



**Fact Sheet**

**I&M Base Program**  
**(updated)**

**August 1997**

**97-30**

Many natural resources in the National Park System<sup>1</sup> are subjected to unfavorable influences from a variety of sources, for example, air and water pollution, urban encroachment, and excessive visitation. Left unchecked, the very existence of many natural communities can be threatened. To help prevent the loss or impairment of such communities in more than 250 units with significant natural resources, the Natural Resource Inventory and Monitoring (I&M) Program was established.

The principal functions of the I&M Program are the gathering of information about the resources and the development of techniques for monitoring the ecological communities in the National Park System. Ultimately, the inventory and monitoring of natural resources will be integrated with park planning, operation and maintenance, visitor protection, and interpretation to establish the preservation and protection of natural resources as an integral part of park management and improve the stewardship of natural resources by the National Park Service.

The detection of changes and the quantification of trends in the conditions of natural resources are imperative for the identification of links between changes in resource conditions and the causes of changes

and for the elimination or mitigation of such causes. Inventory and monitoring provide important feedback between natural resource conditions and management and trigger specific management and evaluation of managerial effectiveness.

An I&M Program Manager and two support staff members of the Natural Resource Program Center in Colorado coordinate the I&M Program goals and objectives. A National Advisory Committee--which consists of NPS superintendents, natural resource management specialists, program managers, and USGS Biological Resources Division research scientists--develops strategic policies and makes programmatic, technical, and budget recommendations to the program manager who refers them for approval to the Associate Director for Natural Resource Stewardship and Science. Ad Hoc working groups of technical experts from the field convene as necessary to address specific policies and technical issues. Natural resource personnel in support offices provide coordination between parks and the national program office.

**Program Structure**

The I&M Program includes inventories, monitoring, and data management.

**Natural Resource Inventories**

Twelve natural resource data elements are the core set of the minimum information for park management, planning, and natural resource protection. The I&M Program must complete the basic resource data sets

for each natural resource park unit. For cost effectiveness and quality control, most of the inventories are done by national-level contracts and cost-sharing arrangements with other agencies. Specialized inventories of, for example, invertebrates or fossils are the responsibility of parks.

**Long-Term Ecological Monitoring**

Long-Term Ecological Monitoring (LTEM) will be conducted to test monitoring at different spatial scales and to develop field sampling methods and accuracy assessment protocols for parks in each of 10 major biomes. LTEM is expected to advance the understanding of national park ecosystem dynamics and ecological integration and to improve current techniques. The information and techniques will be transferred to the remaining I&M park units.

**Data Management**

The I&M Program must manage the gathered information and must therefore develop policies, standards, and software to document and describe the collected data; to exchange and distribute data to others in and outside the service; and to archive and store data for ready access. The service must also make its spatial databases accessible on the information superhighway (i.e., on the Internet). Therefore, the I&M Program, the service's GIS Program, and others are jointly developing standards and guidelines to document natural resource data sets (i.e., metadata) and to acquire the hardware, software, and technical expertise for maintaining the data sets and making them available on the Internet.

<sup>1</sup> National parks and other entities of the National Park Service such as national monuments, national rivers, wild and scenic riverways, national scenic trails, and others are called *units* and collectively constitute the *National Park System*.

### Current Budget

The Fiscal 1997 budget of the I&M Program is \$4.89 million of which 9% is used for salaries and program administration, 73% for park inventories, and 18% for LTEM. An additional \$1.15 million and 14 FTE (full-time equivalent [incumbents]) are available in the base accounts of parks to conduct LTEM. In Fiscal 1997, the USGS Biological Resources Division is providing \$1.18 million to map vegetation communities in parks throughout the United States, except Alaska, \$860,000 to support research and development of prototype LTEM, and \$125,000 for the development of inventory protocols.

### Program Status

Since 1992, the I&M Program has completed or funded approximately 450 inventories and verified species lists for 75 parks. Significant progress has been made in bibliography, base cartography, vegetation, and soils inventories and in baseline water quality assessment reports. Databases containing summaries of existing geologic maps and related reports also were produced for all natural resource parks.

Seven LTEM programs in 13 separate units were initiated in the Pacific Coast, Arctic/Sub-arctic, Grassland, Prairies, and Deciduous Forest biomes. Three of them are fully operational in Channel Islands, Great Smoky Mountains, and Shenandoah national parks.

A memorandum of understanding between the I&M Program and the Inventory and Monitoring Institute of the U.S. Forest Service has been drafted to facilitate collaborative inventory and monitoring between the two agencies. When finalized, the memorandum will provide coordination by the two agencies for the acquisition of aerial photography and several other basic resource inventories. The scope of the memorandum may be extended to include the Natural Resources Conservation Service.

Park priorities for each of the Level I inventory components funded by the I&M Program were updated in 1997 to better reflect the needs by parks for the data, to take advantage of cost-sharing opportunities, and to link priorities for inventories that must be completed in sequence. The revised list of priorities was distributed to cluster I&M coordinators on 30 July 1997.

The first annual report of the I&M Program is being published in 1997. The report outlines the major accomplishments in the program during Fiscal Year 1996 and indicates how the information has been used by park managers for making decisions. Part I of the report features descriptions of the principal functions and the structure of the I&M Program and the status of inventory and monitoring in 12 National Park System units. Part II provides summaries of resource inventories, and Part III is organized by resource and describes the reason for monitoring and the last known status of the resources in prototype LTEM programs.

The *Natural Resources Inventory and Monitoring* course is given again in 1997 in association with the Channel Islands National Park Prototype LTEM program. Planning is underway to offer the course again in 1998 in Shenandoah National Park.

### I&M National Advisory Committee

Membership of the National I&M Program Advisory Committee was expanded in 1997, and several long-term members were replaced. The committee is now composed of 2 permanent members and 13 rotational members who serve 3-year appointments. Current members of the Committee include:

#### Permanent Members

Gary Williams, I&M Program Manager  
(Committee Chair)

Abby Miller, Deputy Associate  
Director, Natural Resources  
Stewardship and Science

#### Rotational Members

##### Superintendents

Dale Engquist, Indiana Dunes  
National Lakeshore  
John Howard, Antietam  
National Battlefield

##### Regional or Support Offices

Mary Foley, New England  
Support Office

##### Natural Resources Program Center

Bill Jackson, Water Resources  
Division  
Kathy Tonnessen, Air Quality  
Division

##### Washington Office Planning

Nat Kuykendall, Denver  
Service Center

##### Park-Based Natural Resources

Dave Haskell, Grand Canyon  
National Park  
Sarah Allen, Point Reyes  
National Seashore  
Keith Langdon, Great Smoky  
Mountains National Park

##### Cluster I&M Coordinators

George Dickison, Alaska  
Support Center  
Kathy Jope, Columbia/  
Cascades Support Office

##### USGS-Biological Resources Division

Bill Halvorson, CPSU,  
University of Arizona  
Charles Roman, CPSU,  
University of Rhode Island

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You may also consult the I&M  
Program worldwide webpage at  
[http://www.aqd.nps.gov/nrid/im/  
bintr01.htm](http://www.aqd.nps.gov/nrid/im/bintr01.htm)