grant from MAB enabled him to coordinate the Scandinavian component of his proposed research project, "The Human Ecology of Caribou Hunters and Reindeer Herders in Alaska and Scandinavia". This project is one segment of the proposed study, "Ecological and Socio-Economic Consequences of Grazing in Tundra Ecosystems." A second proposal entails research on "The Impact of Tourism on High Latitude Ecosystems". The two proposals are known as "Grazing" and "Gazing".

5. One scientist from MAB Ireland and two from MAB Norway are currently at the Institute of Arctic Biology.

MAB-7A: Ecology and the Rational Management of Island Ecosystems (Pacific)

Chairman: Roland W. Force  
Director, Museum of the American Indian  
Broadway at 155th Street  
New York, N.Y. 10032  
(212) 283-2420

No current activities.

MAB-7B: Ecology and Rational Use of Caribbean Island Ecosystems

Chairman: William S. Beller  
EPA  
401 M St. S.W.  
Washington D.C. 20460 (202) 245-3054

1. MAB-7B has conducted talks with a UNEP official on possibilities for collaboration with UNEP on joint projects on the management of marine sand resources in the Caribbean, and on regional response to oil spills. US MAB-7 has opted not to pursue any activity related to sand resources at this time, but to hold a workshop on developing oil-spill contingency plans for the Caribbean region. Other appropriate groups will be approached regarding collaboration on this workshop.

2. There are some thoughts on the potential of an International Scientific Workshop on Ocean Islands, in cooperation with all other foreign MAB groups that would have an interest in the topic.

3. Ed Towle has a UNESCO grant to do an inventory and assessment of environmental projects and activities in the Caribbean. A product of the study will be a list of topics which MAB-7B can most effectively address.

MAB-8: Conservation of Natural Areas and of the Genetic Material They Contain.

Co-chairmen: Carl M. Berntsen,  
Director, Timber Management Research  
USDA Forest Service  
P.O. Box 2417, RPE 811  
Washington D.C. 20013 (703) 235-8200

and,

Vernon C. (Tommy) Gilbert  
Associate Chief Scientist  
National Park Service  
Department of Interior  
Washington D.C. 20240 (202) 523-5051

1. MAB-8 workshops have taken place in the Southeast, Southwest, Northwest, Rocky Mountain, and Pacific Southwest regions. These workshops drew together the managers of the Biosphere Reserves of each region, scientists who had done research on those reserves or on issues relevant to them, local government officials, representatives of Federal and State land agencies, and MAB-8 representatives. By pooling their experience and information, they came up with recommendations for a US MAB policy and action plan, with special reference to their region. Many of these recommendations are reflected in current MAB-8 activities.

2. To date, 29 US Biosphere Reserves have been designated and their basic characteristics described. The US Forest Service and National Park Service are providing MAB plaques for the Biosphere Reserves in recognition of this status.

3. The Information Synthesis project, conducted by the Oklahoma Biological Survey, is completed and ready to go to press. It provides a characterization of the existing US Biosphere Reserves, allowing comparisons among them. It identifies gaps in the Biosphere Reserves network and will be updated as new Reserves enter the system. The Information Synthesis should be available by late October.

4. A study of the value of conserving genetic resources is being prepared under contract to MAB. The study covers the importance of protecting genetic diversity for world food production, for medicines and health services, and for raw materials for industry. It discusses strategies for conservation and the consequences of genetic erosion.

5. The US Geological Survey is compiling a listing of LANDSAT images of each Reserve, to be used for simple descriptive purposes and to form the basis of a comparison over time.

6. MAB-8 has undertaken the Flora North America project (FNA), a bilateral effort between the US and Canada with peripheral involvement from Mexico. The

FMA will produce a conventional Flora of the vascular plants of North America, using a standardized terminology and format so that all of the information could be computerized when funds become available. The inventory will include an exhaustive list of species, with the plants' genetic variants, locations, and associations in the US and Canada. The information will be accessible to all interested individuals in cooperating countries.

7. A pilot project of long-term monitoring in the Biosphere Reserve system is being developed. A project of soil, water, and air pollutant monitoring has been initiated for MAB-8 by Las Vegas EPA in the Great Smoky Mountains National Park with partial support from the National Park Service. If successful, similar projects will be extended to other Biosphere Reserves. Cooperation with the National Atmospheric Deposition Project is planned, beginning with the establishment of two collection sites at each of four reserves. Finally, an international workshop on monitoring, sponsored by MAB, is scheduled to take place in the Appalachian Mountain Cluster, October 1978.

8. A bilateral program of cooperative research has been initiated on two analogous Biosphere Reserves: Beaver Creek in Arizona, and La Michilia in Mexico. The purpose of the project is to pool the expertise of scientists from the US Forest Service, University of Arizona, Instituto de Ecologia, University of Durango, and other institutions to work on ecological and management problems on the two sites.

9. MAB-8 will be participating in a contract between US MAB and the Agency for International Development (AID), to provide training programs in natural resource conservation and utilization issues for foreign government officials and technicians, at various levels. The emphasis is on identifying environmental considerations that affect decisions on economic development.

10. US MAB-8 will be cooperating with UNESCO to produce a book on Biosphere Reserves, discussing their uses and the diversity of ecosystems represented.

11. Work has begun on a slide show on international Biosphere Reserves. It is not intended to be an exhaustive catalog, but a discussion tool geared to administrators of Reserves and to researchers, to indicate how their efforts can be coordinated and extended worldwide.

12. A briefer slide show has been produced, suitable for an introduction to the MAB program and specifically to Project 8. It is intended for use in training National Park Service interpreters and for general audiences as well. It is available from:

Ms. Paige Grant  
Division of Natural History  
National Park Service  
Department of the Interior  
Washington, D C. 20240  
(202) 523-5051

MAB-9: Ecological Assessment of Pest Management and Fertilizer Use on Terrestrial and Aquatic Ecosystems.

Chairman: Virgil H. Freed  
Director, Environmental Health Science Center  
Oregon State University  
Corvallis, Oregon 97331  
(503) 754-3791

1. MAB-9's principal involvement is with the long-standing AID program of training in the proper use of pesticides. The University of California has the lead in providing expertise in this program, but it is accomplished through the cooperation of several other universities and MAB-9. Colombia and Guatemala are the target countries this year.

2. MAB-9 interest in training in proper pesticide use enters into their planning for an international conference to be held on designing a global strategy for the use of pesticides. A small, preliminary workshop will be held early in 1979, to evaluate the impact of present US pesticide policies on other countries. Several foreign participants will be asked to report on the situation in their country.

3. MAB-9 research in progress includes: "Protection of Pesticide Applicators", led by the University of Miami Medical School; "2,4-D Drift Study" in Oregon, led by Oregon State University; and "Evaluation of Effects of Chemicals on Ecosystems, Including Monitoring for Residues and for Resistance on the part of Organisms" - New York State Agricultural Experiment Station.

4. In cooperation with Phillipines MAB, US MAB-9 is lending its expertise and some limited funding to the tracing of organochlorines through aquatic systems.

MAB-10: Human and Environmental Effects of Major Engineering Works.

Chairman: Charles Wolf  
Environmental Psychology Program  
CUNY Graduate Center  
33 West 42nd Street  
New York, New York 10036  
(212) 790-4551

1. A workshop was held in Tucson, April 1978, to work on formulating guidelines for assessing the social impact of, and alternatives to, major engineering works.

2. The workshop group came up with some material which is currently being refined for application to a study of coal slurry technology.

3. Pending support, an international MAB-10 conference is planned to discuss the US group's guidelines for assessment ..., and to treat the issue of whether regional development is the best approach in developing countries or if they would be best advised to plan development on a more local scale.

MAB-11: Urban Ecosystems

Chairman: Brian Mar  
Department of Civil Engineering  
FX-10, University of Washington  
Seattle, Washington 98105  
(206) 543-7941

1. MAB-11 is focused on applying an ecosystem analysis approach to the study of urban environments. To start with, they are using water resource data because it is readily available and fairly easy to relate to the characteristics of a regional ecosystem. Surveys to obtain the necessary data have been developed and applied in three test cities. The report of this project, A Method of Defining Urban Ecosystem Relationships Through Consideration of Water Resources, is available. The next step is to obtain a sample of several hundred cities, and then to develop a realistic and predictable ecosystem model for an urban environment. All MAB directorates are invited to participate in the collection of data.

MAB-12: Demographic Change

Chairman: Peter Kunstadter  
East-West Center  
1777 East West Road  
Honolulu, Hawaii 96822  
(808) 948-6581

US MAB-12 is turning its attention mainly to the effects of migration on people and on the environments through which they move.

1. A conference on the relationship of human activities in various environments to malaria epidemiology has been proposed as one section of a regional conference on Human Use and Management of the Mangrove Ecosystem. The conference, sponsored by UNESCO's Division of Marine Sciences, will be held in Bangladesh, December 1978.



2. Research is in progress on the demography, genetics, and effects of migration on the health of the population of a region of the Rio Grande in Texas.

3. Also in progress is a study of the effects of modernization and migration on the biological fitness of Samoans. Proposals have been submitted for expansion of this study to include research on the US mainland in addition to Hawaii and Samoa.

4. Historical records of the Connecticut River Valley from the beginning of settlement to recent times, are being studied to evaluate the impact of migrational and environmental changes on the social characteristics and biology of the local human populations.

5. A pilot study is underway, with funding being sought for a larger study, of savannah pastoralists in northern Kenya.

6. The relationship of urbanization, modernization, and migration to reproductive success, child growth, and maternal and child health is being studied in Chiang Mai, Thailand, with the support of the National Institute of Child Health and Human Development.

7. Funding is being sought for a study of demography and health correlates of Philippine migrants from Ilocos, Luzon, to Manila and to Hawaii.

#### MAB-13: Perception of Environmental Quality

Chairman: Joachim F. Wohlwill  
Division of Man-Environment Relations  
Henderson Bldg. S-126  
Pennsylvania State University  
University Park, Pennsylvania 16802  
(814) 865-1467

1. MAB-13 is currently involved in research on perception of technological hazards and risks.

2. A proposal is being developed for research on perception of environmental change.

3. There is a MAB-13 proposal before ISF to study coastal and riverine environmental quality indices.

4. Workshops are planned on the subject of tourism's impacts on environmental quality. A conference on "Applied Techniques for Analysis and Management of Visual Resources" is scheduled for spring of 1979. MAB-13 may also back a conference on "Tourism in the Next Decade", scheduled for March of 1979.

5. Means are being explored for increasing the international activities of MAB-13. One thought is for workshops with foreign MAB-13 Directorates; another is for cooperative research with the International Center for Environment and Society in Berlin, on international environmental attitudes.

#### MAB-14: Environmental Pollution

Chairman: Kenneth Hood  
Ecological Effects, EPA  
401 M St. S W.  
RD-683  
Washington D.C. 20460  
(202) 426-9454

No current activities.

Focus: MAB-8's La Michilia- Beaver Creek project. (See MAB-8 Project Activity Listing, #8)

\* Reservas de la Biosfera en el Estado de Durango, recently published by Mexico's Instituto de Ecologia, offers a description of the physical, biological, and social characteristics of La Michilia and summarizes the research that has taken place there to date.

\* A report on the modelling of La Michilia's white-tailed deer population dynamics, prepared by Mexican researcher Sonia Gallina in consultation with staff from Beaver Creek and the University of Arizona, will be published by MAB Mexico this winter, with support from US MAB.

\* A report on application of a multi-resource inventory system in La Michilia will be published in English, Spanish, and French, to maximize use of the information among managers of dry forests worldwide. UNESCO may be the publisher.

\* University of Arizona range scientists and students of veterinary medicine from the University of Durango are cooperating on a program of research to improve the range and cattle production in La Michilia. This project is in direct response to the felt needs of the residents of La Michilia.

\* Other projects planned for the program include: development of resource maps of La Michilia; amassing and comparing data on producer-consumer biomass on La Michilia and Beaver Creek; and extending studies of insect biomass and distribution that have been done on La Michilia, to Beaver Creek.

\* The US MAB Secretariat has been able to offer some financial support to this program in the way of travel expenses. The Mexican cooperators have covered all living expenses of US visitors and researchers within the program.

A slide-tape show on the Beaver Creek-La Michilia project is available from Dr. Peter Ffolliott, MAB-2 Chairman, or from Ms. Paige Grant, Bulletin Co-Editor.

Note: The Office of Management and Budget (OMB) is expected to issue a memorandum to the heads of Executive Departments and agencies outlining the role of the various federal offices in supporting MAB. Discussions are in progress on what the breakdown of responsibilities will be.

Upcoming Meetings, Conferences, Events:

September 7-9: MAB-8 Directorate Meeting, Catocin, Maryland

September 26-27: MAB-4 Directorate Meeting, Clark University, Worcester,  
Massachusetts

October 23-28: MAB-8 International Monitoring Workshop, Appalachian  
Reserve Cluster, Tennessee

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