



School of Natural Resources

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June 23, 1988

Dear NPS Unit Personnel:

Some time ago you were kind enough to respond to the survey, "Interpreting Biological Diversity. That survey has been completed and the data are being used to guide the NPS "Interpreting Biological Diversity" thrust. A report will be made to the field units in an "NPS Communicators' Handbook for Interpreting Biological Diversity" which an NPS task group is targeting to finish and distribute in Spring 89.

In your response to the questionnaire, you indicated that you would be willing, if time permits, to provide example programs or materials relating to biological diversity from your area. If you have materials or sample programs we would greatly appreciate them by early-August in order that the NPS task group can develop the Handbook in a timely fashion.

Sample programs can be anything from full programs that relate to biological diversity to one minute vignettes that you include in a program which highlights biological diversity. Slides or photographs of exhibits or way-sides, copies of brochures or articles and bibliographic citations will all be useful. Due credit will be given to contributors and their park.

A number of regional offices and parks are developing materials for the Handbook. Your input is also needed.

Our assignment at The Ohio State University as an NPS cooperator is to help pull together, edit and compile these materials. We will send all materials for peer review relating to their validity and utility to an NPS review panel. If you have questions, give us a call at 614/292-2265.

Your time and effort are appreciated. Thank you.

Sincerely,

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Associate Professor

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GWM/KAP:kb



# United States Department of the Interior

## NATIONAL PARK SERVICE

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IN REPLY REFER TO:  
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### Memorandum

To: Directorate, Field Directorate and All Superintendents

From: Director

Subject: Servicewide Biological Diversity Interpretive Initiative

The National Park System contains many of our nation's great and valued historical and cultural sites and artifacts. The System also contains some of our nation's critical and irreplaceable ecosystems and the living biological organisms that comprise them. These natural systems, processes, and species are part of our American heritage.

Essential to the mission of the National Park Service to preserve the biological diversity within the National Park System, it is inherent that we develop a strong interpretive and educational program. To meet this challenge, the Servicewide Biological Diversity Interpretive Initiative will begin in FY 1989 and will continue as an important interpretive program indefinitely.

To assist you in developing your interpretive and educational programs, you will find attached a copy of "Interpreting Biological Diversity in the National Park System." Of the projects identified within the plan, progress is underway on the interpreter's handbook, the slide repository, and the interpretive brochure. Other projects will be developed in the months to come.

If you have any questions or wish further information on this program, please contact either Mr. Mike Watson, Chief, Division of Interpretation, Washington, DC, at (202) 523-5270, or Mr. Dick Cunningham, Regional Chief of Interpretation, Western Region, San Francisco, California, at (415) 556-3184.

The preservation of biological diversity is central to the mission of the National Park Service. Preservation of biological diversity should also be central to the personal mission of each dedicated employee of this organization. It relates to the basic reasons why many of us joined the National Park Service as a career: a love of wild things and wild places and a continuing fascination with the mystery of how it all works. Perhaps, expressed in simple feelings, this is what biological diversity is all about.

# INTERPRETING BIOLOGICAL DIVERSITY IN THE NATIONAL PARK SYSTEM

A National Park Service  
Interpretive Initiative Plan

Prepared by the Biological Diversity  
Interpretive Initiative Task Group

National Park Service  
U.S. Department of the Interior  
April 1988

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"All that lives beneath Earth's fragile canopy is, in some elemental fashion, related. Is born, moves, feeds, reproduces, dies. Tiger and turtle dove: each tiny flower and homely frog: the running child, father to the man, and, in ways as yet unknown, brother to the salamander. If mankind continues to allow whole species to perish, when does their peril also become ours?"

- World Wildlife Fund

## SUMMARY

Protection of biological diversity in the National Park System is critical in order to preserve the basic biological elements for which many parks are established and is central to the mission of the National Park Service. The Servicewide Interpretive Initiative on Biological Diversity has been called for by Director Mott. This plan provides for a Servicewide interpretive/ educational effort on biological diversity. Although some aspects of biological diversity are currently being interpreted in the parks, implementation of this plan will greatly increase the level of activity and geographic scope.

The formal program will begin in FY 1989 and will be an ongoing program, because the loss of diversity is an ongoing phenomenon. Appropriate units of the National Park System are expected to participate, according to the degree of each park's biological diversity, interpretive themes and objectives, research capability and funding. Many parks established for cultural resources protection also contain significant biological resources. It is intended that this Servicewide interpretation initiative include our cultural resource parks, when applicable. Indeed, there are a number of thematic overlaps with biological resources in many of our cultural units.

The program plan proposes, first, to educate National Park Service communicators and then increase public awareness of biological diversity issues. Primary target audiences are park visitors, local communities, and schools; secondary audiences are the general non-visiting public, mass media, special users' groups, other agencies, legislators and state and local governments, cooperating associations and park concessioners, academia, and conservation organizations.

The major activities are:

1. Plan development;
2. Program presentation;
3. Peer review of all materials;
4. National Park Service staff training;
5. Interpretive materials development;
6. Park interpretive activities;
7. External educational activities;
8. Biological diversity workshops;
9. Establishment of interdisciplinary coordination;
10. Funding strategies and sources; and
11. Program evaluation.

This plan outlines these activities in the order listed.

These major activities are composed of specific projects; each of which is assigned a priority ranking of one (1) or two (2) to indicate a greater or lesser need.

The majority of activities have low or no additional cost. This is because the basic, traditional interpretive services offered by the National Park Service will be the most effective methods to communicate information on biological diversity. These services include guided walks, talks, and campfire programs -- settings in which the visitor is in actual contact with biological diversity and ecosystem processes.

Certain items essential to the program include an interpreters' manual, a biological diversity slide repository for Servicewide use, two slide-tape programs and converted videotapes, a brochure, and a traveling exhibit produced by the Smithsonian Institution. Table 2 lists the projects, cost estimates, priorities, program responsibilities, and implementation target dates.

## INTRODUCTION

This interpretive initiative plan describes a formal servicewide interpretive effort beginning with special emphasis in FY 1989, but designed to be continued in subsequent years as well. The plan presents the preparation and costs necessary to conduct such an interpretive effort, including a project-by-project action plan and a timetable to achieve the identified goals.

The Servicewide plan is designed to increase public understanding of the importance of biological diversity nationwide. Biological diversity refers to the variety among and within living organisms and the ecological systems in which they occur. It encompasses biomes, ecosystems, communities, species, populations, genetics, and supportive life processes.

## BACKGROUND STATEMENT

Biological diversity is the Earth's most important natural resource. The intricately balanced relationships of myriad plants and animals around the globe that sustain life on our planet, including our own.

The differentiation of new species is a dynamic process. Over the millions of years of life on earth, there have been great natural changes that have resulted in the extinction of species. These losses have at times been sudden and cataclysmic; but usually extinction is a slow process, with new species taking the place of old.

The ever-increasing demands of human societies have led to an abnormally high loss of biological diversity. Habitat destruction and over-exploitation of natural resources are the primary causes of this loss.

In the last 200 years, the rate of species extinction has greatly accelerated. On a geologic time scale, current losses are catastrophic. Scientists estimate that the worldwide rate of species loss is already greater than species replacement and the variety of life forms on our planet is diminishing. What is equally, if not more critical, is the loss of a variety of entire ecosystems; the natural repositories of biological diversity. Loss of biological diversity is one of the greatest challenges to the integrity and future of the United States National Park System.

The critical importance of the Earth's biological diversity and the urgent need to stop its loss have only recently been realized. As a result, the ef-

fort to respond to this crisis is also recent. Biological diversity affects each of us personally. We, as one global society, depend on diversity beyond societal, ideological, or political boundaries. From the great storehouse of genetic material contained in the millions of species of plants and animals now sharing our biosphere, comes food to sustain us, fibers to clothe us, energy to warm and transport us, resources for our industries, pets for companionship, and medicines to heal us. At the ecosystem level the array of healthy, functioning ecosystems regulate climate, maintain soil stability, recycle nutrients, and maintain air and water quality. . . all free services that are essential to human life. But are they truly free? The cost is wise and careful use. If the cost is continually postponed, our children will be left to pay a large and unforgiving debt.

Scattered throughout the units of the National Park System are representatives of at least one-half of the United States' plant species and probably an even higher percentage of mammals. Some of America's most endangered or threatened bird species live in several national parks. Park inventories of other life forms is incomplete and very little is known about natural population variation of any life forms. Because the mission of the National Park Service is preservation and management of natural resources for present and future generations, parks play a vital role in maintaining our country's biological heritage.

National Park Service Director, William Penn Mott, Jr., has expressed great concern over the loss of global and North American biological diversity. Director Mott instructed the National Park Service to initiate an intensive re-

search and public awareness campaign regarding this issue. Scientists, both from within and outside the National Park Service, are conducting research in the parks to gain a better understanding of all aspects of biological diversity. Resources managers are using the products of research and monitoring programs to determine what parks have lost and to find methods to preserve what remains and to reintroduce extirpated species where possible. Interpreters are working to promote in-service and public understanding of the necessity to preserve biological diversity.

### PROGRESS

Background research and program development on biological diversity and the role of the National Park Service have already begun. They include the following:

1. A Task Force on Biological Diversity was convened in September, 1986, to review the Service's role in, and provide a reference for, developing a plan to protect biological diversity;
2. The National Park Service is assisting in developing an Ecosystem Conservation Database to assess gaps in representing ecosystems in the nation's protected areas;
3. Materials development for the public is underway. Included is a brochure about social and ecological issues of biological diversity for park distribution;



4. The Ohio State University is conducting a survey of available materials on biological diversity for use in National Park Service interpretive and educational programs:
5. A survey questionnaire produced by The Ohio State University has been sent to National Park Service field units to aid in developing media materials and activities relating to biological diversity:
6. The Midwest Region of the National Park Service, in cooperation with the State of Minnesota, is developing environmental education materials for National Park System use;
7. Interpretive media were developed at a workshop on interpretation of critical natural resources issues; and
8. The recommendations in this plan made by the Task Group on interpretation of biological diversity.

#### GOALS

The small amount (approximately 3%) of public land administered by the National Park Service and small size of individual parks relative to their dynamic ecosystems, dictate that the National Park Service alone cannot safeguard our nation's biological diversity. There is a great need for shared goals and cooperation among public and private land management agencies and organizations. Protecting biological diversity is an all-encompassing responsibility

that embraces international cooperation. The National Park Service can serve as a leader in the national and global conservation communities by spearheading efforts to conserve the variety of life and ecosystems of our biosphere. We can also be a leader in educating people on the values of and the importance of conserving biological diversity.

The goal of the Interpretive Initiative is to foster public understanding of and awareness for the value of biological diversity and to stimulate active public support for conservation of biological diversity throughout the world, generally, and in the National Park System, specifically.

#### OBJECTIVES

1. To provide each audience with a general understanding of biological diversity to enhance awareness.
2. To provide one, or more, biological diversity topical messages that are relative to the time, place, and audience, for the purpose of enhancing awareness to encourage specific conservation actions.
3. To provide messages that emphasize local, park-related issues and how these issues relate to similar regional, national, and global perspectives.
4. To provide communicators of biological diversity with background materials, training, and media necessary for accomplishing the program goal.

5. To provide, or promote, local, regional, national, and worldwide networking on biological diversity issues.
6. To communicate the National Park Service history and role in preserving biological diversity issues.
7. By methods appropriate to the audience, time, and place, communicate the various dimensions of biological diversity which may include, but not be limited to the following:
  - A. Values
    1. Economic (monetary vs. non-monetary)
    2. Recreational (consumptive vs. non-consumptive)
    3. Ecological/Biological
    4. Aesthetic
    5. (Socio) Historic/(Socio) Cultural
    6. Intrinsic Value and Philosophical Concerns
  - B. Recognized Hierarchies of Biological Diversity (a Continuum)
    1. Biosphere/Biome
    2. Ecosystem/Community Diversity
    3. Diversity Among Species
    4. Population Diversity Within Species
    5. Diversity Within Populations (Genetic/Demographic)
  - C. Endangered, Threatened, and Extirpated Species

- D. Role of Special Designations and Uses of Areas (including multiple use) in maintaining Biological Diversity
  - E. "Modified" Versus "Unmodified" or Natural Habitat
  - F. Native (Endemic) and Indigenous Species versus Non-Native or Alien Species
  - G. Restoration of Species and Habitats
3. Provide awareness of and support for long-term monitoring of biological diversity.
  9. Ensure that a balanced, scientific perspective on biological diversity is communicated to National Park Service staff and to the public.
  10. To communicate that human-induced biological diversity losses are occurring at a cataclysmic rate and that we must confront the problem and attempt to deal with it constructively.

### PROGRAM CONSIDERATIONS

Many park visitors are already aware of the loss of biological diversity. The National Park Service must be able to respond to their concerns and questions. Other visitors and members of the general public have little awareness of or concern for biological diversity issues. A well-developed, credible interpretive and educational program will help resolve the leading questions of "Why should I care?" or "How does it affect me?" Park interpretation, environmental education, and management by example are key components of the National Park Service interpretive initiative effort.

Responsibility for public dialogue rests largely, but not solely, with the National Park Service interpreters. The term "communicators" more accurately reflects the intent of this plan. Communicators also include park managers, researchers, resources managers, maintenance staff, public information officers. . . whoever conducts dialogue with the public.

#### PROGRAM ACTION PLAN

The Biological Diversity Interpretive Initiative Plan proposes to prepare materials and educate National Park Service employees beginning in 1988 and continuing into 1989. The Servicewide interpretive initiative and educational program will formally begin during FY 1989. During the following years additional material will be prepared and distributed to National Park Service employees. The development time required for some products, such as audiovisual programs and a biological diversity slide repository, will continue beyond FY 1989.

Therefore, the program is designed to expand and to intensify biological diversity interpretation and education throughout the Service in FY 1989 and to continue emphasis thereafter. The need for intensifying biological diversity interpretation and education at the park, local, regional, national, and global levels will increase and not diminish in the foreseeable future.

The major program activities and their component parts are described below. The scheduling of major program activities is shown in Figure 1 ("Program Time Lines"). The scope of products to be developed are listed in Table 1. Specific activities and products are keyed by number (in parentheses) to the task numbers listed in Table 2 ("Program Projects"). Recognizing that the list of projects vary in importance and cost, the task force has assigned a priority ranking to each project. These rankings are shown in Table 2.

1. PLAN DEVELOPMENT

An approved plan should be completed by April 30, 1988.

2. PROGRAM PRESENTATION

After the final draft copy of the plan is completed, copies will be sent to the Regional Directors and Associate Regional Directors for their comments. After their concurrence, and the Director's final approval, a memorandum from the Director would be sent to all National Park Service employees announcing the program. The Director's approval will be sought prior to the National Superintendents' Conference to be held in late May.

3. PEER REVIEW OF ALL MATERIALS

Peer review by ad hoc specialists from within and outside the National Park Service will be used to review and evaluate interpretive and educational materials to be used for both National Park Service employees and the public prior to distribution. Peer review will occur, primarily, during the last half of FY 1988 and throughout FY 1989, and continue as needed as new materials are developed.

4. NATIONAL PARK SERVICE STAFF TRAINING

Education of all National Park Service employees will require use of written and audiovisual materials as well as personal communication. This will also include formal training at national, regional, and park levels.

A. Integrate into existing courses (4a)

The importance of biological diversity issues can be communicated through existing training center agendas (e.g. "Global Issues in Conservation" taught as part of the "Ranger Skills" course, and integrated into the "Critical Natural Resources Issues: Interpretation Workshop" course). Regional and park specific training can be developed using the Regional Interpretive Skills Team instructors.

B. Develop videotape (4b)

Professionally produced audiovisual programs and resource materials from outside of the National Park Service can be used for staff and public education. Examples would include the biological diversity traveling exhibit produced by the Smithsonian Institution and the videotaped program on endangered and threatened native plants produced by the Center for Plant Conservation. Another excellent resource is "The Wildlife Trade Kit" produced by TRAFFIC U.S.A. of the World Wildlife Fund. Use of existing high-quality professional resources eliminates the cost to the National Park Service to produce such materials.

This plan proposes development and production of an approximately 30-minute videotape program by the National Park Service, featuring interviews with National Park Service scientists, resources management specialists, interpreters, and park managers. A cross section of these representatives photographed at field areas, will feature



various aspects of biological diversity issues as they affect the National Park System

C. Develop interpreter's manual (4c)

A major item needed for training National Park Service staff will be a manual for interpreting biological diversity in the National Park System. The manual will be produced for use in a loose-leaf binder format that will permit adding additional training and interpretive materials. The manual will serve as both a training document and a resource for interpretive and educational activities. It will include background information covering biological diversity, sample National Park Service field area program activities, sample educational materials, a list of help sources, bibliography, space for park-produced interpretive and educational materials, appropriate clip art items, and material on the biological diversity slide repository.

The manual will be produced by various members of the Task Group with assistance by specialists within and outside the National Park Service. We are presently planning for one copy per park with multi-district parks receiving additional copies.

The Servicewide brochure on biological diversity (discussed below) will also be used as a staff training aid.

D. Use qualified scientists (4d)

Additional staff training can be fulfilled through the use of qualified specialists from within and outside of the National Park Service and others who are capable communicators to speak on biological diversity and resource protection issues. This training can be accomplished at permanent and/or seasonal staff training, staff seminars, concessioner and cooperating association meetings, volunteer training, and various management level conferences and workshops.

5. INTERPRETIVE MATERIALS DEVELOPMENT

Proposed interpretive media are described below and are listed in Tables 1 and 2.

- A. Develop an Interpreters' Manual (5a). This manual is described in depth in Section 4, "NATIONAL PARK SERVICE STAFF TRAINING." It will serve as both a training manual and actual resource for interpretive ideas, methods, and techniques on biological diversity. It will be a key component of the interpretive and educational effort.
- B. Develop a foldout brochure (5b). The Service is preparing an attractive and informative color brochure on biological diversity in the National Park System. The brochure will be used for both public distribution and employee information.
- C. Develop biological diversity slide repository (5c). A consequence of the biological diversity interpretive initiative is the need for

a centralized clearinghouse for images related to the biological diversity emphasis. This clearinghouse would be a color slide repository for use by National Park Service interpreters and others to supplement existing slide programs which are primarily derived from local park slide collections. No such slide repository currently exists. The need for such a repository is great if the biological diversity interpretive initiative is to be successful. The slide repository will need to be operational by spring, 1989, in order to meet the initiative's objectives. Use of the repository would be a continuing process.

-- Scope of the Biological Diversity Slide Repository

The scope of the repository is to augment existing park slide collections. If an interpreter in a park has need for a certain slide pertaining to biological diversity conservation, he/she would only need to access the repository.

-- Organization of the Slide Repository

Detailed organization of the repository has yet to be developed. However, the general organizational concept is to access slides by means of a system of hierarchical subject categories. The major category headings could be "Plants," "Animals," "Biology/ Genetics," "Bioregions," "Human Impacts," "Graphics," etc. Within the major categories would be more specific cate-

gories such as "Threatened and Endangered Species," "Tropical Forests," "Deforestation," "Medicinal Plants," etc. Slides will be individually numbered and referenced by these numbers or by category.

-- Use of the Biological Diversity Slide Repository

Users of the repository would be National Park Service interpreters, resources managers, researchers, and other National Park Service communicators who will interpret the need for preservation of biological diversity.

-- Location and Curation of the Slide Repository

The task force recommends that the master file of slides be curated at either Harpers Ferry Center in Harpers Ferry, West Virginia or at the Office of Graphics Research in Springfield, Virginia. Slide replication would occur at this site. The working repositories that would be accessed by field interpreters would be strategically placed within the system, possibly one in the east and one in the west.

Managers of these collections would coordinate with the master slide replicating center for resupply of duplicate slides. Two staff persons will be required to manage the working repositories; this could be done as a collateral duty assignment. Fund-

ing would be needed to gather and replicate slides, set up the cataloging system, and acquire storage cabinets and other equipment. Long-term funding will be required to maintain the slide repositories beyond the initial start of the interpretive initiative.

Perhaps an approach to funding, such as donations or line item appropriation, would be among the ways to continue such an effective tool for communicating the value of biological diversity protection.

## BIOLOGICAL DIVERSITY COLOR SLIDE REPOSITORY

## Examples of Subject Categories

## PLANTS

Agricultural  
 Medicinal  
 Timber Products  
 Threatened/Endangered Species  
 Extinct Plants  
 Alien Species  
 Endemic Species  
 Plant Trade

## GRAPHICS

Maps  
 Tables  
 Charts  
 Diagrams

## BIOREGIONS

Neotropics  
 Nearctic  
 Palearctic, etc.  
 Sonoran Desert  
 Chiricahua Mountains, etc.

## ANIMALS

Threatened/Endangered Species  
 Extinct Animals  
 Alien Species  
 Endemic Species  
 Birds  
 Mammals, etc.  
 Wildlife Trade

## BIOLOGY/GENETICS

Isolation  
 Sibling Species  
 Gene Banks - Zoos  
 Parks/Preserves

## ECOSYSTEMS/COMMUNITIES

Tropical Forests  
 Ocean  
 Beaches  
 Lakes/Rivers  
 Everglades

## HUMAN IMPACTS

Hunting/Poaching  
 Fishing  
 Deforestation  
 Soil Erosion  
 Agriculture  
 Fire  
 Pesticides/Herbicides

- D. Distribute Smithsonian Traveling Exhibit (5d). Purchase and distribute 10 sets of the Smithsonian Institution "Diversity Endangered" poster exhibit. This high quality exhibit consists of 15 visually graphic posters with text and one blank panel for a locally adapted message or a generic National Park Service poster. One set will be ordered for each region which will have responsibility for park distribution. Since the unit cost (\$425.00 for the mounted poster display) is so low, parks and/or cooperating associations may wish to purchase their own copies.

These easily assembled poster exhibits will be suitable for both park and off-site use.

- E. Develop National Park Service exhibit panel (5e). The above mentioned Smithsonian poster exhibit contains a blank panel for adaptive use. This plan calls for the development of a high quality, visually graphic poster on biological diversity relevant to the National Park Service. This National Park Service exhibit panel would be the sixteenth panel on the traveling display.

- F. Develop a Charles Harper print on Biological Diversity (5f). The highly graphic Charles Harper poster series is very popular. An appropriate poster on biological diversity which would encompass representative diversity throughout the National Park System could

be a popular sales item for cooperating associations and/or concessioners.

- G. Develop generic slide program (5g). Assemble and produce a sound/slide program on biological diversity in the National Park System for Servicewide use. The program will address the major issues of biological diversity as they relate to the national parks. The program will be used for both staff training and direct public interpretation. Parks will be able to add park-specific slides at the end on local biological diversity issues.
- H. Develop generic videotape program (5h). This is the same servicewide program described above converted from sound/slide to videotape. Conversion to videotape offers additional interpretive and educational potential but does not allow park-specific scenes to be added.
- I. Develop Western Hemisphere slide program (5i). Assemble and produce a sound/slide program on biological diversity in Western Hemisphere national parks. This program will be able to focus on the various aspects of biological diversity, but also on the conservation issues facing national parks in several countries. This would offer a more global perspective on biological diversity and the value of national parks in resources preservation. A program on Western Hemisphere national parks would also be relevant to the Columbus Quincentennial celebration.



- J. Develop Western Hemisphere videotape program (5j). This is the same program described above converted from sound/slide to videotape. Conversion to videotape offers additional interpretive and educational potential.
- K. Assemble/produce interpretive materials for cooperating associations and concessioners (5k). A list of appropriate biological diversity publications and other items for sale by cooperating associations and concessioners will be compiled. Other interpretive material for concessions use should be considered. This could include placemats, table tents, exhibits, and displays. Such possibilities should be explored with the Washington Office Division of Concessions Management in consultation with park concessioners, interpreters, public relations and advertising specialists, and National Park Service public interest organizations.
- L. Conduct Servicewide Biological Diversity Survey (5l). A servicewide survey of biological diversity interpretive and educational needs is currently being conducted. Results of the survey will not be available until after this plan has been drafted. However, results of the field area survey will be used to amend the plan to meet needs identified in the survey.

6. PARK INTERPRETIVE ACTIVITIES

A servicewide interpretive effort will be under way by the summer of 1989. Parks with primarily winter visitors and seasonal staffing may not be prepared to implement the initiative until the fall of 1989 or winter of 1989-90. Since protection of biological diversity affects almost every unit of the National Park System, it is expected that this subject will be permanently incorporated into the interpretive programs of many parks. This initiative is not meant as a one-time effort. The service-wide program will include the following elements:

- A. Conduct general interpretive programs (6a). The subject of biological diversity lends itself to traditional interpretive programs offered by the National Park Service. Creative interpreters and other communicators should be able to develop and integrate imaginative activities into their standard interpretation operations. Guided walks, campfire programs, and other talks would be the primary methods of communicating biological diversity.
- B. Produce staff-written articles (6b). Many parks offer "park newspapers" or similar visitor information publications. Articles written by National Park Service staff and outside specialists on biological diversity concerning park, regional, national, and global issues would be appropriately communicated in this format. Another method of communication would be through single-topic handouts distributed at visitor centers and through mail requests.

- C. Present children's programs (6c). Special programs for children's interpretation should be developed at the park level. Special exhibits, puppet shows, and nature activities lend themselves to this subject.
- D. Offer seminar programs (6d). Biological diversity should be incorporated into park sponsored field seminars. They would be of special interest to the general public, educators, and students. Seminars for teachers could be specifically developed. Field seminars are usually on a fee basis and are conducted by cooperating associations, affiliated institutions, or other independent non-profit organizations.
- E. Encourage inclusion of messages in interpretive media (6e). The inclusion of biological diversity messages, when and where appropriate, would be encouraged as part of all Harpers Ferry Center and other interpretive planning products.
- F. Promote on-site environmental education (6f). Biological diversity issues and information lend themselves to traditional environmental education activities. Use of parks for school and college field trips should be encouraged. Pilot program environmental education curricula and activities are currently under development.
- G. Promote special emphasis activities (6g). Encourage local schools and community groups to sponsor activities such as essay contests of

biological diversity issues. Artwork could be displayed in visitor centers. Winning essays could be featured in park "newspapers." Cooperating associations and/or concessioners could award appropriate prizes.

- H. Develop model regional programs (6h). Encourage each region, through its regional office Division of Interpretation, to work with field area interpreters to develop a model or prototype interpretive program that could be implemented on a regional or Servicewide basis. An example program based on Southern Appalachia is in an early stage of development. The designated Biosphere Reserve parks would be ideal units for developing model programs.

- I.. Expand use of volunteers (6i). The Volunteer in the Parks (VIP) Program provides an excellent resource for involvement in biological diversity issues. Use of qualified individuals and/or groups could provide assistance in species identification, surveying, and monitoring park natural resources.

## 7. EXTERNAL EDUCATIONAL ACTIVITIES

- A. Prepare media presentations (7a). Newspapers, magazines, radio, and television writers and producers should be assisted in producing articles and shows on biological diversity issues in the parks. Key National Park Service staff should be prepared to address these issues in speeches and other appropriate forums. These presentations

can also be provided to the media for reproduction. Public service announcements, press releases, and press kits will be developed on this subject.

- B. Incorporate National Park Service materials into state environmental education curricula (7b). The Regional Chiefs of Interpretation should discuss, with state education officials how material on biological diversity in the national parks can be incorporated into statewide environmental education curricula.
- C. Establish an interinstitutional standing committee (7c). The function of the committee would be in areas of information exchange, resource materials development, planning, and implementation of interpretive and educational programs on biological diversity. The committee should consist of representatives of agencies and organizations such as the National Park Service, U.S. Forest Service, U.S. Fish and Wildlife Service, Bureau of Land Management, National Oceanographic and Atmospheric Administration, Smithsonian Institution, Tennessee Valley Authority, World Wildlife Fund, The Nature Conservancy, Center for Plant Conservation, Natural Resources Defense Council, Inc., and selected universities.
- D. Create environmental education package (7d). Work with local school systems to develop biological diversity environmental education activities that could be used both in parks and off-site. Provide subject matter bibliography and sources of other biological diver-

sity materials to teachers. The pilot program materials currently under development by the State of Minnesota, in cooperation with the Midwest Regional Office, may be of Servicewide use. Great Smoky Mountains National Park is also actively developing educational modules and materials.

- E. Explore interagency cooperation with the National Aeronautics and Space Administration (7e). Through its Ames Research Center, Moffett Field, California, The National Aeronautics and Space Administration (NASA) is currently exploring a concept proposal for a NASA/NPS cooperative program. NASA technology in areas of remote sensing, mapping, biological diversity modeling, and species inventory could be interpreted and used to further the National Park Service's commitment to science and resources management. Joint training and educational activities will benefit public understanding of ecosystem processes and resources preservation.

## 8. BIOLOGICAL DIVERSITY WORKSHOPS

Develop and conduct interdisciplinary workshops on biological diversity issues. The theme of individual workshops could be on specific biomes and ecosystems. Participants could include various National Park Service disciplines such as research, resources management, interpretation, and park management. Speakers and participants from appropriate outside agencies, organizations, and universities will be an integral component.

Such workshops will be conducted at interregional, regional, and park levels. Workshops could be similar in scope to the Interregional Resources Management/Interpretation Workshops coordinated by the Western Regional Office.

#### 9. INTERDISCIPLINARY COORDINATION

Biological diversity is a multidisciplinary issue that must encompass all organizational levels in the National Park Service. In order to effectively coordinate, manage, and interpret the FY 1989 Biological Diversity Interpretive Initiative, close cooperation between Park Service Research, Resources Management, and Interpretation will be needed. Research and resources management should take responsibility for gathering and disseminating biological diversity data and assist with professional peer review of interpretive/educational material. Interpretation should take primary responsibility for developing, disseminating to the field, and evaluating interpretive materials and programs. Training and professional consultation must exist among all three professions.

Because of the importance of this special initiative and the additional workload it imposes, a temporary staff person should be brought into the Washington Office Division of Interpretation. This person would assist in carrying out this plan and serve as liaison between Interpretation, Research, and Resources Management. Total integration will be required to maximize the opportunities to achieve the objectives of this plan.

### FUNDING STRATEGY AND SOURCES

Since FY 1988 is under way, and preparation of the FY 1989 budget request is in progress, funding for the biological diversity interpretive and educational programs needs immediate attention. Some shifting of FY 1988 allocations, additional items in the FY 1989 budget, and, perhaps, outside funding will be required to carry out the program described in this plan.

### PROGRAM EVALUATION

The education and cost effectiveness of this program should be continuously evaluated and necessary adjustments made. Members of the task group, selected National Park Service communicators, and selected specialists from outside the Service should be involved in various aspects of evaluating interpretive program activities, educational media, accuracy of content, and results.

### CONCLUSION

Preservation of biological resources for future generations is central to the mission of the National Park Service. Therefore, this program must not be viewed as merely an interpretive and educational effort. Public understanding and support for preservation of biological diversity is not only in the best interest of the National Park System, it is also in the best interest of the American people to preserve their natural biological heritage.



Figure 1. PROGRAM TIME LINES

<u>ACTIVITY</u>	FY88	FY89
Plan Development	██████████	
Program Presentation	██████████	
Peer Review all Materials	██████████	██████████
NPS Staff Training	██████████	██████████
Interpretive Materials Development		██████████
Park Interpretive Activities		██████████
External Educational Activities		██████████
Biological Diversity Workshops		██████████
Interdisciplinary Coordination	██████████	██████████
Funding Strategy and Sources	██████████	██████████
Program Evaluation	██████████	██████████

Table 1. PRODUCTS

Development Plan  
Director's Presentation  
Peer Review Panel  
Training Videotape  
Interpreter's Manual  
Brochure  
Slide Repository  
Smithsonian Traveling Exhibit  
NPS Exhibit Panel  
Charles Harper Print  
Generic Sound/Slide Program  
Generic Videotape  
Western Hemisphere Sound/Slide Program  
Western Hemisphere Videotape  
Material for Cooperating Associations/Concessioners  
Servicewide Survey  
General Interpretive Programs  
Staff-Written Articles  
Children's Programs  
Park Seminars  
Interpretive Media Messages  
On-Site Environmental Education  
Special Emphasis Activities  
Model Regional Programs  
Media Presentations  
Environmental Education Curricula  
Environmental Education Package  
Biological Diversity Workshops

Table 2. PROGRAM PROJECTS

The following table identifies the separate projects proposed to accomplish the Biological Diversity Interpretive Initiative. Where special funding is required, it is identified. Projects that can be accomplished with existing and staffing and funding have no costs listed. The projects are listed as given in the plan. Projects that can be initiated in FY 88 are so marked; projects to begin in FY 89 and after are so marked. Higher priority is number "1"; lower priority is number "2".

TASK NUMBER	PROJECT	FY 88	FY 89+	DOLLARS (in thousands)	PRIORITY	RESPONSIBILITY	TARGET DATE
(1)	Develop Plan	X			1	Task Group	April, 1988
(2)	Present Program	X			1	Directorate	May, 1988
(3)	Peer Review Panel	X	X		1	Task Group	Fall, 1988
(4)	Train Staff:						
	a. integrate into existing courses	X	X		1	Training Centers	FY 1989
	b. develop videotape	X		\$12,500	1	Harpers Ferry Center	Fall, 1988
	c. develop interpreters' manual	X	X	\$15,000	1	Task Group	January, 1989
	d. use qualified scientists		X			NPS	Fall, 1988
(5)	Develop interpretive materials:						
	a. develop interpreters' manual (see 4c)	X	X		1	Task Group	January, 1989
	b. publish brochure	X		\$17,500	1	Task Group	Fall, 1988
	c. develop slide repository	X	X	\$25,000	1	Task Group	Spring, 1989
	d. Smithsonian traveling exhibit	X	X	\$ 8,500	1	Task Group/Regions	Fall, 1988
	e. develop NPS exhibit panel	X	X	\$ 2,200	1	Harpers Ferry Center	Fall, 1988
	f. develop Charles Harper print		X	\$ 6,500	2	Harpers Ferry Center	FY 89

\* Undetermined amount

TASK NUMBER	PROJECT	FY 88	FY 89+	DOLLARS (in thousands)	PRIORITY	RESPONSIBILITY	TARGET DATE
(5)							
	g. develop generic slide program		X	\$17,000	1	Harpers Ferry Center	FY 89
	h. develop generic video-tape		X	\$ 2,200	1	Harpers Ferry Center	FY 89
	i. develop Western Hemisphere slide program		X	\$35,000	2	Harpers Ferry Center	FY 89
	j. develop Western Hemisphere videotape		X	\$ 2,200	2	Harpers Ferry Center	FY 89
	k. Cooperating Associations/ Concessioner materials		X		2	WASO Interpretation/Concessions	FY 89
	l. conduct survey	X			1	Task Group	Spring, 1988
(6)	Park interpretive activities						
	a. conduct programs		X		1	Park Interpreters	FY 89
	b. produce staff articles		X		1	Park Staff	FY 89
	c. present children's programs		X		1	Park Interpreters	FY 89
	d. park seminars		X		2	Park Staff	FY 89
	e. interpretive media messages		X		2	Harpers Ferry Center	FY 89
	f. on site environmental education		X		1	Park Interpreters	FY 89
	g. special emphasis activities		X		1	Park Staff	FY 89
	h. model regional programs		X		1	Regional Ofc. Staff	FY 89
	i. expand VIP activities		X		2	Park Staff	FY 89
(7)	External Educational Activities:						
	a. prepare media presentations	X	X		1	Park Staff	FY 89
	b. state environmental education		X		2	Regional Offices	FY 89

TASK NUMBER	PROJECT	FY 88	FY 89+	DOLLARS (in thousands)	PRIORITY	RESPONSIBILITY	TARGET DATE
(7)	c. standing committee	X	X		2	WASO	FY 89
	d. environmental educa- tion package		X		1	Park Staff	FY 89
	e. interagency coop- eration with NASA	X	X		2	WASO	FY 88-89
(8)	Conduct Biological Di- versity Workshops		X	\$60,000	2	Regional Offices: Parks	FY 89
(9)	Establish Interdisci- plinary Coordination	X	X		1	WASO, Regional Offices, Parks	FY 88-89
(10)	Program evaluation		X		1	WASO, Regional Offices, Parks	FY 89

Estimated Cost of Projects:

FY 88 Priority 1 Projects . . . . . \$ 33,500

FY 88 Priority 2 Projects . . . . . -0-

FY 89 Priority 1 Projects . . . . . \$ 66,400

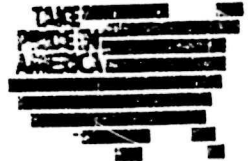
FY 89 Priority 2 Projects . . . . . \$103,700



## United States Department of the Interior

## NATIONAL PARK SERVICE

P.O. BOX 37127  
WASHINGTON, D.C. 20013-7127



IN REPLY REFER TO:  
K14(710)

SEP 13 1988

## Memorandum

To: Directorate, Field Directorate and All Superintendents

From: Director

Subject: Servicewide Biological Diversity Interpretive Initiative

The National Park System contains many of our nation's great and valued historical and cultural sites and artifacts. The System also contains some of our nation's critical and irreplaceable ecosystems and the living biological organisms that comprise them. These natural systems, processes, and species are part of our American heritage.

Essential to the mission of the National Park Service to preserve the biological diversity within the National Park System, it is inherent that we develop a strong interpretive and educational program. To meet this challenge, the Servicewide Biological Diversity Interpretive Initiative will begin in FY 1989 and will continue as an important interpretive program indefinitely.

To assist you in developing your interpretive and educational programs, you will find attached a copy of "Interpreting Biological Diversity in the National Park System." Of the projects identified within the plan, progress is underway on the Interpreter's handbook, the slide repository, and the interpretive brochure. Other projects will be developed in the months to come.

If you have any questions or wish further information on this program, please contact either Mr. Mike Watson, Chief, Division of Interpretation, Washington, DC, at (202) 523-5270, or Mr. Dick Cunningham, Regional Chief of Interpretation, Western Region, San Francisco, California, at (415) 556-3184.

The preservation of biological diversity is central to the mission of the National Park Service. Preservation of biological diversity should also be central to the personal mission of each dedicated employee of this organization. It relates to the basic reasons why many of us joined the National Park Service as a career: a love of wild things and wild places and a continuing fascination with the mystery of how it all works. Perhaps, expressed in simple feelings, this is what biological diversity is all about.

## APPENDIX B

## TASK GROUP FOR BIOLOGICAL DIVERSITY INTERPRETIVE INITIATIVE

Richard Cunningham. Regional Chief of Interpretation.

Western Region. National Park Service (NPS) (Task Group Chairman)

Martha Aikens. Interpretive Specialist. Division of Interpretation.

Washington Office. NPS

Francisco Gomez-Dallmeier. Smithsonian Institution. Washington. DC

William Gregg. Man and the Biosphere Coordinator. Washington Office. NPS

Larry Harris. Department of Zoology, University of Florida

Nancy Marx. Division of Refuges, U.S. Fish and Wildlife Service.

Washington Office

Gary Mullins. School of Natural Resources. The Ohio State University

Gary Nabhan. Assistant Director, Desert Botanical Garden. Phoenix. AZ

Larry Norris. Resources Management Specialist, Denver Service Center. NPS

Margery Oldfield. Department of Zoology, University of Texas

Napier Shelton. Vegetation and Wildlife Division, Washington Office. NPS

Stanwyn Shetler. Smithsonian Institution. Washington. DC

Carol Spears. Interpretive Specialist, Cuyahoga Valley NRA

Larry Tillman. Interpretive Planner, Harpers Ferry Center. NPS

Rich Tobin. Recreation Management Specialist, U.S. Forest Service.

Washington, DC

Mike Whatley. Interpretive Specialist, Cape Cod NS