



BULLETIN

November 30, 1978

Vol. 1, No. 3

Notes from Executive Committee Meeting

The MAB Executive Committee met on October 12, with MAB research funding a principal topic of discussion. The Committee agreed that it would be useful to call a meeting of representatives of interested Federal agencies in the near future to discuss funding possibilities and alternatives, including a further attempt to match agency missions and responsibilities with specific MAB Project Areas. Hopefully such a meeting would immediately follow circulation by the Office of Management and Budget (OMB) of a draft memorandum concerning MAB, which is expected to be submitted shortly to agencies for comment. However, the inter-agency meeting should be called even in the absence of the OMB memorandum if it appears likely to be considerably delayed.

A "consortium" approach to achieving agency involvement in MAB research funding, proposed by the Forest Service, was also discussed. The Executive Committee reiterated the need to consider first in such planning the pertinent agency procedures and regulations concerning accountability of funds. While consideration should be given to having a consortium cover only one Project Area, to include one or perhaps more agencies plus the universities represented on that particular Directorate, the idea of a consortium or consortia overlapping several Project Areas--with several Federal agencies matching missions to various MAB Project Areas and earmarking funds from the appropriate, already existing budget items--was considered to be more promising.

Further consideration was given to the idea of a MAB conference on a theme related to the future of man in the biosphere. It was agreed that the possibility of a tie-in with the publication early next year of the Global 2000 Study by the Council for Environmental Quality and the Department of State should be explored.

The Committee was briefed on the proposal to establish a Foundation for International Technological Cooperation (FITC), which would be related to the Agency for International Development and would seek to increase United States research capabilities in fields of particular concern to developing countries. It would have a special interest in joint programs of cooperative research between the United States and developing countries and thus would share many common objectives with MAB.

Report from MAB-2 International

MAB-2 has a newsletter published annually by the Institute of Forest Ecology, University of Agriculture, Brno, Czechoslovakia, with UNESCO support. It provides a roundup of international MAB-2 activities, with a focus on one or two projects of general interest. In part, the recent issue provided a report on the deliberations of the International Coordinating Council (ICC) regarding MAB-2 (excerpted from the report of the Fifth Session of the ICC, MAB Report No. 46.)

The ICC recalled that MAB Project 2 is concerned with the study of the ecological and socio-economic effects of different land uses and management practices in boreal, temperate and mediterranean regions for which forests

constitute the characteristic natural cover. The broad objectives are to identify and assess changes which result from man's activities in the boreal, temperate and mediterranean zones, and the effects of these changes on man; and to study the structure, functioning and dynamics of forest ecosystems and their replacement systems, with due consideration to socio-economic processes. Regional meetings were held to consider application of these research themes to the situation in the three zones under study.

An inventory conducted in late 1977 of nearly one hundred MAB-2 research projects in some fifteen countries showed that there was a strong tendency toward research along the following lines: interactions between forest and other ecosystems (including aquatic ecosystems); evaluation of multiple use of forests; ecological and socio-economic effects of intensive forest management, including the consequences of the use of introduced tree species and the effects of new silvicultural practices; and the role of forests in maintaining and improving water resources and in regulating water flow in river basins. The ICC endorsed this inter-disciplinary approach and the focus on social aspects of natural resource management.

The ICC examined the geographic coverage of field activities contributing to MAB Project 2, and found that they were heavily concentrated in the Northern Hemisphere. In considering ways of encouraging the development of MAB-2 projects in the Southern Hemisphere, the Council felt that the Waitaki project in New Zealand ("Ecological and social aspects of changing resource use and development of a river basin and county") could act as one catalyst for training and research planning. Also, they felt, the Australian MAB Committee and institutions located near the Pacific coast of North America could be invited to take initiatives for developing cooperative activities with temperate and mediterranean climate countries in Latin America.

The MAB-2 newsletter noted the following recently past or upcoming meetings:

MAB-2 collaborated with MAB-5 on a regional technical workshop in Warsaw this past summer on the subject of land-use impacts on lake and reservoir systems. Concrete proposals for regional cooperation were put forth, including a regional network of research projects and mechanisms for exchange of information and personnel. Special emphasis will be given to studies at the watershed level on the effects of major land uses and management practices such as changes in vegetation cover, use of fertilizers, waste discharge and the application of pesticides.

A second Warsaw conference, this one on "Economic problems of the environment: theoretical aspects," was held in October, too late for a report in the MAB-2 newsletter.

Another cooperative activity of MAB-2 with MAB-5 was the Workshop on Erosion and Integrated Watershed Management, organized by the Morocco MAB Committee in September. Scientists were present from several semi-arid countries of the Mediterranean region which have serious erosion problems due to steep relief. The workshop reviewed research needs and techniques for the measurement and control of erosion under semi-arid conditions; specified research and training needs for watershed management in the region; examined appropriate methodologies for integrating existing knowledge in the different disciplines involved; and identified individual scientists and institutions concerned with integrated management of watersheds. Three case studies of watershed development projects in Iran, Morocco and Tunisia were reviewed.

An international workshop on "Biological and sociological bases for a rational use of forest resources for energy and organics" will be held at Michigan State University in May 1979, at the invitation of the U.S. MAB-2 Committee.

And an international workshop entitled "Stability of spruce forest ecosystems" will take place at Brno, Czechoslovakia, September 1979. Inquiries concerning this workshop should be addressed to:

Doc. E. Klimo, CSc.
Institute of Forest Ecology
Faculty of Forestry, University of
Agriculture
Brno/Czechoslovakia, Zemedelska 3

Study of World Grazingland Productivity Underway:

George van Dyne, Colorado State University, has received core funding from National Science Foundation (NSF) to begin a MAB-endorsed five-year study-- "Prediction of grazingland productivity under climatic variations". Recognizing the major contribution to human nutrition made by large herbivores in converting forage, frequently from agriculturally useless lands, into foodstuffs useful to humans and considering the variability of precipitation in grazinglands causing fluctuations in the availability of animal protein to a world of rising demand, Dr. van Dyne points out the importance of developing mathematical models relating production to climate, to be used by various national agencies and international organizations in planning for adequate food availability for human populations.

The study will address three broad sets of questions:

1. Where are the grazinglands of the world today and what are their characteristics of climate, soils, vegetation, and animal populations?
2. What is the impact of normal climatological variation on the productive capacity of vegetation and animal systems on these grazinglands in different regions of the world?
3. What are the major trends in land use, production systems, and productive potential of the world's grazingland?

Information to be used toward answering these questions will be derived from published and unpublished reports, and from the experience of individuals who have worked many years in grazingland regions of the world. It may be necessary to rely particularly upon the latter in developing countries where the scientific and technical literature base may not be large.

Here is an example of a MAB project clearly showing its IBP parentage (Dr. van Dyne himself was Director of the IBP Grasslands Biome Study), and which reflects also the shift in approach from straight data-collection to application of collected data to a far-ranging management problem.

Dr. van Dyne's address: Dr. George van Dyne
 Professor of Range Ecology
 Colorado State University
 Fort Collins, Colorado 80521

MAB-5A Update (Ecological effects of human activities on the value and resources of lakes, marshes, rivers, deltas, estuaries, and coastal zones.)

Work continues on the projects listed in the September Bulletin. In addition:

Dr. Robert Livingston of Florida State University is leading a project to assess the biological help of the Appalachian River in Florida.

Dr. John Cairns (MAB-5A Directorate) has proposed that the training manual on bio-assay technique--specifically on use of the diversity index--prepared by MAB-5A, be taken a step further: he proposes holding a week-long workshop for potential users of the manual from countries which have few or no biologists acquainted with techniques used to measure toxic chemical pollution of water. Several techniques would be covered in addition to the diversity index technique. This proposal is under consideration by the Directorate.

MAB-6A Update (Impact of human activities on temperate and tropical mountains)

1. United Nations University - Highland-lowland Interactive Systems, U.S. MAB-6A:

a. Papua New Guinea: A United Nations University evaluation mission was conducted in May 1978, including Dr. Jack D. Ives, U.S. MAB-6A Chairman, and Dr. Gisbert Glaser, UNESCO MAB. Visits were made to Papua New Guinea University, the Technical University at Lea and various government agencies; field visits were made to potential study sites in the Highlands. A research program will be developed during the next 6 - 8 months.

b. Thailand: An evaluation mission was undertaken in April 1978 on behalf of United Nations University by Ives and Dr. Gerardo Budowski, to Chiang Mai University. Visits were also made to experimental horticultural sites and water-sneu reforestation sites in the northwest highlands up to the border with Burma. In September two Thai scientists visited CATIE, Turrialba, Costa Rica, and INSTAAR, Boulder. A major workshop was held in Chiang Mai, November 13 - 18, 1978, to lay the foundations for an active research program. Following the workshop, Ives, accompanied by Prof. Bruno Messerli, Chairman of Swiss MAB, will make an extended excursion into the northern highlands to evaluate the possibilities of natural hazard mapping as part of the developing integrated program.

c. Himalayas: Ives visited university, government and United Nations agencies' offices in Darjeeling and Nepal in April 1978 to explore the possibilities of natural hazard mapping research and applications for the middle mountain region. Subsequent correspondence between United Nations, university, INSTAAR, UNESCO and His Majesty's Government of Nepal, makes it likely that a joint MAB/UNU project will be developed in collaboration with several other agencies. Ives and Messerli will visit Kathmandu following the Chiang Mai workshop in late November. In particular, discussions will be held with Dr. Ratna Rana, Chairman of the Nepal National Committee for MAB, and plans will be laid for a workshop in March/April 1978 to be held in Kathmandu. The prospects for active research beginning after the 1979 monsoon appear very good. Of particular interest for U.S. MAB, based on discussions between Dr. Robert Kates and Ives, is the possibility for U.S. MAB-6A and MAB-13 collaborating on the Himalayan project. This point needs further discussion with U.S. MAB-13.

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

This long-term project, supported by NASA, is proceeding. Additional experimental hazard maps are being developed, one of which should be ready for the printer by January 1979. Several publications have appeared during 1978:

Ives, J.D. and Bovis, M.J., 1978: Natural Hazards Maps for Land-use Planning, San Juan Mountains, Colorado, U.S.A., Arctic and Alpine Research, Vol. 10, No. 2, pp. 185-212.

Ives, J.D. and Krebs, P.V., 1978: Natural Hazards Research and Land-use Planning Responses in Mountainous Terrain: The Town of Vail, Colorado Rocky Mountains, U.S.A., Arctic and Alpine Research, Vol. 10, No. 2, pp. 213-222.

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

Project proceeding. A paper dealing with an avalanche forecast model (Bovis, 1977) plus two other publications appeared during 1977-78:

Armstrong, B.R., 1977: Avalanche Hazard in Ouray County, Colorado, 1877-1976, University of Colorado, Institute of Arctic and Alpine Research, Occasional Paper No. 24, 125 pp.

Armstrong, B.R. and Armstrong, R.L., 1977: Avalanche Atlas, Ouray County, Colorado, University of Colorado, Institute of Arctic and Alpine Research, Occasional Paper No. 25, 132 pp.

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

Publication in press -

Winterhalder, B.P. and Thomas, R.B. 1978: Geocology of Southern Highland Peru: A Human Adaptation Perspective. University of Colorado, Institute of Arctic and Alpine Research, Occasional Paper No. 27, 91 pp.

This is the English language version. A Spanish language version is in translation at UNESCO headquarters, Paris. The publication is a joint U.S./Peru MAB project.

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

UNESCO-MAB appointed Mr. Eduardo Gomez Molinas to work with Ives in Boulder for the period, April-August 1978. Considerable progress has been made, but there remains serious gaps in material, especially from the northern Andes. The current status is under review by Dr. Gisbert Glaser (UNESCO), Professor Paul Baker (Penn State) and Ives.

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

Based at the INSTAAR Mountain Research Station, this project, with Professors Michael Grant and William Lewis, University of Colorado, as co-principle investigators, has acquired a large amount of new data and is currently in a write-up and publication stage. Hopefully, four to five papers will be published in the next twelve months.

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:

As a further development of item (2) INSTAAR is undertaking production of an "Environmental Atlas" for the newly designated Indian Peaks Wilderness Area of the Front Range, Colorado (bill signed by President Carter on October 11, 1978). The atlas will include maps (1:24,000) of vegetation, soils, surficial geology, snow and ice, topography, landforms and natural hazards. The full table of contents is presently under review in collaboration with local user groups. Associated with this item is the recommendation of Niwot Ridge, Front Range, for designation as a Biosphere Reserve. This vital alpine and subalpine research area was deliberately omitted from the original area proposed for Indian Peaks Wilderness to facilitate process of the Biosphere Reserve designation.

MAB-7B Update (Ecology and rational use of Caribbean island ecosystems)

1. The Directorate of MAB-7B is considering a proposal that it organize a "Workshop on the environmental management and economic growth of Caribbean Islands (WEMEG)". Its theme: the healthful economic growth of oceanic islands depends largely on understanding the way island ecosystems work, and on managing and using them wisely. Its purpose: to show ways to bring about such management and use--through prudent planning, appropriate governmental policies, and working in a coordinated fashion at national and regional levels. "Ecosystems" is interpreted broadly to include human as well as natural resources, and their interrelationships.

MAB-7B will be able to utilize the groundwork laid by officials from Puerto Rico, Barbados, Guyana, Jamaica, Trinidad and Tobago, who met in Puerto Rico three years ago to prepare for a conference very similar to what MAB-7B is proposing. For reasons not related to the worth of holding such a conference, it never materialized.

2. The staff of the Ocean Programs Branch of EPA is looking into the possibility of a project to involve government, industry and academia, using the Flower Garden Reef in the Gulf of Mexico as a model for learning the environmental effects of oil and gas drilling on sensitive areas on the outer continental shelf. Should such a project develop, it would seem a likely one for MAB participation.

MAB-8 Monitoring Workshop

Scientists from 10 nations throughout the world gathered in the southern Appalachians from October 20 - 28, to attend the International Workshop on Long-Term Monitoring in Biosphere Reserves, sponsored by the U.S. MAB Project 8 (Conservation of natural areas and of the genetic material they contain).

The purpose of the workshop was to visit and evaluate a pilot pollutant monitoring project in progress in the Appalachian Biosphere Reserve Cluster, and to develop a framework for a program of long-term monitoring in Biosphere Reserves. After meetings in Washington, D.C., the group proceeded to Oak Ridge, Tennessee to spend a week visiting the Oak Ridge National Laboratory, Great Smoky Mountains National Park and Coweeta Hydrologic Station. Morning and evening sessions were spent in working groups and two days were devoted to developing the actual monitoring program framework, which, after identifying broad areas for monitoring, assigned priorities to specific parameters within each area and recommended stages in which long-term monitoring programs could be implemented.

A draft report will be developed and reviewed by Workshop participants before it is sent to UNESCO and UNEP. They in turn will ask for the report to be reviewed in MAB by MAB National Committees in the 35 countries which have Biosphere Reserves. The final report is to be issued as a joint UNESCO/UNEP effort and may be introduced at a future meeting of the UNEP Governing Council. Termed, "a potentially significant breakthrough" by Don King, Chairman of the U.S. MAB National Committee, the Workshop represents an important step toward achieving a framework within which UNESCO and UNEP can work together on a long-term monitoring program in Biosphere Reserves.

The Center for Field Research/Earthwatch

The Center is a private, non-profit organization established to serve and assist the research community. Explaining the reasoning behind the establishment of the Center, its brochure notes: "Funds for basic field research projects are scarce. The economic demands on traditional sources of such funds are increasing. Universities and museums are less able to send their faculties into the field. The capital-intensive needs of applied research compete for federal dollars, thereby limiting the funds available to basic research investigations in many disciplines. All too often worthy projects are left unfunded.

"The Center for Field Research was established to assist scientists and other scholars in funding their research. The Center arranges financial support for research investigators whose projects can constructively utilize non-specialists in the field." The Center is not the source of funds; rather, it reviews and evaluates research proposals in a wide range of disciplines and assigns those accepted to Earthwatch. Earthwatch (not associated with UNEP) in turn raises the funds from carefully selected paying non-specialist volunteers who collectively finance the projects, in return for the opportunity to work as assistants to research scholars in the field.

Beginning with four projects in 1971, Earthwatch has raised over a million dollars to support 300 research scholars working in 19 states and 44 countries. The entire effort has been supported by interested citizens who have volunteered their time, offered their skills, and contributed financially to the cost of the projects. The net effect has been to provide funds and intelligent manpower as a resource to the research community. Equally important have been the good will and better understanding of science given to participating members of the public.

The size of grants is limited by the number of non-specialists participating, since they are the source of funds. Depending on time and costs in the field, the per capita contribution of participating non-specialists ranges from \$200 to \$650, exclusive of their transportation costs to the research area. Support teams have generally ranged in size from 6 to 15 individuals working in the field from 12 to 25 days. Longer-term support is possible by bringing in successive or staggered teams of participants during a single field season.

Scholars from all disciplines and of all nationalities are invited to submit applications for support to:

The Center for Field Research
10 Juniper Road, Box 127
Belmont, Massachusetts 02178

(617) 489-3032

HELP WANTED

We thought Bulletin readers might be interested in seeing notices of employment opportunities in MAB-related fields:

Wildlife Program Assistant Supervisor, Game & Fish Division, Georgia Department of Natural Resources. Headquartered in Atlanta, duties include coordination of ten state fish hatcheries, public fishing areas and general management of the fisheries program. Qualifications: 4 years professional experience in wildlife management or research and completion of BS in wildlife-related field with 15 quarter hours in wildlife. Salary: \$1,465 - \$2,001 per month. Contact: Glen Gibson, Personnel Recruiter, 270 Washington Street, Atlanta, Georgia 30334. (404) 656-2695.

Two International Training Administrator positions at the GS-13 level are open in the Office of International Cooperation and Development, U.S. Department of Agriculture. Qualifications for the Training Administrator in the Animal Science, Education, and Forestry Branch include, in part, a Ph.D. and specialized expertise in one or more of the following: Forestry, Range, Wildlife, Recreation and Parks. For the position in the Course Planning and Development Branch, qualifications include, in part, a doctorate and special expertise in one or more of the following: Agriculture, Education, Sociology, Management, Communications, or a related human resource development field. Contact: (for both positions) Dr. Robert A. Ayling, Deputy Director for International Training, Office for International Cooperation and Development, U.S. Department of Agriculture, Washington, D.C. 20250. (202) 447-4711.

Dr. George van Dyne is looking for a Research Associate at the M.S. or Ph.D. level to participate in the "Prediction of grazingland productivity under climatic variations" study (see page 4). The Research Associate, working with a small team, will be a key person in the acquisition, evaluation, and analysis of information and will participate in the development and implementation of simulation or statistical models. He/she will also participate in writing various segments of interim and final reports. Some travel for data and information acquisition and for meeting with an advisory group will be required. Persons with special skills in biogeographic analyses, data summarization and trend analyses, agriculture or renewable resource management, and related fields will be sought.

Persons with capabilities in non-English languages of the grazingland regions of the world will be given special consideration. Salary for the position is negotiable, depending upon background and qualifications. The appointment will be for an initial one-year period, to be followed by two additional years upon satisfactory performance in the first year. It is probable that a continuation grant will be sought after the initial three-year phase to complete the project. A full-time person is being sought, but a 3/4-time position will be considered for an advanced degree candidate.

Persons interested in the position should send a resume and detailed statement of interest and qualifications to the address listed below. They should request that three letters of recommendation also be sent to the name below. The position will be filled as soon as possible.

Professor George M. van Dyne
Colorado State University
Department of Range Science
Fort Collins, Colorado 80523
U.S.A.

UPCOMING MEETINGS

1978

Dec. 3 - 5 National Committee Meeting, Alexandria, Virginia

Dec. 11 - 15 MAB-2 "The Role of Past and Present Fire Frequency and Intensity on Ecosystem Development and Management", Honolulu, Hawaii

1979

Late March International Conference on Impact of U.S. Pesticide Policies
(Tentative)

Mar. 13 - 16 The Development & Application of Ecological Models in Urban & Regional Planning, Frankfurt (Main), Germany (MAB-11)

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