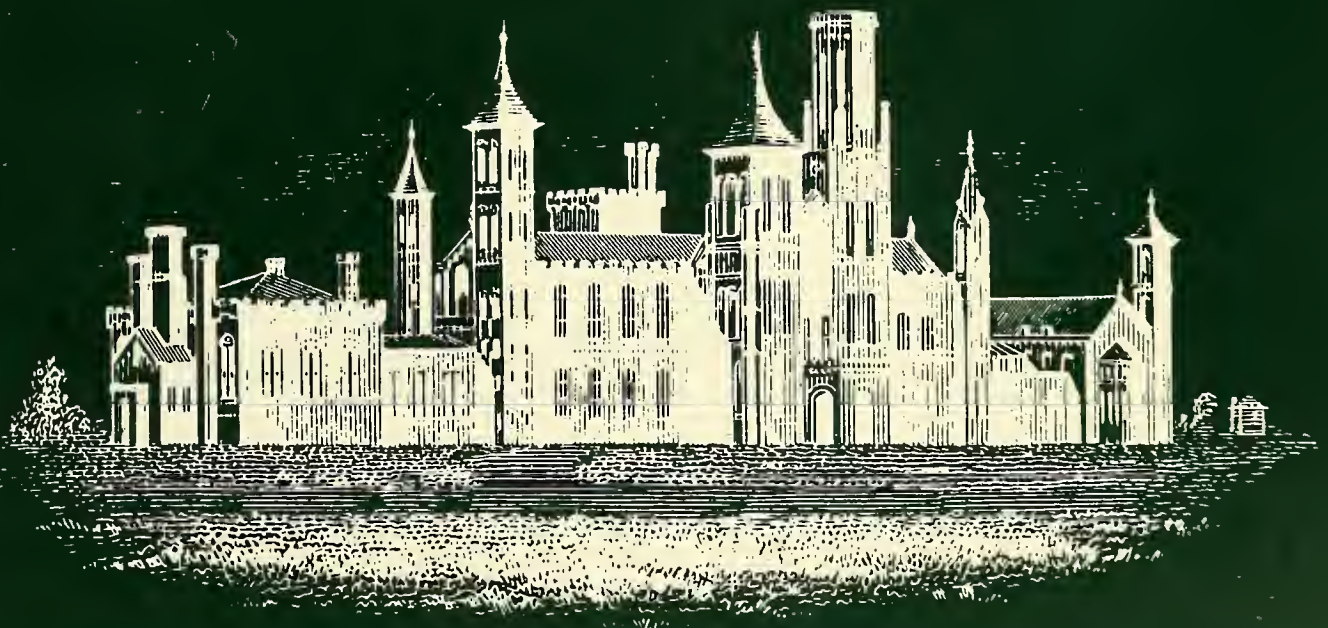


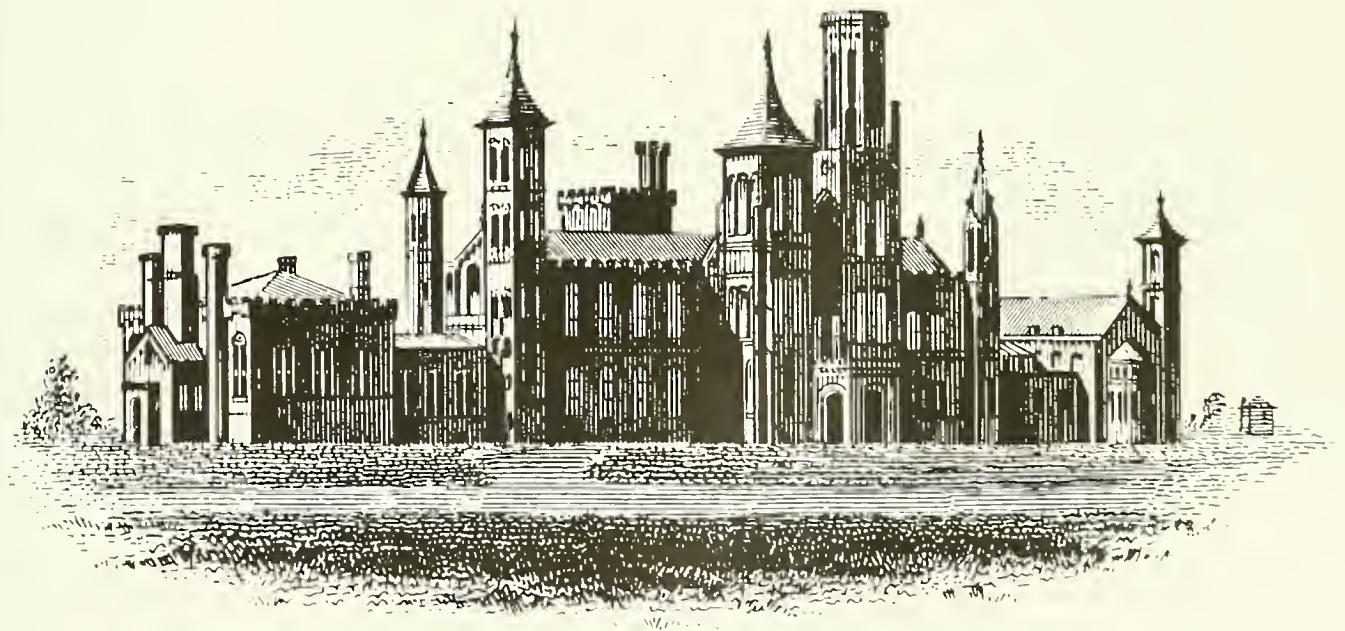
Choosing the Future



Smithsonian Institution

Five-Year Prospectus ♦ Fiscal Years 1992 - 1996

Choosing the Future



Smithsonian Institution
Five-Year Prospectus ♦ Fiscal Years 1992 - 1996



Smithsonian Institution

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January 1991



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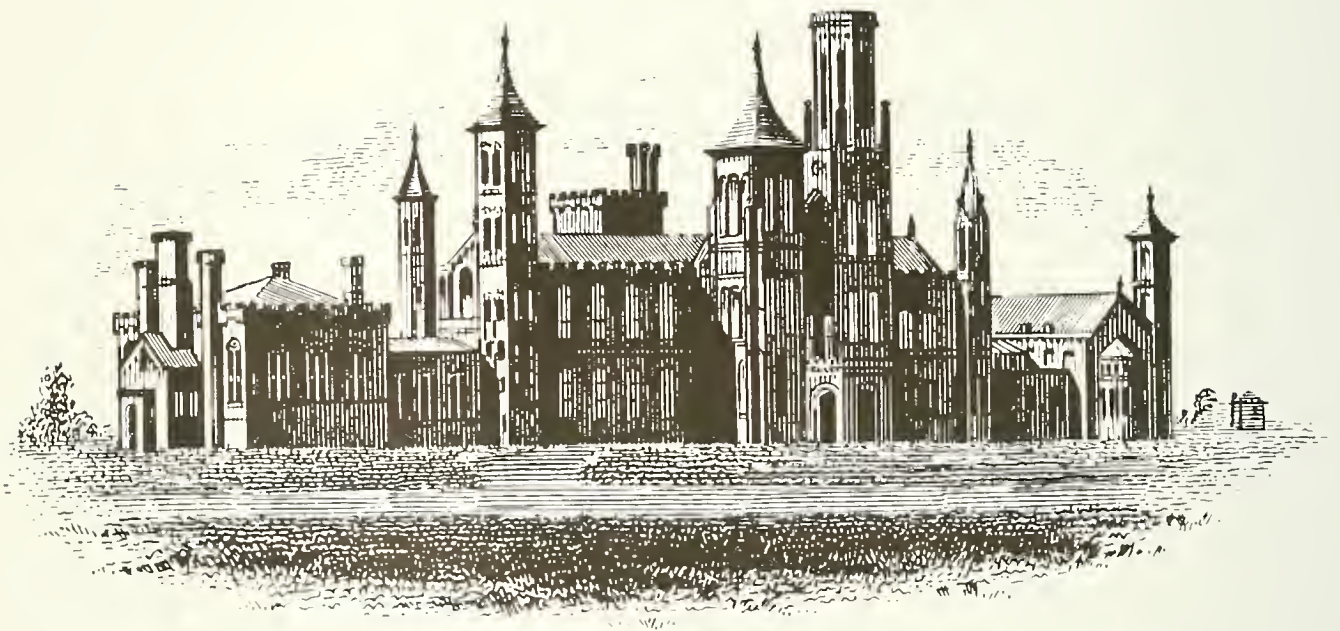
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CHOOSING THE FUTURE

Message from the Secretary

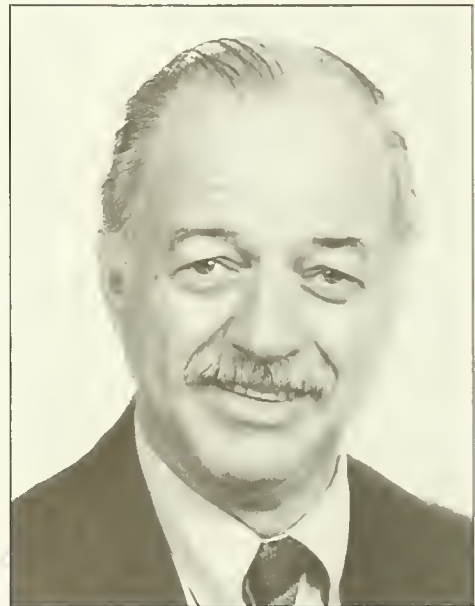
As this is written, war has just succeeded long diplomatic efforts to end Iraq's occupation of Kuwait. This is the first but surely not the last regional eruption to occur in a world no longer dominated by Great Power rivalries. It provides a foretaste of further impacts on the U.S. economy and federal budget, of a character and magnitude for which prior planning can never fully prepare us. Having personally surveyed much of the Iraqi countryside during many years of fieldwork there and having some acquaintance with its present institutions as well as its history, I can only flatly confess that this crisis is one that I, too, find plausible only in hindsight.

But from the viewpoint of the Smithsonian, what is still more important is that challenges like this one often come not singly and conveniently but unpredictably combined. What may well become a quasi-permanent U.S. Middle Eastern commitment only intensifies problems of a federal budgetary deficit that were already critical even before the possibility of any such commitment was more than a remote contingency plan in some Pentagon filecase.

The threat of a fiscal year 1991 budget sequestration was almost as demoralizing and disruptive as sequestration would have been. The abruptness and rigidity of across-the-board cuts would have frustrated the orderly development of programs directed toward new needs and priorities.

A newly formed Planning Advisory Group has responded to this and other planning challenges. Drawn from a cross section of the Institution's best minds and talent, this group has conducted a searching internal review of our unfilled responsibilities as a *national* institution and of areas in which our work falls short of what we believe it could and should be. Our role in education, anticipated in our chartered responsibility for "the increase and diffusion of knowledge" but remaining reflexive and fragmentary in most aspects of our performance, is only one example of the latter.

Of course, the challenge of meeting enlarged or newly recognized responsibilities when resources are uncertain and threatened with serious, possibly prolonged shrinkage is formidable. It would be easier, but fundamentally erroneous, if we were to conclude that our only obligation was to sustain with minimal loss those activities that we happen to be conducting already. Some responsibilities do indeed remain fixed and primary—to protect and conserve our collections and facilities, to



Robert McC. Adams
Secretary

sustain critical areas of research, and to incorporate new research findings and interpretive techniques in exhibits that facilitate visitor education. But the Smithsonian's program has always been an evolving and never a static one. Beyond these core commitments (which must themselves be met in different ways with advancing knowledge), the proper place for the Institution is at the very forefront of service to the American people in the interests of "the increase and diffusion of knowledge."

With our broad array of museums devoted to natural history, history, science and technology, and the arts, we can perhaps provide some of the new thinking, new technologies, and new leadership that the President and the governors of all the states have determined that primary and secondary education need. Similarly, our research scientists studying biodiversity, especially in the tropics, are a group of unparalleled strength working on aspects of the challenge of global change whose urgency and importance are steadily looming larger. Can we responsibly ignore the changing scope and shape of this challenge and merely continue with activities designed to meet earlier appraisals that are now obsolete?

Or, finally, there is the Smithsonian's unparalleled capability to interpret and represent the nation's cultural, racial, and ethnic pluralism. Long central to our annual Folklife Festival, such pluralism richly proliferates new forms, including most prominently (but not exclusively) the Hispanic orientation of our planned commemoration of the Quincentenary of Columbus, the well-organized study currently under way of how to expand and improve African-American programming on the Mall, and the accelerating progress of our planning following the enactment of legislation mandating a new National Museum of the American Indian. All of these developments, it should be pointed out, involve the Smithsonian in unprecedented networking relationships with organizations and institutions across this country, increasing the scope and complexity, but even more significantly the potential, of our outreach programs. Could we reasonably turn our backs on any of these developments just because they represent growing demands rather than long-established, now relatively static ones? Not if we are to remain faithful to the best traditions of the Smithsonian.

A distinguishing and vital feature of Smithsonian operations is the mixed and complementary basis of its financing. As a trust entity under, rather than formal agency of, the federal government, it relies substantially on its own business activities and private philanthropy to supplement Congressional appropriations. That sometimes can present additional problems. Thus we happen to be currently affected by declining Washington

tourism and a slight downturn in general sales and magazine advertising income, unfortunately coinciding with the federal budgetary deficit and the Middle Eastern crisis.

But in the long run this balance of private with federal support can only be a crucial source of greater certainty for budgetary (and therefore programmatic) planning. More, it offers possibilities for sustained future growth, well beyond that possible on tax revenues alone. Mandated responses to new needs or opportunities, do not necessarily come with full appropriations to match. The new Indian Museum, for example, anticipates matching private donations that will require the dedicated efforts of a substantial professional and volunteer staff. Many of our most original and path-breaking new initiatives only could have been launched with the greater freedom that private sources of support more readily accept as necessary.

As this *Prospectus* reflects, in short, these are somewhat difficult and uncertain times for the Smithsonian. There could be few clearer anticipations than our recent experience of the harsher, and certainly more unpredictable, climate within which the Institution needs to chart a consistent and productive course that adequately discharges old responsibilities while also recognizing new ones. We will need the understanding and support of the Administration and the Congress, of the private sector, and of the whole American people if the exciting plans outlined here are to be realized.

A handwritten signature in black ink, appearing to read "Robert McC. Adams". The signature is fluid and cursive, with a large initial "R" and "A".

Robert McC. Adams, Secretary

Introduction

In 1977, the Board of Regents of the Smithsonian and the Secretary established a five-year planning process. Each successive five-year plan articulates the ways in which the Institution seeks to fulfill its mandate “for the increase and diffusion of knowledge.” This process continues to evolve. It now includes a Planning Advisory Group consisting of managers and staff at all levels, and incorporates views from various important interest groups within the Institution. Through this continually evolving planning process, the Institution can more effectively allocate its human, financial, and physical resources to accomplish its goals.

Containing the long-term plan managers and staff have developed, the *Five-Year Prospectus* broadly describes the programs the Institution intends to undertake and the resources the Institution expects. Senior management uses the Institution’s Statement of Purpose, the Goals of the Institution, and the Areas of Emphasis, all reproduced here as introductory material, to develop the Institution’s federal budget request, the budget for nonappropriated funds, and the *Prospectus*. In addition to providing formal guidance to managers and staff who carry out the Institution’s mission, this *Prospectus* articulates the Institution’s operating program plans for fiscal years 1992 through 1996, and describes long-term plans for construction and facility repair through fiscal year 2000.

In the *Prospectus*, the Institution emphasizes initiatives that address basic programs as well as facilities infrastructure and initiatives, such as global environmental change, cultural pluralism, and education programs that respond to national or public imperatives through research and public activities. The development of the National Museum of the American Indian and the forthcoming commemorations of the quincentenary of Christopher Columbus’s voyage each merit a separate chapter because these efforts to promote cultural diversity are especially important to the Institution.

The *Prospectus* reflects senior managers’ organizational planning that focuses upon select program goals, requires the Institution to survey its current assets, and prompts the Institution

“It was not . . . the intention of Mr. Smithson to commit a trust for the increase and diffusion of knowledge among men in the United States because they wanted learning. The object . . . was to promote not learning but knowledge. The persons for whose ultimate benefit he bequeathed his whole estate were not the children of the American people but the whole race of mankind. In selecting the United States of America as the agents for carrying into practical execution this blessing to the whole human family, he paid them a silent voluntary tribute of respect.”

— John Quincy Adams, 1839
Former Member of the House of
Representatives, and Sixth President of
the United States

In the *Smithsonian Institution*, 1980.

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to develop resources in pursuit of its objectives. The *Prospectus* contains a flexible plan that senior managers will subject to continual reevaluation and modification depending upon the circumstances the Institution encounters. In adjusting operations to evolving circumstances, senior managers may eliminate activities that are no longer central to the Institution's mission, they may redirect resources to programs of higher priority, or they may develop new resources through the appropriations process, fund-raising, auxiliary activities, and market investments. The Institution will incorporate the results of these adjustments and reviews into the *Prospectus*.

In short, the *Prospectus* articulates the Institution's broad purpose, its immediate and general course of long-term direction, and its resource requirements. An appendix, available upon request, provides additional information including brief mission and program statements, projections of resource requirements by major organization, and more detail about planned facility repairs and restoration.

**"The All-Seeing 'Eye'
Doghouse" from "The
Doghouse" exhibition at
the Cooper-Hewitt
Museum, the National
Museum of Design, June
8 to October 14, 1990.
(Photo by Jennifer
Weisbord)**



Smithsonian Institution Statement of Purpose

The Smithsonian Institution was created by Act of Congress in 1846 to carry out the terms of the will of James Smithson of England, who bequeathed his entire estate in 1826 to the United States of America “to found at Washington, under the name of Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men.”

Joseph Henry, the first Secretary, in his efforts to give direction to activities of the fledgling Institution, commented on Smithson’s will in his annual report for 1864:

He evidently did not intend by these precise terms to found a library or a mere museum for the diffusion of popular information to a limited community, but a cosmopolitan establishment, to Increase the Sum of human knowledge and to diffuse this to every part of the civilized world. No other interpretation of the will is either in accordance with the terms employed or with the character and habits of the founder. The Increase of human knowledge, by which we must understand additions to its sum, would be of little value without its diffusion, and to limit the latter to one city, or even to one country, would be an invidious restriction of the term Men.

Over the course of its 144-year history, and under the direction of succeeding Secretaries, the Institution has evolved into an eminent research center and the world’s largest museum complex. In service to all mankind, its activities span the globe and are devoted to research, museology, and public education in the arts, sciences, and history.

The Smithsonian is a unique establishment which is both publicly supported and privately endowed, and whose governance is vested in an independent Board of Regents composed of federal officials, members of Congress, and private citizens. Donations from both the public and private sectors increase its collections, and continuing additions to its trust funds expand and nourish the Institution’s usefulness. Appropriations by Congress provide federal support for the Smithsonian’s far-reaching services to the public. Annually, dedicated volunteers provide hundreds of thousands of service hours to the Institution.

The Smithsonian conducts a wide range of programs in carrying out its broad goal of increasing and diffusing knowledge.

CHOOSING THE FUTURE

One of its basic commitments is the conduct of original research in many fields. Another is the selective acquisition, management, care, exhibition, and security of collections that are also among the primary objects of its research. The Institution's holdings are a trust responsibility and serve as important assets for future generations. Related responsibilities include the maintenance of its buildings, facilities, and natural areas in Washington and other locations around the world.

In seeking to study and understand subjects of world importance, the Smithsonian participates in joint ventures with other organizations in the United States and on every continent. Staff assembles fundamental data for use by planners and research workers in other organizations, both government and private, national and international in scope. Scientific, historical and art studies, which enhance human knowledge of the natural and cultural worlds and contribute to societal growth, are major endeavors. The Institution shares the results of its varied activities to racially, ethnically, culturally, and economically diverse audiences through exhibitions, education programs, publications, and other public media programs.

Most important to fulfilling the basic purpose of its founding benefactor, the Institution places the highest priority on achieving quality in the conduct of its activities while making the most effective use of available resources.

In the Great Hall of the Smithsonian Institution Building, frequently called the Castle, eight interactive video terminals allow visitors to access information about the Smithsonian in seven languages. (Photo by Eric Long)



Goals of the Institution

The Institution's purpose, staff, and resources are dedicated to increased understanding of the physical, biological, and cultural worlds in which people live and hope to thrive. The Smithsonian is further dedicated to creating opportunities for people to discover, master, and understand new knowledge through seeking, collecting, and preserving evidence of the past and present; through observation, research and analysis; and through educational activities. Thus the Institution seeks to achieve its basic mission for the "increase and diffusion of knowledge" among its many publics in the following ways:

- By pursuing original research, exhibitions, collections management, public programs, publications, and other activities devoted to explaining the present state of understanding of the diverse fields of the arts, humanities, and sciences and related issues of contemporary importance.
- By giving special emphasis to exhibitions and other educational programs that will increase participation by the broadest possible audience, including culturally and socio-economically diverse communities, the disabled, and senior citizens.
- By devoting careful attention to the acquisition, care and preservation of collections and institutional facilities that house them.
- By dedicating research and educational efforts to the long-term need for conservation and improvement of our natural and human resources, and by drawing attention to the special responsibility each generation has to its successors.
- By striving for professional leadership and staff excellence, with particular emphasis on expertise from diverse

"There are many through the years who have referred to the Smithsonian as our nation's attic. This, I think, is a clear and patent misunderstanding of what the result of James Smithson's magnificent bequest really is: the Smithsonian is the nation's heartbeat. The Smithsonian Institution is peculiarly our national center for disinterested research in all forms of knowledge and learning. It not only comprises a group of museums but also comprises a circle of truly distinguished scholars from whose minds and activities spread a multitude of great works."

— C.C. Cunningham
Director of the Art Institute of Chicago

Salute to the Smithsonian on its 125th Anniversary, September 26, 1971

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- cultural backgrounds, access to solid technical support systems, and vigorous fellowship programs.
- By promoting collegial exchange with and services to other research, museum and educational institutions worldwide.
 - By maintaining management, administrative, and other services to meet program needs, by assuring strong internal financial and other management systems, by periodically assessing the effectiveness and efficiency of programs and support activities, and by orderly planning for new and renovated facilities.

The Experimental Gallery, a model of which appears here, will focus on audience and access, exhibition context, development and style. (Photo by Laurie Minor)



Areas of Emphasis

Stewardship of the Public Trust

Reinvest in the “infrastructure” of existing programs to ensure that they fulfill the Institution’s trust responsibilities and will advance its contemporary goals, especially in the following ways:

- Replacing outdated exhibitions with new ones, temporary as well as permanent, incorporating recent intellectual developments and interpretive techniques that facilitate visitor education.
- Refurbishing existing facilities and acquire new facilities, both to ensure a safe and healthy environment and to accommodate existing and expanding research, collections, and other program and public needs.
- Improving access to archival, library, and museum collections and forestall their deterioration and loss to ensure their continued availability to present and future generations of scholars and the public.
- Strengthening technical support to and acquire advanced research instrumentation for scholars to facilitate their research efforts.
- Expanding and coordinating the use of information resource management and related services to meet Institutional needs.
- Pursuing initiatives that permit growth in endowments and operating funds.
- Ensuring that administrative and other service functions have the capacity to keep pace with recent and projected growth of Institutional programs.

“For all the generalized gloom in Washington over the programmatic impacts of the [federal] deficit, for all the confusing signals over long-term trends, both the core of the Smithsonian’s work and our important and exciting new initiatives continue to meet with solid encouragement. The difficult course we must follow . . . involves not brushing aside as unthinkable the possibility of future retrenchment in some of our programs, while also not concluding that this is a time to retreat into a diminished but more defensible citadel. As open as ever before us is an opportunity to re-vitalize the core of our activities while still seeking to develop new realms of popular as well as scholarly significance.”

— Robert McCormick Adams, Secretary
State of the Smithsonian Report,
December 19, 1989.

Understanding the Global Environment and Our Place in the Universe —

Advance public understanding of biological, physical, and human societal processes influencing and resulting from global environmental change and our place in the universe, especially in the following ways:

- Expanding biodiversity and other conservation related research on: the human as well as natural dimensions of environmental change; the dynamics of tropical, temperate, and boreal ecosystems, including the greenhouse effect; and the ecological and evolutionary history of all life forms.
- Increasing our understanding of the origins and nature of the universe, its stars, and planets, including the Earth.

Exemplifying the Nation's Pluralism —

Interpret the many facets of the nation's social, ethnic, and cultural composition, especially in the following ways:

- Establishing a National Museum of the American Indian by:
 - Developing, together with the Indian community, a full range of museum programs and public services.
 - Planning for and constructing a new museum on the Mall; renovating space in the Old United States Custom House in New York City; and planning and

Earth Day 1990 presented a time for environmental initiatives. The Smithsonian's new Office of Environmental Awareness will work to disseminate environmental conservation information. (Photo by Eric Long)



constructing a facility for research, storage, and curation of collections at Suitland, Maryland.

- Conducting a national campaign to raise one-third of the cost in private matching funds for the construction of the Mall facility.

This figure of woman and child is from the exhibition “Icons: Ideals and Power in the Art of Africa” at the National Museum of African Art.



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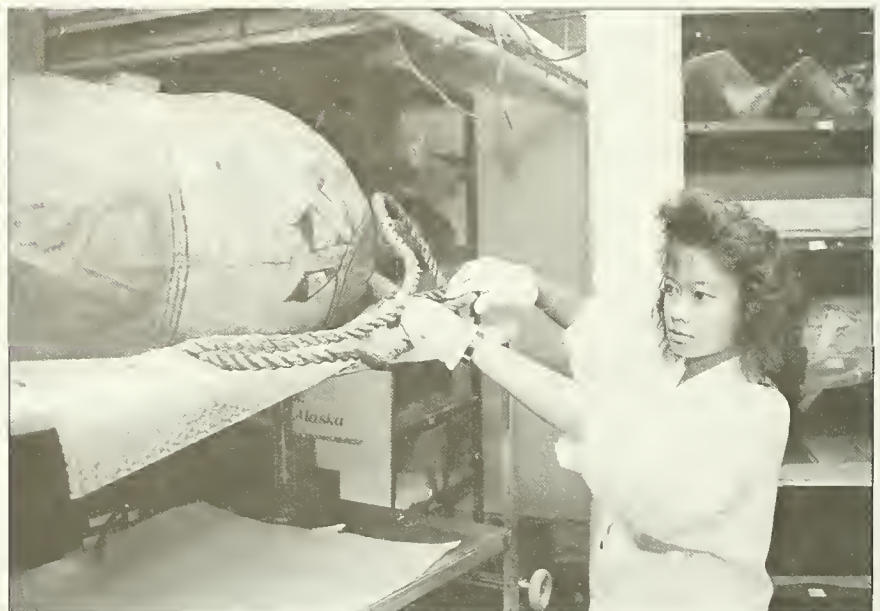
- Integrating cultural pluralism into all aspects of the Institution's governance, planning, staffing, and programming.
- Commemorating the five hundredth anniversary of the voyage of Christopher Columbus and the ensuing growth of new civilizations throughout the Western Hemisphere from multidisciplinary, multicultural perspectives.
- Expanding and improving African-American programming on the Mall.
- Collaborating with disciplinary and professional colleagues from diverse communities nationally and internationally.

Bringing Synergism to Contemporary Public Education

Celebrate and build upon the ability of the Smithsonian, as a unique educational institution, as a major research center, and as a national trust for collections in the arts, humanities, and sciences, to address national needs; to serve broad and diverse public audiences; and to provide life-long and informal learning experiences beyond the classroom environment, especially in the following ways:

- Articulating a contemporary educational philosophy for the Smithsonian.
- Strengthening offerings to the broadest possible visiting public through exhibitions and attendant interpretative

A student in the summer high school internship program—conducted by the Office of Elementary and Secondary Education—helps prepare artifacts for display. (Photo by Jonathon Barth)



programs that coincide with the Smithsonian's comparative advantages as a national public forum.

- Adopting model educational strategies and techniques for informal, formal, and alternative education activities.
- Improving dissemination of new knowledge gleaned from Smithsonian research to the general public and stimulate greater appreciation and understanding of the arts, humanities, and science via means that reach beyond the Mall, including electronic media, teaching aids, courses, and publications.
- Communicating the availability of the Smithsonian's educational resources through targeted marketing activities directed toward the Institution's various and diverse public audiences.
- Promoting linkages between the Institution's educational resources and the nation's colleges, universities, and school systems.

Stewardship of the Public Trust

The Smithsonian Institution is proud of its history. Today its precious collections, numerous buildings, beautiful gardens, exhibit halls, theaters and lecture halls, and public cafeterias consistently impress visitors. The Institution's managers constantly maintain, renovate, and improve these facilities to reverse the ravages of time and heavy use. However, the

At the ceremony to lay the cornerstone of the Smithsonian Institution Building in May, 1847, the chaplain invoked:

"May the building here to be erected as a depository of the curious works of art and nature, and emblems of national distinction, be more than sufficient for this worthy and honorable purpose. May it become a monument of usefulness to us as a nation, and a matter of admiration to the nations of the world."

— Bessie Zaban Jones, *Lighthouse of the Skies* (Smithsonian Institution, 1965).

Institution recognizes its responsibility to reinvest not only in the infrastructure of bricks and mortar but also in the infrastructure of services and administrative activities that support programs conducted within these buildings, halls, and theaters for the public benefit.

The Institution's management sees a clear imperative over the next several years to address resource deficiencies for program and administrative services through combined federal and private support. The Institution's Areas of Emphasis specifically cite these needs to eliminate the structural and programmatic deficiencies that would prevent the Institution from meeting its

public responsibilities as envisioned by the founding benefactor and those early supporters who advanced the interests of the James Smithson trust.

Exhibiting, Managing, and Safeguarding the Collections

The Smithsonian is not as much the nation's attic as it is the nation's treasure chest. Collections management, including the exhibition and security of works of art, artifacts, and specimens, is

South view of the Castle with the Enid A. Haupt Garden, the Sackler Gallery, and the National Museum of African Art. (Photo by Jeff Tinsley)



a primary responsibility the Institution bears under trust to the American public now and for future generations. Sustained investment of Smithsonian resources devoted to maintaining the collections is essential to meet this responsibility. The Institution has dedicated and continues to seek resources for improving the registration, storage, preservation, exhibition, and security of collections.

The Institution plans to reinterpret permanent exhibitions of the nation's most unique and vital collections so that they appeal to, enfranchise, and inspire the broadest possible audiences. At best, permanent exhibitions become stale over time; at worst, they become obsolete and inaccurate. Smithsonian museums must integrate changing perceptions of our world and advances in exhibition design and interpretive strategies, such as laser disc and computers, as exhibit installations are planned. Regrettably, the Institution has had to allow some exhibitions to outlive their timeliness because funding for upgrading or replacement was not available.

The Institution's plan for replacement of permanent exhibitions includes federal support and gifts from public-spirited individuals and corporations. For example:

- The National Museum of Natural History/Museum of Man will redesign the Geology, Gems, and Mineral Hall by 1995. The innovative new arrangement will integrate specimens and scientific processes into a single, dynamic, and highly educational experience.

"The presence here of deeply rooted biological concerns is surely no surprise. There is an enduring national need—prominently recognized during the early era of exploration but no less urgent today—for great, systematically studied collections of biological resources drawn from all over the world. The task of assembling, analyzing, and publishing these collections is enormous, and open-ended in the sense that it will demand continuing reinterpretation and refinement. It cannot easily be dispersed among many institutions or privatized. Moreover, much of the direct use of the collection is of a federalized character. Many scientists from such federal agencies as the Department of Agriculture and the National Institutes of Health regularly work side by side with our own curators, investigating questions of practical importance for which the collections are an indispensable tool."

In the *Smithsonian Year*, 1986

"Their [Collections] custody, study, exhibition, and publication thus are always a primary responsibility. That applies as well to closely related support activities that may be virtually invisible to most of the public but that are essential for the collections to be made fully accessible and serviceable: comprehensive, machine-readable cataloging; object and specimen conservation; archiving of relevant documents . . . all those involved with collections are aware that collections continue to grow, that standards can only move forward, and that new demands on them endlessly multiply. It takes a grueling struggle merely not to fall further behind."

State of the Smithsonian Report,
December 19, 1989

— Robert McCormick Adams, Secretary

CHOOSING THE FUTURE

- The National Museum of American History will install a major permanent exhibition, "Science in American Life," exploring the meaning and history of science. The exhibition will include a learning center where visitors will personally discover scientific concepts and issues through experiments and problem-solving exercises.
- The Smithsonian's National Museum of American History and the U.S. Postal Service will provide and operate a new home for the nation's stamp collection. A recent agreement between the Institution and the Postal Service establishes a portion of the General Post Office Building for the display of the valuable collection and interpretation of postal history.
- The Freer Gallery of Art is renovating James McNeill Whistler's Peacock Room in time for the reopening of the Gallery in 1992. The conservation effort will restore the room to its original appearance.

Perhaps most importantly, the Institution provides for the security of its ever-expanding collections of artifacts and specimens which are held in trust. In addition to the intrinsic value of objects such as gems and coins, most of the objects are irreplaceable examples of human experience and achievement as well as indices of global development.

Although the Congress provides the operating support for managing, exhibiting, and safeguarding Smithsonian collections, the continuing government-wide struggle to reduce federal spending and achieve a balanced federal budget has greatly curtailed the amount of funds available to public sector organizations. Over time, this effort has eroded federal resources that support these programs, and private donations have assumed a critical role in the increasing demands to preserve the collections and replace outdated exhibits. The Institution will seek increased federal and private support so that the Institution may continue to serve the audiences of today and collect and preserve our heritage for tomorrow.

Conserving Library and Archival Collections

The Smithsonian's growing collections of archival and library materials, including books, documents, films, photographs, and recordings, are valuable national resources. These materials underpin the Institution's mission to advance knowledge by providing the intellectual, social, and historical context for understanding the national collections. Many of these materials can be replaced; many unique ones cannot. The Institution plans



Conservator Wendy Samet removes a paint sample from one of the shutters in the Peacock Room of the Freer Gallery of Art. (Photo by John Tsantes)

to continue to acquire, care for, and preserve library and archival collections for the sake of future generations of scholars.

Recent surveys revealed that deterioration of library collections exceeds the Institution's capacity to preserve them properly. Due to budgetary deficiencies, the relative neglect of and inadequate Institutional investment in conservation and rehusing have resulted in an increasingly urgent need for expanded resources dedicated to a comprehensive preservation effort. While older parts of the collections have deteriorated badly over the last several decades, the Institution must make accessible the information that they contain by replacing these materials with reprints, photocopies, or microfilm and must retire unique originals to security storage.

Initiatives of the Smithsonian Institution Libraries and Archives exemplify ongoing preservation activities. The Smithsonian Institution Libraries has for many years owned a sizable collection (over two thousand volumes) of publications and archival materials emanating from international expositions, or world's fairs as they are now popularly known. These early publications, often printed on the poorest kind of paper, have deteriorated badly. The Smithsonian Libraries is working to convert these materials to microfilm in compliance with current archival standards. The Smithsonian Institution Archives has targeted original and historically valuable architectural drawings of Smithsonian buildings for conservation. The Institution uses these drawings frequently for current building repair work.

A cooperative program with a publisher assisted in the conservation work on the world's fairs collection in the Libraries. Efforts to raise support from private and government funding sources for these basic activities will continue in the future.

Caring for Smithsonian Facilities

The Smithsonian maintains over five million square feet of space in more than two hundred buildings. Buildings range in age from new to over 135 years old, and many appear on the Register of Historic Landmarks. Many are, in fact, the most precious artifacts the Smithsonian holds in trust for the nation. The Smithsonian must operate and maintain these buildings to ensure the continued functioning of its many diverse programs and also to preserve them for use by future generations.

The Institution continues to emphasize refurbishing present facilities and acquiring new facilities to accommodate existing and expanding research, public programs, and support activities. By increasing staff and equipment for facilities maintenance, the Institution seeks to slow the rate of deterioration of its buildings and thus slow the rate of new repairs. Additional staff for facilities maintenance will also ensure the timely completion of repair and restoration projects and enhance the appearance of all museums, galleries, and grounds.

Museums must continue to collect works of art, artifacts, and specimens to remain vital recorders of human and natural history. With the growth of collections, related research, and public programs, however, space in museums has gradually diminished. The Institution increasingly has grown to rely on leased space in buildings convenient to the Mall to quarter administrative and program support functions. The Institution anticipates additional need for leased space. Of immediate concern is the need for a

larger service center that would relocate related administrative and program support activities to one site.

Enhancing Professional Support

Among the Institution's major concerns is to remedy certain shortcomings in its staff and programs through recruiting new professional staff. The Institution faces a parallel need to improve the research and clerical assistance offered to its existing professional staff. For too long, many of the Institution's scholars and other management, diverted from their primary pursuit—the advancement of scholarship and public programming—performed functions best suited to technicians and clerical staff. Quality research and public programs impose simultaneous demands for support staff. Additional clerical support for scientists, curators, and other museum specialists would improve the productivity of many programs. The Institution must also adequately staff and support newly constructed (or recently renovated) facilities.

For example, the Smithsonian Institution Archives is the official repository of Institutional records and related historical documentation in all forms and media. The addition of technical support staff to process and manage the increasing volume of Institutional records will ensure systematic, comprehensive historical accountability of its national public trust. At the Smithsonian Tropical Research Institute (STRI), the opening of a new laboratory on Barro Colorado Island, with its research programs on global change, requires new technical and administrative assistance. For the past two decades, the Tropical Research Institute's scholarly community has had virtually no technical support staff. The Institution must correct this deficiency.

Professional support needs also include improving research facilities and equipment. The Smithsonian is not exempt from the difficulties faced by other research institutions in overhauling this aspect of an obsolete research infrastructure. It is not sufficient to provide scholars with new or renovated space without also supplying them with the attendant tools of their trade: research equipment. Up-to-date research equipment is a basic necessity in ensuring that scholars remain competitive with their peers worldwide. The Institution's research centers and research support organizations prepared equipment acquisition and replacement plans for the next five years. In the process the Institution came to realize that, in an era where technological advancement rapidly alters standards of sophisticated research equipment, much of the Smithsonian's equipment is obsolete. The Institution has begun to

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rebuild systematically the critical infrastructure of laboratory and scientific equipment in selected areas.

As examples of equipment needs, the Institution requires remedies to the following shortfalls:

- Barro Colorado Island Laboratory where existing equipment is over twenty years old;
- National Zoological Park, as a leading international center for animal exhibition, biological and veterinary research, conservation, and public education, must renew and increase its infrastructure equipment base;
- Conservation Analytical Laboratory must replace equipment purchased or obtained over a decade ago; and
- Museum Support Center where new equipment will complete the furnishing of a laboratory in support of molecular biology research.

Strengthening Administrative Services

The Smithsonian has experienced extraordinary growth over the last twenty years. To achieve efficiency and effectiveness in day-to-day operations, the Institution recognizes a compelling need to bring its administrative services in balance with the needs of programmatic activities. The teaming of scholars with proficient administrators is essential for the Institution to meet the many challenges facing the Institution over the next few years.

**Barro Colorado Island
Laboratory (Photo by Carl
C. Hansen)**



An important component of administrative services is information management. The computer is an indispensable tool for administrators who manage institutional resources and property, scholars who analyze and disseminate research results, and researchers who depend on the availability of published results from colleagues working in related fields. The Smithsonian is developing a comprehensive plan for information resource management requirements across the Institution. In the coming years, the Institution will focus information resource management efforts on systems development and centralized computer services. Current financial systems capabilities do not begin to meet the burgeoning demands of tracking current financial activity, combining federal appropriations, and trust funds. Since automated financial services are integral to every phase of Institutional life, the Smithsonian has developed a payroll cost projection system as a first step in forming a new, comprehensive financial system. Over the next several years, administrators will convert the Institution's accounting general ledger and automate the accounts payable and procurement systems.

The work of scholars is supported by the Smithsonian Institution Bibliographic Information System (SIBIS). This automated data base provides researchers with online access to library collections and enables library staff to acquire, catalog, and control library collections, manage library acquisitions funds, and provide management information. However, since SIBIS is now in its sixth year of operation, the Institution must plan to upgrade or replace this system. The quality of the information system will directly affect the ability of the Smithsonian Institution Libraries to deliver services, build and maintain the collections, and provide appropriate support for the research, exhibition, education, and publication programs throughout the Smithsonian.

The Institution has identified a total need of \$56 million annually to ensure an adequate resource base to reinvest in the infrastructure of programs. Failure to obtain increased federal and private donor support will seriously impair the Institution's ability to meet the crucial objectives and goals of cultural diversity and global change.

Improving the Health and Safety Measures for Staff and Visitors

The Institution is improving safety and health programs for its personnel and visitors. In recent years Congress has appropriated resources to establish a basis for an environmental management and safety program. Staff are now available to assess environmental and safety hazards in the physical plant, identify necessary changes in the building or work practices, recognize fire

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or safety risks in the work place and public areas of the buildings, and, thereby, ensure a safe and healthy environment.

An important component of health education, medical screening, and the prevention of illness and injury for employees rests in the context of an occupational health program at the worksite. The Smithsonian has long-standing employee programs in occupational health, wellness, and substance abuse. These programs will expand to allow more physical examinations, counseling services, and medical activities essential to such programs. These programs are a proven benefit to employer and employee alike by reducing health insurance premiums, promoting worker productivity and increasing employee job satisfaction.

State of Smithsonian Collections

Despite the Smithsonian's best efforts, current and projected budgets inadequately fund collections programs and do not allow the Institution to comply with its recently revised collections management criteria. Highly visible, momentarily fashionable, short duration programs more easily attract financial endorsement than long-term, routine maintenance programs. The Institution's curators face the challenges of reconciling competing needs: to be selective in acquiring the diversity and abundance of the current collections while balancing accessibility and conservation.

A sampling of the new acquisitions reflects the extraordinary diversity of the Smithsonian Institution's collections, some 137 million objects of art and culture, and specimens of life and physical sciences. These recent acquisitions include: a 396.3 carat kunzite and South Sea pearl necklace, a daguerreotype of Henry Clay, a pair of red wolves, a Punu *okuyi* mask, a SS-20 intermediate range ballistic missile, and theatrical costumes from "Chorus Line." The challenges and dilemmas faced by collections management staff are as diverse and abundant as the collections themselves.

The Smithsonian has never played the role of submissive collector acting solely as the caretaker of a cabinet of curiosities. Instead the Smithsonian actively assesses the degree to which the collections enrich understanding of the global changes endangering all species and are accessible to the public as an educational resource. This active assessment is even more rigorous now that curators apply the general acquisition criteria of the Institution's collection management policy. Only a tiny fraction of the material offered to the national collections is judged by the curators and scientists to merit inclusion.

In balancing accessibility with conservation throughout the Institution's fifteen museums and galleries and the National Zoo, the Institution has made its collections management policies more stringent. This policy document guiding

collections management—development, care, and use—reemphasizes internal controls, collecting plans, managing collections information, and representing cultural and biological diversity. This policy statement calls upon Smithsonian museums and other Institutional collecting organizations to formalize their collecting plans, because such codification is vital to an informed and responsible program of collections resource management.

Nowhere in the Institution is the dilemma of accessibility versus conservation more apparent than in the Smithsonian's chronic shortage of collections storage space. For many years, the National Air and Space Museum has maintained the Paul E. Garber Facility in Suitland, Maryland, a combination storage and study center regularly open to the public. Recently, sections of the Garber aviation facility were closed to the public because more space is needed to store aircraft. The Institution also lacks centrally managed art storage space. Museums barely satisfy art storage needs by cobbling together spaces in existing buildings. A facility to lodge the newly acquired collections of the National Museum of the American Indian is non-existent, but it is in the planning stages. Storage for the Institution's voluminous archives barely meets national standards.

The Institution's 1990 Master Plan for Suitland, Maryland documents all construction and major renovations, and projects space requirements into the twenty-first century. Without the expanded facility that the Master Plan proposes, the collections will be subjected to adverse and unstable environmental conditions, exposing them to potential deterioration, in addition to making them less accessible.

Beyond physical care, the Institution has a responsibility for management and accessibility of information about collections. Automated information systems serve to balance the goals of accessibility to and accountability of

State of Smithsonian Collections (Continued)

collections. Technologies streamline the daily workloads of collections management staff and improve record-keeping by connecting collections, research, and administrative activities.

The Institution has made great inroads with automation through its Collections Information System (CIS) and museum-specific data base systems. Standardization of data and functional models, jointly developed by Smithsonian museum and automation experts, have laid the groundwork that will enable information sharing throughout the Smithsonian and with outside

organizations. Resources needed to perpetuate progress in automation are substantial.

The Smithsonian's immense historical and scientific collections hold possible solutions to present and future national and international dilemmas. The Institution has a highly skilled and dedicated staff to register, catalog, study, store, and preserve collections; these efforts create opportunities to share derived knowledge and to display human and natural artifacts. The Smithsonian will be able to fully provide this knowledge and this opportunity only if the Institution first meets the challenges of acquisition, abundance, and accessibility.

Understanding the Global Environment and Our Place in the Universe

The current environmental situation demonstrates the enormous deficiencies in human understanding of biological and physical processes. Smithsonian scientific research interests are cogent to today's growing environmental concerns.

Because of its collections, interests, and qualifications in biological, geological, and astrophysical research, the Smithsonian possesses rare scientific research capabilities that can redress some of the inadequacies in environmental understanding. By dedicating resources to the pursuit of improved cumulative environmental understanding the Institution fulfills its fundamental mission of increasing and diffusing knowledge among all peoples.

Our species has come to dominate the earth in a relatively short time. With our rapid and accelerating technological evolution, we are increasingly in danger of experiencing environmental catastrophes—perhaps even ones that could subvert the planet's environmental balance. Areas in which Smithsonian scientific research addresses some of these challenges include preventing the deterioration of our natural environment and the attendant loss of biological diversity, searching for new foods and medicines, and attempting to understand what lies beyond our own planet.

The entirety of these activities spans the scientific, cultural, and the artistic contributions of the human species to the world's diverse civilizations. The Institution plans to continue to strengthen research activities and respond to the many challenges by expanding its research in global environmental issues and by extrapolating research results into

"Timber harvesting, land clearance for commercial cattle grazing, and encroachments for subsistence farming on thin, easily depleted tropical soils by burgeoning rural populations in many underdeveloped countries all play a part in the destructive processes that are widely at work in the tropics. These processes go forward not only in many small encroachments on forest margins but sometimes in massive clearings in the very heart of the largest, still mainly undisturbed, areas like the Amazon basin. Accounting for only some seven percent of the earth's land surface, these immense reservoirs of differentiated life almost certainly harbor well over half of all living species. By one estimate, as many as thirty million insect species alone—the overwhelming proportion of them never studied or represented in collections—are mostly confined to rain forest canopies.

There are cogent, practical arguments for taking urgent steps to preserve tropical ecosystems where we can and for getting on much more rapidly with the daunting task of inventorying the resources that could be irretrievably lost before their existence has even been recognized. The presence among them of potentially important plants and pharmaceuticals can be predicted with certainty. Included in the gene pool that will otherwise vanish are vital future contributions to the overall range of genetic variability. But no less important is the potential loss to science of a substantial part of its data in fundamental biology."

— Robert McCormick Adams, Secretary
In the *Smithsonian Year*, 1986

Robert Redford narrated a Smithsonian public service announcement that focused on protecting the earth's delicate systems of nature. (Photo by Richard Hofmeister)



public education and exhibition programs. This expansion involves three areas of research emphasis:

- Biodiversity and the environment;
- Wildlife conservation and preservation; and
- Major scientific instrumentation.

The Smithsonian will intensify energies to raise support from private and government sources of funding for all aspects of Institutional research and especially invites donor patronage that advances global environmental studies.

Biodiversity and the Environment _____

The Dynamics of Tropical Forests and Ecosystems

The study of tropical environments is vital to understanding global change. Containing most of the world's animal and plant species, the tropics represent important, though mostly untapped, sources of medicine and food. For example, many of the world's migratory landbirds that are not native to the tropics still winter there; the destruction of tropical habitats would disrupt their migratory patterns and breeding groups and decrease the bird population. Tropical environments are in a constant and rapid state of change. Deforestation proceeds at an unprecedented rate, threatening the extinction of many species before science has a chance to understand species interdependence, their ecological roles, and potential medical or applied benefits.

The Smithsonian Tropical Research Institute in Panama is the only U.S. affiliated field laboratory of its kind in the American

tropics. The Isthmus of Panama is a key region for examining global change from both biological and geological perspectives. The Institute's research encompasses all aspects of terrestrial and marine ecology and behavior. STRI plans to enhance its programs in three areas of global change research: the biological and geological mechanisms of change; long-term physical and biological monitoring; and conservation and management studies.

Scientists at the National Museum of Natural History/Museum of Man are intensifying research and training programs in tropical biodiversity by focusing on biological inventory and by monitoring effects of deforestation on species diversity. Major efforts in Brazil will join existing programs in Andean countries and the Guianas to document and describe the extraordinary diversity of plants and animals threatened by the accelerating loss of forest. The findings will strengthen our understanding of the diversity and dynamics of tropical forests, reveal the effects of such deforestation, and lead to recommendations for minimizing the fragmentation and loss of forest and biota.

North America is home to over 120 species of breeding landbirds that annually migrate to the tropics over winter. These birds not only have immense cultural and recreational value, but they protect temperate forests from damage by reducing populations of defoliating insects. Scientists believe that the massive clearing of forest in Central and South America has directly contributed to the population decline of migratory landbirds. Researchers at the National Zoological Park plan to study the effects of habitat destruction on migratory bird populations. This research will provide important data on methods for mitigating the effect of ecological alterations.

The rising level of carbon dioxide in the earth's atmosphere is now widely recognized to elevate prevailing temperatures worldwide and alter climate patterns, a phenomenon otherwise known as the greenhouse effect. Many scientists expect that temperatures worldwide will increase over the next several decades, creating as yet unknown consequences for coastal areas, agricultural production, and discrete global climate patterns.

Another aspect of the rising carbon dioxide levels is an increase in rates of plant growth. At the Smithsonian Environmental Research Center (SERC), located on the Rhode River watershed system of the Chesapeake Bay, scientists are testing the effects of increased carbon dioxide upon wild plants and associated ecosystems. Preliminary findings corroborate previous laboratory determinations that plants respond to

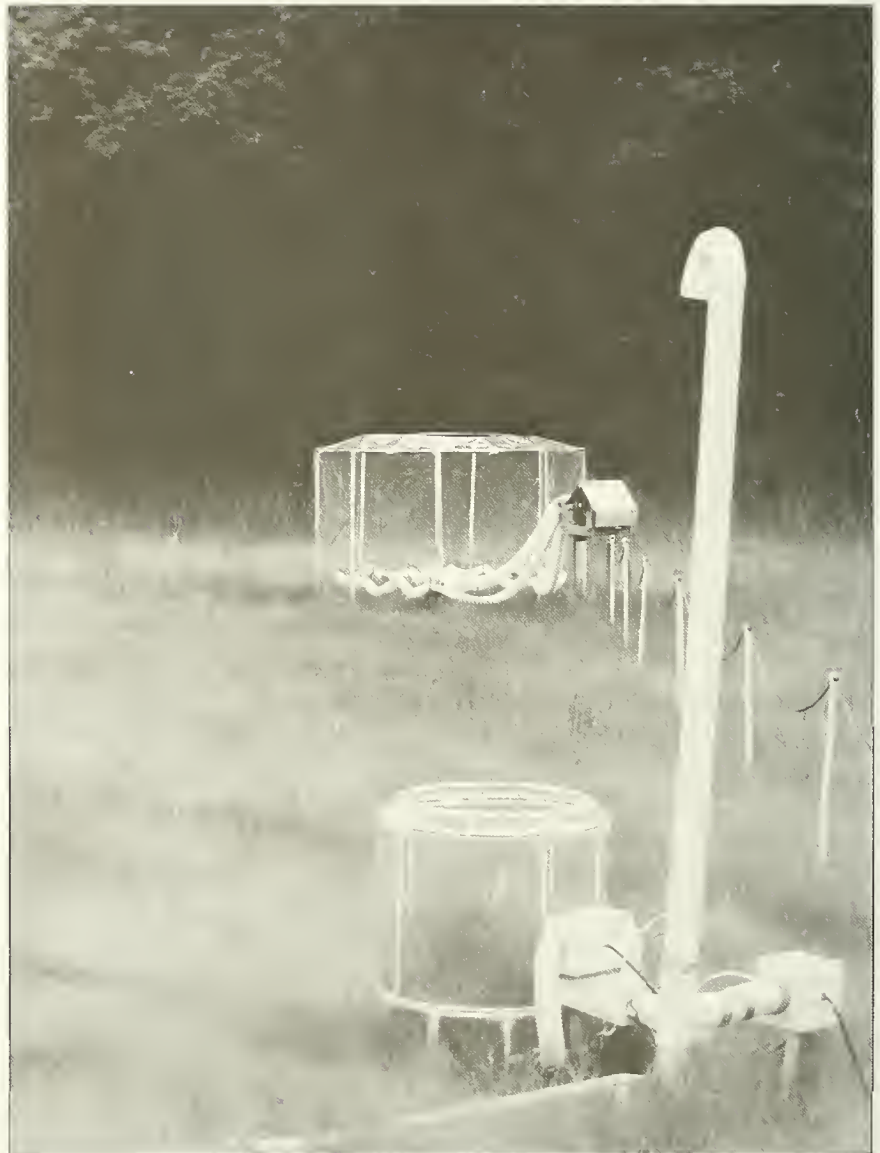
The Greenhouse Effect

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elevated carbon dioxide levels by absorbing more carbon from the air and less water. SERC currently controls 2,600 acres of the watershed and plans to access an additional 2,000 acres. This acquisition will prevent urbanization on the enlarged site and allow SERC to conduct research on both forested and agricultural lands.

Biological activity and diversity on earth are concentrated in the uppermost layers of forest canopies and ocean waters. Techniques are readily available for safe and rapid access to marine habitats, permitting rigorous research and improved management practices, but comparable techniques are not

SERC is developing and testing larger chambers for measuring the impact of increased concentrations of carbon dioxide.



available for the forest canopy. As a result, the forest canopy remains one of the last frontiers for biological research. The upper canopy is a primary site of interaction between the atmosphere and the plant community. The nature of heat, water, and gas exchange in this region is poorly understood, as are many of the species of animal and insect life that live there. Expanded knowledge of these processes is critical for an understanding of global climatic change. The Smithsonian proposes an innovative use of existing technology that would offer extensive, safe access to canopies in two forests: the tropical lowland forest of the Smithsonian Tropical Research Institute at Barro Colorado Island, Panama and the temperate broadleaf forest of the Smithsonian Environmental Research Center in Maryland. The Smithsonian



Currently, SERC uses a 160-foot tall walk-up instrument tower that soars above the forest.

plans to redesign construction tower cranes to provide reliable, rapid access to large areas of forest canopy at both sites.

Ecological and Evolutionary Histories

Complementing research on environmental change at STRI and SERC, the National Museum of Natural History/Museum of Man (NMNH) plans to establish a permanent laboratory for analyzing its collections of archaeological plant and animal remains. Human groups have manipulated and changed plant and animal communities over thousands of years. Research on these long histories of human alteration of ecosystems would provide a rich context for understanding the consequences of modern manipulation of ecosystems. This program's objective is to document and understand major historical turning points in mankind's ability to change the earth's environment.

NMNH scientists plan to research island ecosystems in the Atlantic, Pacific, and Indian oceans to isolate the causes of extinctions of birds and other animals. These extinctions swept the world's isolated islands well after the last ice age and apparently were caused by prehistoric human activities. Expanded, collaborative investigations with research organizations in Kenya, Ethiopia, China, India, and South America will concentrate on the long-term dynamics of human adaption to the varying environments and the effects of human activity on progressive environmental change—from the age of the hunter and gatherer, through the development of agriculture and industry, to today's distressed terrestrial and marine ecosystems.

Wildlife Conservation and Preservation

The National Zoological Park (NZN) has achieved great success in recent years in gamete research and embryo technologies. The Zoo's research is important for wildlife conservation and preservation efforts around the world. New laboratory techniques for *in vitro* or test tube fertilization are useful for reproduction in rare and endangered species. Researchers at NZN have joined forces with scientists from two other U.S. zoos to achieve a major milestone in the fight to save endangered species. The birth in the spring of 1990 of the world's first tiger cubs from *in vitro* fertilization dramatically highlights the prospect of reproductive physiologists playing an ever more crucial role in saving animals from extinction.

The Zoo plans to establish an endocrine research laboratory. The laboratory will respond to current concerns about global biodiversity by providing unique approaches to the mysteries of why some wildlife species thrive and others do not. Such information is vital to our abilities to propagate and genetically



The first tiger cub bred by *in vitro* fertilization and a domestic kitten bred by laparoscopic *in vitro* fertilization, the next step in breeding exotic species that reproduce poorly. (Photo by Jeff Tinsley)

manage rare species in captivity and in the wild. The program will have three functions:

- Understanding reproductive processes in diverse wildlife species;
- Identifying the reproductive status of captive and free-living populations in diagnosing and combating infertility; and
- Using endocrine monitoring techniques to facilitate the effectiveness of advanced reproductive technologies including artificial insemination using fresh or frozen sperm plasm, embryo transfer, and *in vitro* fertilization.

Major Scientific Instrumentation

The development and acquisition of state-of-the-art instruments are essential to modern, basic scientific research. The Smithsonian consistently has pioneered the research and development of new instruments pertinent to its areas of investigation. The Smithsonian developed the Baker-Nunn camera to facilitate astrophysical research in the late 1950s and early 1960s and to track the orbits of interplanetary material and satellites. The Institution developed increasingly sophisticated instruments for measuring solar phenomena and the changes in chemical processes related to photosynthesis. The Institution was at the forefront of developing new technologies and instrumentation used in the first multiple-mirror telescope, dedicated May 9, 1979.

Over the planning period, The Smithsonian Astrophysical Observatory (SAO) will continue development of two major scientific instruments: a submillimeter wavelength telescope array; and a 6.5-meter diameter mirror to convert the multiple-mirror telescope, atop Mount Hopkins, Arizona, into a large single mirror telescope.

The submillimeter telescope represents a bold new step in the exploration of space through ground astronomy. For decades the Smithsonian Astrophysical Observatory has led the world in ground-based astronomy. By studying the universe with ground-based instruments of high resolving power at submillimeter wavelengths, scientists can observe the birth of stars, research the cores of quasars and galaxies, and study the atmospheres and surfaces of planets. The submillimeter telescope would enable astronomers to observe the largely unexplored part of the electromagnetic spectrum that lies between radio and infrared waves. Astronomical sources which emit mostly submillimeter radiation are "cool objects," having average temperatures near absolute zero (-459.673 degrees Fahrenheit). This band is important because it covers the invisible emissions of the ice halos of comets, emissions from molecular clouds which can become stars, and emissions from the swirling disks of dust and gas that can form planetary systems.

SAO's submillimeter telescope would consist of six movable six-meter-diameter telescopes. Together the instruments would comprise an interferometer in which the separate instruments work together to create the equivalent of a single telescope with a resolution one hundred or more times better than any one of the individual instruments.

The Institution, working in conjunction with scientists at the University of Arizona, is using new technology to spin cast a honeycomb 6.5-meter diameter mirror. SAO has selected a consulting engineering firm and completed the conceptual design. The University of Arizona's Mirror Laboratory enlarged the casting furnace to accommodate this mirror. In fiscal year 1991, casting of the 6.5-meter diameter mirror will take place. This mirror will be the first truly large mirror of its kind and will help keep the nation at the forefront of astronomy. The conversion of the multiple-mirror telescope will more than double the light-gathering power of the telescope and increase its field of view more than one hundredfold. The increased collecting area of the converted telescope will allow astronomers to gather data with equal precision on objects 2.5 times fainter. This improvement will allow the use of the converted telescope in many new areas of research where the extreme faintness of the objects involved precludes the use of the present telescope.

Further, the added light-gathering power means that astronomers will be able to study more than twice as much of the universe.

Over the course of its history, the Smithsonian has distinguished itself in various aspects of research on the natural world. The activities mentioned here are but a part of a larger number of ways the Institution is addressing concerns about growing environmental problems.

The concentration of the U.S. government over the past few years on eliminating the national debt and achieving a balanced federal budget has restricted the government's capacity to fund global environmental research. Eventual elimination of the national debt is essential for the continued economic health of the country; meanwhile the Institution will continue to seek increased appropriations support for its basic research programs, especially in areas dealing with global environmental problems. Since, however, the Smithsonian cannot predict with any certainty the amount of federal support of Institutional research, it will increasingly look to private donors for the support of new research initiatives in the environmental sciences.



Smithsonian scientists use a balloon-borne spectrometer in an effort to understand the complex interaction between the sun's radiation and particles in the atmosphere and the effect of this interaction on global change.

State of Smithsonian Research

Research at the Smithsonian Institution—the increase of knowledge—has always held a fundamental place in the life of the Institution, undergirding many of its other activities and enabling it to stand today as one of the great cultural institutions in the world. Knowledge connotes an almost infinite range of possible intellectual activities. However, over the nearly one and one-half centuries of its existence, the Smithsonian has developed particular strengths in certain interrelated areas. These specialties focus on the past history and present state of the universe, our planet earth with its complex living systems, and human cultures, past and present. Much of this focus has grown from the Institution's responsibility for the national collections, the majority of which are in natural history and anthropology and comprise some of the Institution's greatest scholarly assets. In addition to collections based research, the Smithsonian conducts experimental research in such areas as microbiology and astrophysics. The Institution supports research projects on the universe, the earth, endangered species, and other ecological subjects.

Smithsonian researchers examining the universe have focused on whether or not there is detectable structure in the cosmos, or whether the distribution of celestial objects is random. As a result of years of painstaking survey, Smithsonian scientists have established recently that the universe is not organized randomly, and that galaxies are arrayed in thin sheets separating large apparent voids. Discoveries such as these help explain the origin and evolution of the universe and the solar system.

As part of the Institution's global research efforts, scientists are employing earth-orbiting satellite images taken of desert and semidesert regions of Africa to monitor and attempt to understand the process of desertification, or the conversion of landscapes from vegetated to desert ones. Institutional scientists also are studying phenomena in the upper atmosphere, such as mechanisms that cause ozone depletion,

thereby permitting an increase in detrimental ultraviolet radiation at the earth's surface.

Global degradation also results in biological degradation among individual species and, thus, may result in the decline and eventual extinction of vulnerable life forms. Critical research includes captive breeding of endangered species and the development of techniques that permit the successful reintroduction of captive-bred individuals into preserved or restored habitats. Other zoological research is devoted to highly experimental methods employing new technologies such as frozen preservation of eggs and sperm and test tube fertilization of embryos, as well as studies of molecular and population genetics.

Within the solar system, the earth is the only known planet that supports life. The origin and evolution of living systems is another focus of research at the Institution. Smithsonian scientists study human impact upon the planet; human populations and their genealogical relationships; how early humans lived within their own ecological communities; and the nature of their ecological impact. By examining extensive collections of fossils of plants and animals representing a period of nearly a half billion years, scientists are beginning to reconstruct the evolutionary lineages of organisms and the nature of the ecosystems that they co-inhabited. Research indicates an emerging pattern in which there are intervals of great stability for long periods of time, followed by rapid collapse of the communities within the ecosystem, followed, in turn, by the emergence of a reorganized set of communities with newly-evolved organisms. Understanding the factors that lead to both stability and change are of great importance in interpreting ecosystem stability and sensitivity to change on earth today.

Ecosystems such as tropical rain forests and coral reefs with their associated coastal mangrove swamps are presently under great pressure as a result of human activity. These delicate environments are deteriorating rapidly.

State of Smithsonian Research (Continued)

Although inventories of the species composition of these ecosystems are far from complete, preliminary data indicate that these are by far the richest ecosystems in terms of their biological diversity and consequently of great importance to the earth as a whole.

The world is now less than a decade from the dawning of a new millennium. The issues

that confront its citizens are ever more complex yet, at the same time, interdependent. The Smithsonian research agenda increasingly focuses on the linkages between culture and science and the need to present our research findings in a holistic manner to our diverse audiences.

Exemplifying the Nation's Pluralism

Cultural diversity always has been a strength of the nation. Diverse cultural contributions and perspectives are an integral part of the development and evolution of not only this but every nation.

If one were to look at an evolutionary cultural map of the world, it would reveal very little about today's administrative or geopolitical borders. Such a map is never static. Ideally it should show massive, continuing flows and growing interdependencies. Today more than ever before, changes in such a map and changes in any given nation's cultural diversity are occurring rapidly. These changes are not always constructive. With the homogenizing influence of mass media and the built-in authorities of national institutions and elites, change can also bring eroding and destructive aspects to cultural values. An historical example would be negative stereotyping for those designated as minorities, with resulting alienation or exclusion from the processes of governance and social interaction, as well as educational and economic deprivation.

Global changes in cultural values present numerous opportunities for the

Smithsonian. Cultural appreciation offers opportunities to implement the Smithsonian's mission—to increase and diffuse knowledge—at the same time it places many new public demands and expectations upon the Smithsonian. The Institution is committed to changing its exhibitions and educational programs to provide the public with meaningful and comprehensive interpretations of all cultures. It is also committed to internal Institutional changes affecting the current profile of its workforce and the representation of cultures on its administrative and advisory boards and commissions.

"The Smithsonian is to be included among national institutions, to be sure, but it is like no other. It is here to serve all segments of our population, and to address a world audience. It cannot escape the responsibility to speak to and for that entire population and audience. This requires that we be at pains neither to idealize and reify the purported "mainstream" of global as well as our national culture, when so many are still denied access to it, nor to place "non-mainstream" cultures under an idealized bell-jar that freezes them in time."

— Robert McCormick Adams, Secretary

State of the Smithsonian Report,
December 19, 1989.

Management Initiatives

The Institution is developing processes that will result in wider recruitment and hiring of women and minority professionals; foster retention of new hires by promoting a



“Legend of Mount Oe”
Japan, Edo Period, ca.
1625–1650 (Photo by
John Tsantes)

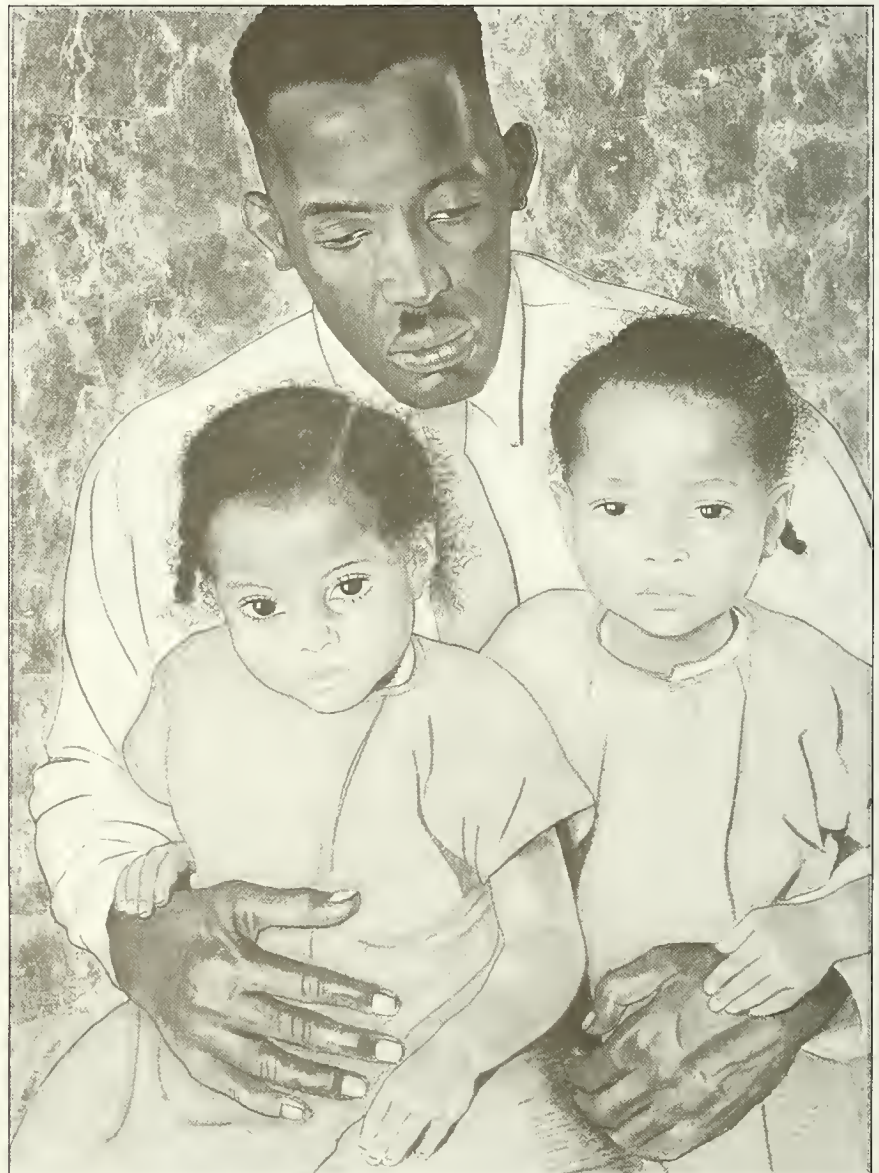
receptive work environment; provide career development and training opportunities for all staff; and generally provide for greater investment in the human capital potential of the Institution.

As part of new efforts, the Institutional management supports further targeting of the programming of the Smithsonian Institution Traveling Exhibition Service (SITES) to reach wider and more culturally diverse audiences and organizations with limited budgets and resources. In addition, the Office of Wider Audience Development will coordinate such efforts as working with staff advocacy organizations and participating in various cultural committees and commemorative activities.

African-American Programs

Central to the Institution's plans is a determination to increase African-American programming on the Mall. The Institution's management encourages closer working relationships with predominantly minority organizations, such as the African American Museums Association and its members. It supports the efforts of the Smithsonian African American Association, which is a membership organization of the employees of the Institution who share the goal of securing equal opportunities and program treatment for culturally diverse communities.

"Father and Children"
from the exhibition **"To
Color America: Portraits
by Winold Reiss,"** at the
National Portrait Gallery



The Institution recently selected a twenty-two-member advisory committee to assist with the examination of the form and content of an African-American presence on the Mall. This committee, known as the African-American Institutional Study Advisory Board, is exploring such issues as the type of African-American entity that the Smithsonian could incorporate; the concerns and responsibilities of museums of ethnic heritage; and the outstanding models of Smithsonian and other organizations' cultural initiatives. The Board will complete its report in early 1991. The Institution currently seeks funding to achieve even broader initiatives for cultural pluralism.

Other Initiatives

The Institution's museums and galleries have planned for and are developing activities that will realize the Smithsonian's intentions for more cultural programming. The Columbus Quincentenary commemorations will reflect many of these activities, designed to intensify our common awareness of the cultural and hemispheric contexts that framed the developing forces of this nation, forces which national preoccupations and stereotypes obscure.

The development of programs for the National Museum of the American Indian provides another opportunity for the Institution to evaluate and redouble its effort to strive for increased sensitivity to the conditions, needs, and aspirations of multiple and growing audiences.



The American Indian Theatre Company performed at Natural History's Baird Auditorium. (Photo by Rick Vargas)

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In addition, the Smithsonian will seek to use media more effectively as a key tool to reach new audiences and distribute educational materials. *Smithsonian World*, the top-rated prime time public documentary program, will produce five one-hour specials annually. These programs will explore the scope of modern cultures using as a link the Institution's wide-ranging cultural agenda. The Office of Telecommunications will develop several projects to reach more culturally diverse audiences. Among these are a proposed series of short features for Spanish-language television, a variety of radio programs offering a wide range of traditional music, and documentaries looking at aspects of African-American and Latino culture. The Smithsonian Press, through its publication and recording programs, will explore ways to increase and improve its material to reach broader cultural audiences.

Pendant with European and horse from the Benin Kingdom, Edo peoples, Nigeria eighteenth and nineteenth Century displayed at the "Icons: Ideals and Power in the Art of Africa" Exhibition at the National Museum of African Art. (Photo by Jeffrey Ploskonka)



State of Smithsonian — Workforce Profile

The Smithsonian's most important asset is its human resources. Dedicated staff perform a multitude of functions from cutting-edge scientific research to facilities maintenance. The Institution's workforce has grown steadily since the early 1960s. Recently, the Smithsonian has strongly pushed to ensure that the overall workforce adequately and appropriately represents the cultural diversity inherent in our nation. An integral part of meeting its mandate "for the increase and diffusion of knowledge" requires that the Smithsonian have at its intellectual core a variety of cultural perspectives. As preservers and presenters of those things we as a people hold most dear, it is incumbent upon the professional staff of the Institution to not only safeguard its treasures, but also to faithfully exhibit and interpret them for its visitors.

With support from Congress, the Institution has undertaken several special employment initiatives over the past few years geared to improve the Institution's minority profile among the research and professional ranks. One such effort allowed the Institution to make permanent a number of positions for minority professionals which the Institution had filled on a temporary basis as funds became available. Other efforts underway include an expanded upward mobility program that allows current minority employees to apply for certain professional positions with the guarantee of necessary training and advancement through an approved career ladder. Such efforts have resulted in a marked increase in minority representation in the professional ranks. Minority women in particular have experienced the largest employment growth both in this category and in the overall workforce.

At the senior levels, women compose about one-third of the workforce, a sharp increase over only five years ago when the workforce was about 16 percent women. Minority representation at the senior level has also increased but at a slower rate. The Secretary and his management staff have made a commitment to improving the Institution's minority profile at the most senior levels.

Although the Institution has made some progress in attracting more women and minorities to its senior and professional ranks, it is also losing some of its best people because of an inability to pay salaries that are competitive with other cultural and academic institutions. Therefore, the Smithsonian is exploring the possibility of legislative relief through development of a Smithsonian Institution Senior Service for civil service employees and a Senior Executive Compensation System for trust funded employees.

The Smithsonian initiated on-site child care in 1988, with an infant facility scheduled to open in January 1991. These facilities have proven a boon to reducing absenteeism and turnover as well as an attractive inducement for new employees. Given the upward trend in women employees this is a timely development.

For the future the Institution will explore other innovative ways of optimizing its most important asset—its employees. Other benefits that might attract both present and potential employees include cafeteria plans and incentive programs. The present Office of Personnel Administration will become the Office of Human Resources with a corresponding change in its philosophical mission.

National Museum of the American Indian

On June 18, 1990 the Supreme Court of New York approved the agreement between the Smithsonian and the Museum of the American Indian, Heye Foundation, to transfer the Foundation's extraordinary assemblage of more than a million Indian objects and artifacts from all parts of the Western Hemisphere to the Institution. The Heye Foundation collection forms the basis of the

National Museum of the American Indian. The agreement also calls for the transfer of the Foundation's endowment and most of its other property, including a 40,000-volume library and 86,000-item archive.

Previously, on January 29, 1990, the Smithsonian Board of Regents approved the selection of the Museum's trustees. On May 21, 1990, Secretary Adams announced the appointment of W. Richard West Jr., an Albuquerque, New Mexico attorney and a member of the Cheyenne-Arapaho tribes of Oklahoma, as Director of the Museum.

The agreement and the court approval culminate lengthy negotiations involving the Foundation, the City of New York, the State of New York, and the Institution. When the museum building on the Mall is completed in the late 1990s, it will stand as a tribute to the heritage and the contributions of the native cultures of this Hemisphere. The director envisions a living museum that will

depict "part history, part sociology—a slice of Indian life, past and present." The museum will showcase the philosophical and intellectual continuity of Native American cultures, emphasizing values that are inherently Indian and that merit renewed appreciation in today's world.

Native American communities which might not be able to view the Museum's rich collections on the Mall will have the opportunity to do so through unprecedented outreach and traveling exhibitions. Training opportunities built into the Museum's programs will provide Indian people with access to the collections and previously limited career development opportunities to Native Americans in the museum field. Indians working with the collections will enhance our knowledge through

"Nothing could be more appropriate, I believe, than for the first Americans to be at the head and heart of the effort to research, interpret, and celebrate the diverse cultural experiences that go to make up this nation—for their museum to become a flagship of hemispheric cultural diversity. I emphasize that this will be, to an unprecedented extent, *their* museum: under Native American leadership, devoted not to the timeless past of Hollywood (and, too often, also school textbook) myth-making but to the full range of intellectual, artistic, and cultural achievements of a living people, pulsing with the diversity of belief and material expression within their own number, and speaking to the world in their own voices of their hopes and tragedies and permanent place in the family of humanity."

— Robert McCormick Adams, Secretary

State of the Smithsonian Report,
December 19, 1989



Some members of the board of the National Museum of the American Indian, seated from left: Barber Conable Jr., Julie Johnson Kidd, Curt Muser, Helen Sheirbeck, Jennie Joe; standing, from left: Arturo Warman, Janine Pease-Windy Boy, Alvin Josephy Jr., Waldemar Nielson, Roger Buffalohead, Fred Hoxie, Rosita Worl, Ernest Boyer, David Hurst Thomas, Norbert Hill, Secretary Adams. (Photo by Dane Penland)

their identification and interpretation of the materials of their cultures.

Public Law 101-185, which established the Museum, authorizes facilities in three separate locations:

- A building to be constructed on the Mall in Washington, D.C., on land Congress reserved for the Smithsonian in 1975, just east of the National Air and Space Museum;
- A portion of the Old United States Custom House at the tip of lower Manhattan in New York City; and
- A conservation, storage and research facility adjacent to the Institution's Museum Support Center (MSC) in Suitland, Maryland.

The Institution anticipates four major sources of funding for these facilities: the City of New York; the State of New York; federal appropriations; and private donor contributions.

The Museum on the Mall

The museum building on the Mall will house major exhibitions, reference and collection areas, an auditorium, a museum shop, and other public and administrative programs. The Museum's enabling legislation requires that one-third of the cost of construction of the Mall building will derive from nonappropriated resources. To meet this requirement, the Institution has initiated a national fund-raising campaign. The Institution anticipates occupying the building in fiscal year 1997 and opening it to the public by the year 2000.

The Old United States Custom House, New York City

The first and second floors of the Old United States Custom House in lower Manhattan will house an extension of the National Museum of the American Indian. Under the terms of the Smithsonian's agreement with the Heye Foundation, this facility will bear the name of George Gustav Heye, who established the Foundation to preserve and exhibit his extensive collection. The Heye Center will contain space for exhibitions, educational programs, and other public services. The Smithsonian is planning an opening exhibition in 1992 at the Heye Center and anticipates the full opening of the facility to the public in fiscal year 1993.

Ghost dance buckskin dress from the National Museum of the American Indian collection. (Photo by Carmelo Guadagno)



Collection Conservation, Storage, and Research Facility

The Institution plans to construct the conservation, storage, and research facility adjacent to its Museum Support Center in Suitland, Maryland. The National Museum of the American Indian will use this facility to provide a stable, secure environment for most of its collection transferred from New York. This facility will enable the Museum to conduct conservation, preservation, and research activities on the collection while offering important training programs for Native Americans in museum disciplines. The Institution anticipates completing and occupying the support center facility in fiscal year 1995.



An Aztec stone carving representing Xipe Totec, the Flayed God, from the National Museum of the American Indian collection. (Photo by Carmelo Guadagno)

Quincentenary Programs

Christopher Columbus's voyage of 1492 marked the beginning of a new era—five hundred years of encounter and exchange between the Americas, Africa, Asia, and Europe. The ensuing interactions between two hemispheres of the globe profoundly changed the history of the world. The Smithsonian Institution will commemorate Columbus's voyage, focusing on cultural, historical, and scientific repercussions from the confluence of two hemispheres. The Smithsonian's Quincentenary commemoration will serve as the basis for a permanent program that will focus on the environment, history, and cultures of the Americas.

The cultural diversity of the United States is in large part a consequence of the encounter between indigenous New World cultures and peoples and those of the Old World initiated by the voyages of Columbus. The native peoples of the Americas—American Indians—were the true discoverers of the New World. The events initiated by the Columbian encounter led, however, to a series of exchanges of peoples, plants, and animals, including diseases. The complex interplay of these societies and cultures from both sides of the Atlantic gave rise over half a millennium to the rich cultural diversity that is both this nation's strength and the source of many of its challenges. The history of not only Native-Americans but also African-Americans and Hispanic-Americans is or will be, the principal emphasis of scholarly research and public programs at the new Museum of the American Indian. The planned institute of the Americas as well as the existing Museum of American History and Anacostia Museum will equally concentrate on these historic and contemporary cultures. Also important is the artistic heritage of the many other indigenous peoples who have contributed to the cultural richness of the Americas.

The pan-Institutional Quincentenary commemoration will reflect the diversity of Smithsonian research interests and provide the public with a broader perspective on the significance of Columbus's voyage. Twenty bureaus and offices are planning activities in collaboration with scholars from the Smithsonian and other institutions in the United States and Latin America. The events described here are only a partial listing of the diverse and emerging array of planned activities. The international and interdisciplinary dimensions of the commemoration will highlight the experiences and contributions of all peoples affected by Columbus's voyage.

The Institution is seeking federal support to invest in these Quincentenary activities. However, since the level of federal support remains uncertain, the Smithsonian will continue to look for private donor contributions to ensure the completion of this special initiative.

Exhibitions

Seeds of Change

Columbus's voyages of discovery were in reality a collision of two worlds; the impact of the collision continues to be felt today. The voyages unleashed forces of encounter and exchange, dramatically altering the flora and fauna of both the Old and New Worlds. Those forces also re-ordered the ethnic composition of every corner of the globe and transformed the diet and health of peoples everywhere.

Plant, animal, and disease exchanges between the Old and New Worlds sowed these "seeds of change," and transformed the cultural and ecological landscape of the Americas, causing profound changes, some deliberate, others accidental. Sugar despoiled the landscape and contributed to the ethnic changes in the Caribbean. When there were no longer enough Indians to maintain the plantations, Europeans turned to Africa for slave labor. Maize and potato, cultivated by Native Americans hundreds of years before contact, now feed the world and are an energy source for the future. Disease, traveling as uninvited cargo with Europeans, decimated Native American populations. The horse, once indigenous to the Americas, disappeared during the Ice Age but was brought back by Europeans. Indians, at first startled by the strange creatures, eventually became some of the finest horsemen the world has known.

The exhibition will open at the National Museum of Natural History in the fall of 1991 and remain on view until April 1993. The Museum plans to offer a wide range of programs, traveling exhibits, publications, lectures, and symposia. A companion book is planned for publication in March 1991; a panel show co-sponsored by the American Library Association will begin traveling to sixty cities in January 1992; collaborative exhibits will open at seven major museums during 1992; and, adding to the celebration in Washington, D.C., is the Festival of the American Horse in May 1992.

Various groups in the Upper Rio Grande Valley of the southwestern United States—American Indian, Hispanic, African-American, and Anglo-American—strive to maintain their cultural identities amid the demands of competing ideas, technologies, and resources. The National Museum of American History will install "American Encounters" as a permanent exhibition about the continuing encounters between cultures after Columbus. The goal is to help visitors understand the value of cultural diversity both as a lesson from the past and as a necessity for the future.

American Encounters

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Visitors will encounter different perspectives and various voices, drawn from oral, performance traditions and graphic arts. Visitors will examine objects and, through interactive video stations, interview the makers/users of these objects. For example, from an Hispanic New Mexican who has customized his automobile into a low rider, a visitor will learn what the car symbolizes to its maker and to his community; a simulated court case in New Mexico will explore the conflicts between human and natural law as they relate to settlement, land, and water rights.

In conjunction with the exhibition a full schedule of symposia, workshops, demonstrations, performances and films will address specific topics and issues introduced in the exhibition.

The exhibition will open in October 1992 at the National Museum of American History.

Where Next, Columbus?

"Where Next, Columbus?" will examine prospects for exploration in space during the next five hundred years. The exhibition will focus on possibilities and realities of exploring space. It will consider the broad context of politics, economics, science, and technology surrounding Columbus's exploration of the New World, twentieth century exploration of space, and future voyages through the solar system and beyond.

The main exhibition will remain on view for three to five years. It will feature interactive computer video programs for mission-planning and decision-making activities, such as: options for space travel; Mars mission-planning; the Greenbank formula for estimating the probability of extant civilizations; and a public opinion survey on space exploration.

The exhibition will also feature two films. The film *Spacefaring* reviews science fiction classics about space travel with special commentary to correct common misconceptions about the laws of physics that govern space flight. Another film will mingle clips from science fiction classics with commentary on social psychology, historical events, and other factors that give rise to images of meeting or communicating with extraterrestrials. The film also will include experiences of first contacts on our own planet among peoples, such as Columbus and the Indians, and twentieth century explorers and aborigines in New Guinea.

The exhibition will open in the spring of 1992 at the National Air and Space Museum.

The West as America: 1820-1920

An art exhibition, "The West as America: 1820-1920," will link the opening of the western frontier during the middle and late nineteenth century with the first explorations of the Americas. The exhibition will include major paintings by Frederic Church, Albert

Bierstadt, Emanuel Leutze, George Catlin, George Caleb Bingham, Frederic Remington and their contemporaries. The subjects of these paintings range from the vision of Columbus to monumental views of the Rockies and Sierra Nevada mountains.

The exhibition will explore the dual nature of the settlement of the American West. New research presents both the positive aspects of development and the problems and dislocations, physical and cultural, that will attend this intrusion into nature's wilderness and encounters with native inhabitants. Western scenes are often skillful combinations of myth, symbol, and fact that present a highly edited version of the events they appear to document. The exhibition will explore the role of imagery in promoting a national bias for expansion during the nineteenth century.

The exhibition will open in March 1991 at the National Museum of American Art.

The World's Columbian Exposition, held in Chicago in 1893, celebrated the four hundredth anniversary of Columbus's arrival in America. The quality of American art shown at the fair was a central factor in redefining both the American and European attitudes toward American artists. As one critic of the period noted, the exhibition was "an event of the epoch-making kind in the history of American art." The National Portrait Gallery and the National Museum of American Art will present a joint exhibition of approximately two hundred important paintings and sculptures from the more than twelve hundred American works originally exhibited in the Fine Arts Building at the World's Columbian Exposition.

The original exhibition established for the first time the parity of American artists with their European counterparts. It announced unequivocally the role of American art and artists as major figures in the international cultural scene and it also revealed the wide-ranging attitudes of late nineteenth century American artists toward contemporary life, the past, nature, religion, and portraiture.

The exhibition will open in April 1993 at the National Museum of American Art/National Portrait Gallery.

This art exhibition will present one hundred works by four artists who were among the first Latin Americans to make significant contributions to international modernism during the first half of the twentieth century. Although many Latin American artists attained recognition after 1950, this exhibition focuses on four who pioneered this trend and introduced an unprecedented

American Painting and Sculpture at the World's Columbian Exposition, 1893

Four Latin American Pioneers of Modernism

biculturalism: Diego Rivera (Mexican, 1886–1957), Joaquin Torres-Garcia (Uruguayan, 1874–1949), Wifredo Lam (Cuban, 1902–82), and Roberto Matta (Chilean-French, b. 1911). The exhibition also will include the free bilingual brochure, an illustrated catalogue with historical essays, education programs, a symposium, and a film series.

Not content merely to emulate European modernism, these artists were among the first to explore possibilities for integrating that avant-gardism with aspects of Latino culture. This exhibition highlights the diversity of their styles and imagery. Rivera is represented by his Cubist phase and his later figurative scenes from modern Mexican life. Torres-Garcia's Universal Constructivist works will demonstrate how he integrated pre-Columbian symbols into abstract grids. Lam blended Surrealist dream imagery with metamorphic creatures from the Afro-Cuban santeria religion. Matta insisted on the internationalism of art yet found inspiration in Mexico's volcanos and Spain's literary heritage.

The exhibition will open in June 1992 at the Hirshhorn Museum and Sculpture Garden.

Science in the Age of Columbus

The exhibition "Science in the Age of Columbus" will display a facsimile of Columbus's 1493 letter to the Regents of Spain, along with books and manuscripts produced between 1450 and 1550. The exhibition will examine European scientific knowledge during Columbus's century.

The exhibition will include a Boethius manuscript, Regionmontanus's *Ephemerides*, a 1483 calendar, and books studied by Columbus, including incunabula editions (early printed books) of Strabo, Pliny, Aristotle, and Ptolemy. The exhibition also will display navigational tools available to Columbus. A section of the exhibition pertaining to the time period after the voyages, from 1505 through 1550, will demonstrate the explosion of knowledge resulting from the travels and from the interaction of scientists using both the printed word and observations of their own world.

The Libraries' Exhibition Gallery outside of the Dibner Library in the National Museum of American History will display this exhibition, organized by the Smithsonian Institution Libraries.

Global Image: The Process of Mapping

The voyages of Columbus have come to symbolize the beginning of a dramatically different perception of the earth. Five hundred years later, a new age of exploration has introduced an equally radical shift in perspective: seeing the planet from space. Maps are still a primary means of documenting new world views.



This Silver Globe Clock shows the five continents. Eric Fleming, from Atelier Borgila, Stockholm, Sweden, designed this table clock in 1930. The Cooper-Hewitt National Museum of Design received this gift from the Trustees of the Estate of James Hazen Hyde.

Changing perspectives—physical, cultural, and conceptual—are recorded and reinforced in maps.

In commemoration of the Quincentenary, the Institution will present "Global Image: The Process of Mapping" an exhibition, publication, and short film dealing with maps as documents of visual communication. Organized by the Cooper-Hewitt National Museum of Design, the exhibition will include about three hundred objects from the collections of the Cooper-Hewitt and other Smithsonian museums, with additional loans from public and private sources. The maps and atlases shown will appear in manuscript, engraved, and printed form, together with globes and a selection of related material. The exhibition will present maps as

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records of prevailing world views; as expressions of a sense of place; and as tools of description and discovery. The thematic, cross-cultural survey will consider the vantage point of the mapmakers, their cultural context, and the technology available to them.

Staff will develop educational programs for all ages, especially school children, with the aim of demonstrating how maps are a means of understanding the world, and our place in it.

The exhibition will open in the fall of 1992 at the Cooper-Hewitt National Museum of Design, in New York City.

American Folklife

The Festival of American Folklife features live traditional performers, dancers, musicians, artisans, and other cultural specialists. The Office of Folklife Programs (OFP) produces this living exhibition annually on the Mall during the last week of June and the first week of July. To commemorate the five hundredth anniversary of Columbus's voyage, a series of programs at the Festival will demonstrate living cultural expressions associated with New World societies.

In 1991, OFP will mount an exhibition on the Mall focusing on the indigenous populations of the Americas. Up to approximately one hundred fifty Native Americans will demonstrate the arts and skills that developed with the use of native crops and resources.

In 1992, exhibitions will concentrate on the interplay of Native American, African, European and Asian populations in the Americas; new crops introduced; new social systems; and the development of New World traditions. Performers will demonstrate and re-enact music, craft, culinary, and performance traditions associated with plantations, peasant societies, and family farming.

Traveling Exhibitions

In commemoration of the Columbus Quincentenary, the Smithsonian Institution Traveling Exhibition Service will distribute to communities around the United States original exhibitions that SITES and Smithsonian museums have generated.

- SITES will cooperate with the National Museum of Natural History to produce traveling versions of its major exhibition.
- "Portraits of Contemporary Mexican Artists" will profile Mexico's most influential creative personalities, showcasing several generations of living artists.



A painting from the traveling exhibition "Paintbrush Diplomacy: Children's Art from the Americas."

- "Borderlands" is a photographic exhibition that will look at the environment and ecology of the desert states that border Mexico through the lens of renowned naturalist photographer Tupper Ansel Blake.
- "Fred E. Miller: Photographer of the Crows" will document the Native American Indian tribe at a turning point in its history, 1898 to 1912, when Miller lived on the Crow reservation.
- SITES will present a supplemental exhibition based on "Where Next, Columbus?" in Seville, Spain, at the World Expo 1992. Accompanying the exhibition will be a ten- to fifteen-minute IMAX film combining footage from recent exploratory missions—such as Galileo, Magellan, and the Hubble Space Telescope—with the Columbus theme.

Smithsonian National Associate Program

Lectures, workshops, and performances acquaint Americans who live outside Washington, D.C., with the research and collections of the Smithsonian. Each year the Smithsonian National Associate Program (SNAP) sponsors events in twenty-five host cities.

As other Smithsonian bureaus develop Columbus Quincentenary activities, the National Associate Program will work closely with curators to produce complementary programs

geared to the needs and interests of host communities. Already planned are lectures and workshops focusing on Quincentenary-related public programs and exhibitions of the Hirshhorn Museum and Sculpture Garden, National Museum of American Art, and the National Museum of Natural History. SNAP also will cooperate with SITES to offer special programs in communities scheduled to display traveling Quincentenary exhibitions.

The Program is offering events co-sponsored by universities and museums in commemoration of the Quincentenary in both Spain and Latin America. This program has offered five series in collaboration with Catholic University in Santiago, Chile. Plans are under way to continue the series through 1991.

Media Events

The Buried Mirror

Scheduled to premiere in the fall of 1991, "The Buried Mirror: Reflections on Spain and the New World by Carlos Fuentes" is a Smithsonian television series that will explore Latin America, past and present, focusing on themes, institutions, beliefs, and symbols that have endured or changed. "The Buried Mirror" is a bilingual, multi-part series of one-hour television programs written and narrated by Carlos Fuentes. The documentaries seek to capture the many ways in which Latin Americans have seen themselves in the past and see themselves today.

With a format and style of epic sweep, the series will focus on relationships among countries and peoples of the Americas as well as with other cultures worldwide before and after 1492. Some highlights include:

- The one-hour program "The Virgin and the Bull" will examine the Spanish and Portuguese connection to the Americas and the Iberian and African roots of Latin American societies.
- "The Moving Frontier" will study pre-Columbian peoples in Latin America and their encounter with Europeans in 1492. This program specifically examines the Spanish conflicts with the Aztecs and the Incas.
- "The Conquerors Conquered" will look at European domination during the colonial period, the resistance of native peoples, and the evolution of a new Latin American identity.
- "The Other Side of Liberty" will focus on stories from Mexico, Chile, Brazil, and Argentina, and the rich cultural heritage of their peoples.

- “Five Hundred Years After” will profile the nineteenth and twentieth centuries in the Americas and the legacies of 1492.

“The Buried Mirror” also will portray the Hispanic presence in the United States providing a framework for understanding the nation’s growing Hispanic population in terms of economic, political, and cultural changes.

The Office of Telecommunications has joined with the Native American Public Broadcasting Consortium to develop a major radio series titled “Spirits of the Present: The Legacy from Native America.” Consisting of thirteen half-hour programs, the series will explore the Columbus encounter and its aftermath from the American Indian perspective.

“Spirits of the Present” will highlight contemporary issues as well as the historical record. Inherent in each program is the philosophy and vision of Native people today. Through interviews and cultural celebrations listeners will hear the voices of leaders, artists and writers, along with educators, politicians, anthropologists and community leaders. Ranging from Alaska to Brazil, the series will celebrate the diversity of Native American cultures.

Creating the series is a team of award-winning radio producers, led by a distinguished coordinating producer who is a Native American. “Spirits of the Present” will air on public radio nationwide in 1992. Plans also include creation of an educational packet for schools and universities.

Spirits of the Present

After 1992

Leading to the commemorations in 1992, the Institution has sponsored a variety of events and symposia involving scholars, government officials, and visitors from the United States and abroad. The purpose of such people-to-people exchanges is to establish relationships which serve to exchange information, create useful and good relationships among constituencies, and add to the Institution’s knowledge of cultural and environmental concerns of our hemispheric neighbors. Once the commemorations are over, the task of compiling resultant information remains.

The Institution projects an important and growing need for an institute of the Americas to continue to focus on museum training, exchange of staff, and the cross-fertilization of research efforts among the nation’s hemispheric neighbors and the Smithsonian.

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The institute will continue to invite scholars and policy makers from various nations in Latin America, Central America, and the Caribbean to the Institution to share their ideas and research perspectives on future options regarding cultural and ecological issues facing the hemisphere. The institute will provide a forum for communication of important information dealing with technical and quasi-governmental solutions to regional and hemispheric problems. The institute also will identify high priority issues of hemispheric concern and will organize project teams of an interdisciplinary and multi-cultural nature to study and recommend solutions for discrete issues.

The Smithsonian is committed to long term cultivation of a deeper public understanding of our neighbors and will dedicate the institute of the Americas to this purpose. The Institution will seek funding from a variety of sources to fulfill the mission of the institute. Only an ongoing concern, such as the institute, can sustain the living rapport created through commemorative programs, exhibits, and events, once the Columbus Quincentenary commemoration has come and gone.

Bringing Synergism to Contemporary Public Education

An important part of the overall mission of the Smithsonian is the obligation to offer educational opportunities through which the public can learn about the natural and civilizing processes of the world. Throughout its history, the Institution has pursued this educational objective through its scholarship, exhibitions, publications, seminars, lectures, and other programs.

In the early years of the Institution, the Smithsonian captured the public's imagination by sponsoring expeditions that mapped the West and by its efforts to study and understand the cultures of the North American Indian. The opening of the Castle (1855) and the Arts and Industries Building (1881) provided early visitors with their first visual experiences associated with the beginnings of the Institution's anthropological, botanical, fossilized and living animal collections, technological products, and historical artifacts of this country and others.

Over the years Institutional collections and research interests have diversified and grown to include the arts and humanities. Exhibitions and the facilities to house them have multiplied. The Institution created explicit education programs in the mid-1970s, and these programs have since embellished exhibitions and other public outreach activities.

Today, visitors of all ages, all cultures and countries, and all walks of life annually crowd the Mall and other Smithsonian buildings by the tens of millions for the opportunity to see and gain knowledge from varied exhibitions and complementary public programs. Researchers, students, collectors, and hobbyists glean information from the files, archives, and libraries, and from the collections themselves. On any day

"Why then does conventional, organized education pay so little attention to our kinds of research, to museum research, and above all to museum exhibits and education? . . . Today's education has degenerated into a temporary transfer of training and information. Much of the best of it is disguised as trade-learning, but trades themselves are thought to be demeaning. Professionalism in education is largely a fanciful conceit for officialism. Much teaching today is time serving and produces anomie rather than endowing the student with any sense of purpose. . . . Let us relive the American experience to remind us of our hard won birthright and to point the way to the enjoyment of our rights as citizens of the world, in that world's only environment, our temporary home, our sole stopping place short of the stars. Let us also join with others in pioneering studies on the creation and capturing of interest, on studies in cognition, on the ability to learn effectively, so that all of us, men and women of a country in which we believe truth still resides, can eventually achieve the age-old dream of our land, to be qualified through education for the enjoyment of our rights and for the performance of our duties throughout life."

— S. Dillon Ripley
Secretary of the Smithsonian,
1964–1984

On Museum Objects, Truth, and Education, 1971.

in the fall, winter, or spring, one can see dozens of buses of eager school children unloading, arriving with their books, bags and lunches in hand, ready for special tours and classes. At night, in building corridors adjacent to numerous rooms, one can hear the chatter of adults gathered during break-time to compare notes about the evening's lecture or course discussion. Itinerant events and exhibits around the nation draw upon Smithsonian collections, experiences, and expertise and attract capacity audiences. Exceeding two million, the circulation of *Smithsonian* magazine attests to its continued popularity among its general readership as an educational arm of the Institution. The Smithsonian also extends its educational mission throughout the United States and the world with programs for radio and television as well as books, sound recordings, and video discs.

These and numerous other signs provide ample evidence that the Institution continues to pursue its public education mission in a serious and responsible fashion. A certain educational synergy exists among the many parts of the Smithsonian that, while not always formally coordinated or centrally planned as parts of a coherent whole, works to the benefit of the citizens of the world and to the Institution.

How should Institutional management further harness this synergy? What lies ahead for the Smithsonian in the way of strengthening and honing established public educational pursuits and incorporating new approaches? The Institution is beginning to address those questions in several ways:

Early Enrichment Center pre-scholars learn about trees and plants in their playground along with a safety tip—DON'T EAT HOLLY BERRIES. (Photo by Rick Vargas)





Children from El Chorillo, part of Panama City, get the feel of a live seastar during a field trip to the Smithsonian Tropical Research Institute's Naos Marine Laboratory. (Photo by Marcos Guerra)

- First, this year Secretary Adams emphasized the role of public education in Smithsonian activities. He adopted an additional Area of Emphasis highlighting education at the Institution in order to help Smithsonian organizations focus upon the constituencies and challenges facing the nation's educational systems. The adoption of this Area of Emphasis resulted directly from several months of deliberation by an internal staff committee appointed by the Secretary in the fall of 1989. This committee, known as the Planning Advisory Group, recommended that the Institution not only place greater emphasis on education but undertake an investigation that would lead to the eventual articulation and implementation of a contemporary educational philosophy for the Smithsonian. An enunciated policy is a key ingredient in the process of choosing among future educational endeavors and channeling resources.
- Second, the Institution's Council of Museum Education Directors and the Council of Information and Education Directors developed independent reports. After reviewing historical and current educational ventures, these councils endorsed initiating efforts to clarify the Institution's future educational role and to seek new resources in the area of education. These recommendations dovetail with the

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SAO participates in Project STAR, a curriculum development program designed to improve the teaching of secondary school science and mathematics through examples from astronomy. (Photo by Steve Seron)



Secretary's emphasis on policy for planning and guidance in this area.

- Third, the Smithsonian is requesting increased federal support to begin to enhance educational departments and programs of the Institution. Included in the request are a variety of activities meant to strengthen federal educational resources sorely needed by some Institutional operations, such as the National Museum of American Art, the Cooper-Hewitt National Museum of Design, the National Museum of American History, and SITES. In particular, SITES, one of the Institution's most successful public outreach programs, plans to make Smithsonian exhibitions accessible to a wider audience of viewers.

Efforts to raise support from private and government funding sources for basic activities will continue in the future. Changes, such as developing new relationships with community institutions, especially school systems, depend on the availability of additional resources. Over the next several years, Institutional management will select from and seek funding for a number of project proposals from various Smithsonian museums and departments to advance the objectives contained in the Areas of Emphasis.

Institutional management is deliberating now on the next practical steps to take to further the Institution's educational contributions to the nation and to refine and redefine the Smithsonian's future educational role. Regardless of the specific

results of the ensuing investigation, the management steps chosen will most assuredly reinforce the emerging international character of the Institution, the traditional importance of collections and research, the growing diversity of Smithsonian audiences, and the demands of changing exhibitions with their associated technology and interpretive techniques.

State of Smithsonian Public Programs

Exhibitions, objects, tours, seminars, publications, catalogues, and other tools constitute the means by which the Smithsonian reaches its diverse audiences. They form the basis for the Institution's public programs, and provide the context for the general public to learn about historical and contemporary subjects vital to understanding major issues at work in today's world. These issues span such topics as: the research needed to solving environmental degradation; the importance of further advances in technology; and the contributions of many cultures to science, art, and the humanities.

The Smithsonian directs its public programs to individual learning interests, allowing for visual and tactile experiences, and frequently involving families, friends and classroom companions. The Smithsonian improves its public educational programs by incorporating new media, publication, exhibition, and other techniques. Changing public interests sustain the process of improvement.

The Institution is working more closely with communities to identify their educational needs, and to interest them in Smithsonian offerings. The Smithsonian collaborates with teachers and elementary and secondary school systems across the country to develop hands-on science programs for students. The Smithsonian

Institution Traveling Exhibition Service will reorganize and reformulate products to assist smaller organizations in reaching under-served audiences.

The Institution has established a new experimental gallery that provides a showcase for innovative exhibition formats and a forum for studying audience reaction. The Institution tries out portions of exhibitions on the public in special viewing areas using the latest technologies. The Institution will experiment with theatrical and visual presentations bringing to life important ideas and epochal events.

In spite of efforts to improve public programs, there remain obstacles. The Institution needs to improve and strengthen outreach efforts to handicapped persons, senior citizens, minorities, and other cultural groups. Education departments throughout the Institution are understaffed and inadequately funded relative to the work that must be done to improve the quality and quantity of educational activities throughout the Institution.

The Institution will continue to apply current resources to public educational activities. In addition, the Smithsonian will persevere in efforts to strengthen its education and other public services and urges public spirited individuals to join the quest.

Institutional Funding Goals—Operations

When James Smithson, the English scholar and scientist, died in 1829, his will stipulated that the whole of his property—an amount equivalent to \$508,318.46 at the time—would be left “to the United States of America, to found at Washington, under the name of the Smithsonian Institution, an Establishment for the increase and the diffusion of knowledge among men.” In so doing, Smithson created a charitable trust, under the terms of which the United States would serve as trustee for the benefit of all mankind. By an Act in 1836, Congress accepted Smithson’s bequest and pledged the “faith of the United States” to carry out its purposes. In 1838, the funds from the Smithsonian estate, consisting of 105 bags of gold sovereigns, reached the port of Philadelphia. This was a fortune at the time, equal to one and one-half times the federal budget of the young nation.

Today, the total operating budget of the Smithsonian is \$559 million, with approximately 54 percent emanating from the Institution’s trust activities. Congress provides operating appropriations for many of the core security, building and facility maintenance, exhibition production, and research and collections

management programs. Appropriations fund major new construction and, to a large extent, building refurbishment and alteration. The Institution’s trust auxiliary enterprises, gifts and grants from public-spirited donors, and government grants and contracts enhance these core activities. Trust funds provide the seed capital for innovative ventures, especially in research, experimentation with new ideas and approaches to public education, exhibition techniques and methods, and collections acquisitions.

The Smithsonian faces uncertainty regarding future funding. As the nation continues to struggle with balancing the federal budget, competition for donor funds increases and the general economic climate undulates. The Institution, however, is looking ahead with optimism. There is merit in doing so and in communicating to the executive and legislative branches of government, potential donors, and others the Smithsonian’s basic desire to grow. Indeed, if it is to continue to be successful in meeting its responsibilities to the public, the museum and

“The Smithsonian has now come to a time when, without the support of the Nation, it can no longer continue to be what [Joseph] Henry made it. And yet the need for just such an Institution as it has been is no less than the need was 80 years ago. In some respects the unique opportunities are even greater. This Institution is not the product of the moment; 80 years of the toil of great men have gone into its making. There is that about it which cannot be replaced.”

— William Howard Taft, Chief Justice of the Supreme Court

In the *Smithsonian Annual Report*, 1927.

Smithsonian Institution

Growth in Operating Requirements

Fiscal years 1981 – 2000 in millions of dollars

	Federal Salary & Expenses	Unrestricted & Special Purpose Funds	Restricted Funds	Government Grants & Contracts	TOTAL
1981	\$122	\$98	\$6	\$14	\$240
1982	131	107	7	13	258
1983	147	115	9	13	284
1984	157	129	10	15	311
1985	164	155	10	16	345
1986	169	170	13	16	368
1987	189	188	17	16	410
1988	201	209	26	17	453
1989	211	220	30	21	482
1990	225	228	28	29	510
1991	258	245	31	40	574
1992	292	250	24	36	602
1993	370	264	30	36	700
1994	388	277	31	37	733
1995	407	290	32	37	766
1996	428	302	33	38	801
1997	455	316	34	38	843
1998	481	333	34	39	887
1999	509	347	35	40	931
2000	538	362	36	41	977

Smithsonian Institution Growth in Operating Requirements

Fiscal years 1981 – 2000 in millions of dollars

Government Grants & Contracts

Restricted Funds

Unrestricted
& Special Purpose
Funds

Federal Salary
& Expenses

1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000

\$1,000

900

800

700

600

500

400

300

200

100

0

scholarly communities, and the nation, the Smithsonian must look ahead.

The Institution's aggregate funding projection, illustrated in the preceding chart, builds on current budget expectations, historical results, and the plans of each museum director and program manager. The forecast presents a reasonable federal appropriations trend consistent with past experience and incorporates successful results from expanded fund-raising endeavors and continued good performance by revenue producing enterprises. The Institution revises the projections as new information becomes available.

This chapter describes the major sources of operating funds for the Smithsonian. Projections of federal funds for capital improvement appear in a separate chapter.

Appropriated Funds

The federal government appropriates funds to the Smithsonian in separate accounts that correspond to specific budget categories within the Institution:

- Salaries and Expenses (S&E);
- Repair and Restoration of Buildings (R&R);
- Construction and Improvements, National Zoological Park; and
- Smithsonian Construction.

The Salaries and Expenses (S&E) appropriation, the Smithsonian's core operating budget, meets the basic costs associated with: research in the fields of art, science, and history; preservation and documentation of the national collections; production and presentation of public exhibitions and performances; collection, preparation, and exchange of scholarly information and publications; conducting education, training, and museum assistance programs; administration; and maintenance, alteration, operation, leasing, and protection of buildings and facilities.

In fiscal year 1981, salaries and expenses appropriations covered operating expenses of \$122 million. By 1990, appropriations were \$225 million, including operations in the new Quadrangle facility housing the National Museum of African Art, the Arthur M. Sackler Gallery, and the S. Dillon Ripley International Center. At the turn of the century the expenses are projected to be \$538 million. This forecast includes preliminary projections for the National Museum of the American Indian, resources for acquisition and operation of an Administrative

Support Facility, the effects of expected Congressional federal pay actions, and inflationary factors.

Nonappropriated Funds

The Institution is ever mindful of its traditions but must also respond to contemporary needs and opportunities. The Secretary's Areas of Emphasis specifically include the pursuit of "initiatives that permit growth in endowment and operating funds." Nonappropriated funds from various sources are vital to Smithsonian activities.

The Institution derives nonappropriated trust funds from several sources including:

- Earned revenue from auxiliary and other business activities;
- Investment income earned on balances of the various types of nonappropriated funds;
- Gifts and grants received from individuals, corporations, and foundations; and
- Federal grants and contracts supporting specific research or other projects.

Trust funds were approximately \$104 million in fiscal year 1981 and by the turn of the century, these funds are projected to total approximately \$398 million. Government grants and contracts supporting specific research projects were \$14 million in fiscal year 1981 and are forecast to total \$41 million by the year 2000. The anticipated awards primarily will support high-energy astrophysics and solar physics research.

To help meet the need for increased private funds in future years, the Institution encourages individual museums and offices to pursue direct support for their programs. The Office of Membership and Development will solicit funding for existing pan-Institutional projects such as the many fellowship programs, Scholarly Studies, Collections Acquisition, Special Exhibition and Educational Outreach funds and the Columbus Quincentenary commemoration. The Office has planned a series of programs in major cities across the country, in Europe, and Japan to introduce the Institution to a larger pool of possible supporters.

The Smithsonian National Associate Program (SNAP) provides the Associate members and the general public with high quality, educational experiences in subjects relating to the Smithsonian and encourages support for the Institution's work.

Membership and Development Activities

The enthusiastic participation of its national constituency enables SNAP to meet its outreach goals and raise monies for unrestricted trust funds through surpluses generated from educational tours, research expedition programs, lectures, workshops, and seminars as well as through corporate and individual giving programs, including the Contributing Membership Program, James Smithsonian Society, and the Corporate Associate Program. By 1992, SNAP's Contributing Membership Program anticipates over 66,000 members and the Corporate Associate Program over 140 members.

The Resident Associate Program (RAP) is a membership and activity supported continuing education, cultural, and outreach arm of the Smithsonian Institution for metropolitan Washington. RAP's educational and cultural curriculum deals with all facets of the arts, humanities, and sciences, drawing upon and complementing the Institution's permanent collections, research, and exhibitions activities. RAP is committed to the community and provides many and varied programs to serve it: scholarships for inner-city young people and adults to attend RAP courses tuition-free; Discover Graphics, the free program of instruction in printmaking for public high school students and teachers; Tuesday Mornings at the Smithsonian, the lecture and breakfast series for senior citizens; and Discovery Theater, a low-cost theater for children and families offering live dramatic, musical, and puppet performances; and the annual Kite Festival on the Mall. The Resident Associate Program currently serves a membership exceeding 61,000 households. The Program is actively attracting increasing participation by the African-American community through its Afro-American Studies department. RAP expects to enhance its already existing American Indian programming as the National Museum of the American Indian takes shape.

One of the most popular and successful Associate member benefits established by the Institution is the *Smithsonian* magazine. Acutely aware of the vicissitudes of publishing, the magazine's management nonetheless expects demand for its product to remain strong. Revenues from the magazine meet the cost of production first, with net proceeds distributed to unrestricted trust funds. The Institution continues to support the *Smithsonian/Air and Space* magazine which explores human endeavor in flight and in exploration, science, and research within the atmosphere and beyond.

Publication Program

The Smithsonian Institution Press (SIP), a member since 1966 of the Association of American University Presses, designs and

produces exhibition catalogs, educational pamphlets, and informational leaflets that serve the Institution's millions of visitors and its extensive programs. The Press publishes high quality scholarly and general interest books, together with recordings that preserve significant developments in the history of American music. SIP's customers include libraries, museums, scientific institutions, and the general public. The Press expects to continue to perform successfully with some net gains each year from the production and sales of its products.

The Smithsonian has provided sales desks since the 1860s, offering a diverse array of Institution-related products. Each item offered for sale in a museum shop must relate to the collections, be appropriate to the museum where sold, and conform to high standards of quality and taste. Exhibition catalogs, other publications consonant with exhibition themes, and works by Smithsonian scholars are available in the museum shops. Other offerings include reproductions of three-dimensional artifacts, handicrafts, and educational materials for children.

From the original sales desk in the Castle, the Institution has expanded the Smithsonian experience to reach people of all ages without regard to their geographic distance from the Mall. The Mail Order Division publishes and distributes several catalogs each year to Associate members. These catalogs offer special items that reflect Smithsonian collections and programs. In addition, the Product Development and Licensing Division produces and markets reproductions and Smithsonian-related product lines with major manufacturers.

The Institution also refreshes visitors with restaurant facilities in major Smithsonian museums, including an old-fashioned ice cream parlor in the Museum of American History. The National Air and Space Museum has a cafeteria seating eight hundred and a full-service restaurant on the mezzanine level. The Commons, in the Castle, is open to Contributing Members and Smithsonian staff. Other income-producing activities run by concessionaires are the popular carousel and popcorn wagons on the Mall, and the shop, restaurant, and parking facilities at the Zoo.

Several museums of the Institution conduct activities that extend their continuing educational mission and provide a surplus of funds which help finance fellowships, collections acquisitions, guest lecturers, symposia, and special events. Most notable are the Langley Theater and the Planetarium at the National Air and Space Museum.

**Auxiliary and Other
Business Activities**

Institutional Funding Goals— Capital Outlays

Repair and Restoration of Buildings

The Smithsonian's responsibility for its museum buildings and other facilities requires a continuing program of repair and maintenance—which the staff accomplishes in part with funds from operating budgets—and renovations and restorations. The objectives of the Repair and Restoration program are to provide efficiently operated, safe, and accessible facilities for research, education, and care of collections. Maintenance and preservation of facilities to ensure their long-term operation is one of the Institution's highest priorities. This priority reflects the Institution's great concern for the condition of its buildings, many of which appear on the Register of Historic Landmarks.

The Repair and Restoration of Buildings (R&R) account funds building repairs, restoration, and remodeling to bring buildings into compliance with life-safety and health regulations and to replace or renovate major building equipment or components. This effort is a substantial one because the Institution's buildings and facilities (other than the Zoo) consist of fifteen museums and galleries in Washington, D.C., and New York City; facilities at Suitland, Maryland, and New York City for the preservation and storage of collections; centers for biological research, conservation, and education in the Republic of Panama and on the Chesapeake Bay; a center for astrophysics in Cambridge, Massachusetts; and the Whipple Observatory on Mt. Hopkins near Tucson, Arizona.

In past years, funding for maintenance, repair, and preservation of buildings has not kept pace with need, resulting in a currently identified backlog of \$216 million in repair and restoration requirements. The R&R program will require approximately \$35 million of annual funding throughout the next ten years in order to make progress in eliminating the backlog.

During the next five years the Institution will address a number of major problems including:

- Installation of fire detection and suppression systems required throughout Smithsonian buildings to meet current fire codes;
- Removal or containment of dangerous substances, such as asbestos, remaining in many buildings;

SMITHSONIAN INSTITUTION

Repair & Restoration of Buildings

Fiscal Years 1991–1996
(Millions of Dollars)

BY MAJOR CATEGORY

	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996
Repair, Restoration & Code Compliance						
General Repairs	\$ 4.3	\$ 2.6	\$ 3.0	\$ 2.5	\$ 2.8	\$ 1.6
Facade, Roof & Terrace Repairs	3.8	3.6	10.3	1.9	2.8	2.2
Fire Detection & Suppression	0.9	1.6	0.4		0.2	
Access, Safety & Security	2.8	4.2	2.1	2.2	2.4	1.1
Utility System Repairs	4.5	5.0	1.4	3.8	1.5	0.7
Advanced Planning & Inspection	1.0	2.1	2.8	2.7	2.7	2.2
Subtotal	17.3	19.1	20.0	13.1	12.4	7.8
Major Capital Renewal	13.9	12.5	16.5	22.4	25.0	28.9
TOTAL FOR R&R	\$31.2	\$31.6	\$36.5	\$35.5	\$37.4	\$36.7

BY BUILDING

	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996
National Museum of American History	\$ 5.4	\$ 7.1	\$ 3.6	\$ 2.4	\$ 0.8	
National Museum of Natural History	10.2	6.6	13.0	14.1	13.1	13.1
Smithsonian Institution Building	0.8	0.1	0.3	1.1	0.2	4.2
Arts & Industries Building	0.4	0.5	0.7	8.0	7.6	7.7
American Art/Portrait Gallery	0.2	0.3		0.3	3.2	2.4
National Air & Space Museum	3.3	2.1	9.7	0.4	3.8	3.7
Renwick Gallery	0.3	0.7	0.3			
Freer Gallery of Art	1.7	2.2		0.2		
Silver Hill Facility	0.3	0.4	0.5	0.9	0.8	0.6
Environmental Research Center	0.1	0.4	1.3	0.3	0.6	0.2
Hirshorn Museum & Sculpture Garden	0.7	1.5			1.1	
Anacostia Museum	0.2		0.1	0.1	0.1	0.1
Smithsonian Tropical Research Institute	0.5	1.0	0.2	0.3	0.2	0.2
Smithsonian Astrophysical Observatory	0.5	0.7	0.6	0.5	0.4	0.3
Cooper-Hewitt Museum	3.0	1.3	0.4	0.8	0.1	0.1
Museum Support Center	0.2	0.8		0.6		0.1
National Museum of the American Indian		0.2	0.1	0.1	0.7	0.1
Miscellaneous	3.4	5.7	5.7	5.4	4.7	3.9
TOTAL FOR R&R	\$31.2	\$31.6	\$36.5	\$35.5	\$37.4	\$36.7

- Repair or replacement of roofs, skylights, and windows at several buildings; and
- Replacement of electrical systems and of heating, ventilating, and air conditioning (HVAC) systems at the Natural History, American History, Arts and Industries, and American Art and Portrait Gallery buildings.

The R&R account consists of two subaccounts: Repairs, Restoration, and Code Compliance and Major Capital Renewal.

Repairs, Restoration, and Code Compliance

This subaccount funds routine repair and restoration including: general repairs; facade, roof, and terrace repairs; fire detection and suppression; access, safety, and security; utility system repairs; and advanced planning and inspection for such projects. During the next five years, the Institution will seek funding to eliminate the backlog in these projects.

Major Capital Renewal

During the next five years, a number of the Institution's historic buildings will reach the age at which the Institution must undertake cyclical renewal of building components and systems such as the heating, ventilating, and air conditioning systems. The majority of the HVAC equipment is now more than twenty-five years old and requires replacement to avoid system failures. Unless the Smithsonian pays extraordinary attention to the specific needs of its older buildings now, the Institution increases the possibility that equipment and systems failure may require the closing of significant portions of buildings dedicated to exhibitions, collections storage, and research activities. The Institution has undertaken a significant portion of this cyclical renewal, but further analysis of the condition of the Smithsonian's older buildings served to increase the estimated backlog.

Projects in this category involve replacing major building systems and components that have outlasted their useful lives. Complete replacement ensures long-term operation and preservation of the building. Modifications of the building also improve energy efficiency, meet fire detection and suppression requirements, and correct hazardous conditions. By grouping these tasks together, the Institution saves money and avoids repeated disruption to building activities. The Institution must relocate staff and collections from the areas under construction to prevent damage and to allow staff to continue working during the construction period.

Following are examples of current and planned Major Capital Renewal projects.

In 1982, a study of the HVAC system of the American History Building recommended replacement of the deteriorated HVAC and refrigeration equipment and controls in the now twenty-five-year-old building. This will ensure continued energy efficient climate control. The Museum will isolate the vertical segments of the building and work simultaneously on fire protection, asbestos removal, and HVAC replacement. The Museum will synchronize its exhibition reinstallation and other activities with this renovation to take maximum advantage of the down-time in each area of the building. Work began on the project in 1987, and the Museum expects to complete the project in 1992. A subsequent project will replace systems in the basement.

**HVAC System,
American History
Building**

Over the past several years the Institution has undertaken separate studies of energy conservation, fire protection and suppression, communications, security upgrading, asbestos abatement, and other measures to remedy building deficiencies, especially in the HVAC and electrical systems of the Natural History Building. The studies revealed that the building requires extensive work, and managers have developed a schedule that will economically sequence construction while limiting major disruption of the Museum's activities. The Institution proposes constructing a new building in the East Court to provide permanent additional space for the Museum's current activities. The Museum will use this building as staging space during renovation, to allow relocation of staff and collections affected by renovation while work is in progress.

**HVAC and Electrical
Systems, Natural
History Building**

The principal component of the renovation project is the replacement of the HVAC and major electrical equipment in the building, including the automatic temperature-control system. Ninety percent of the electrical lighting and power panels are at or near the end of their useful life. The main high-voltage switchgear equipment serving the transformers for the Natural History, as well as the Freer Gallery, Arts and Industries, and Smithsonian Institution buildings, is approximately forty years old. The Institution must replace these and related electrical components because spare parts are unavailable. The Institution will incorporate fire protection modifications into the project, along with removal or encapsulation of asbestos insulation in the attics and on equipment, duct work, and piping throughout the building. In addition, modifications will include energy

conservation improvements. The Museum will coordinate the exhibit reinstallation program with the renovation project.

Utility Tunnels, Arts and Industries Building

One of the finest examples of Victorian architecture in the nation, the Arts and Industries Building, originally designed to house representative artifacts of the Philadelphia Centennial Exposition, also needs extensive repair. Like the building itself, the underground utility trenches located within the building date from 1881. The tunnels are small and provide minimal or no access to the piping and electrical circuits within them making inspection, maintenance, and alterations difficult and costly. Asbestos insulation covers some pipes within the tunnels. The Institution must renovate these utility tunnels before it can refurbish the HVAC, electrical, and other utility systems now reaching the end of their useful life.

HVAC System, American Art and Portrait Gallery Building

The twenty-five-year-old HVAC system in the American Art and Portrait Gallery Building is in poor condition, and the Smithsonian must replace it to ensure continued service. While renovating the HVAC, the Institution will improve the building to foster the environmental conditions necessary to preserve the collections housed in the building. These improvements will, for example, provide more precise control of humidity and provide building technicians with the capacity to operate the heating and cooling systems simultaneously during the transitional seasons to maintain appropriate temperatures. In addition, the phased project will include repair or replacement of all windows with double-glazed windows and the installation of waterproofing and of water-detection systems.

State of Smithsonian Facilities

The Institution is responsible for the operation, repair, restoration, and long-term preservation of the extensive and aging physical plant encompassing over two hundred buildings of various sizes and types and totalling more than 5.5 million square feet. Many of the buildings are monumental in size and are National Historic Landmarks. The Institution faces dilemmas with regard to its facilities that are familiar to other major museums, institutions of higher learning, and public and private organizations nationwide. Aging facilities, increasing construction, maintenance and energy costs, and the need to update building systems to comply with federal and local regulations have stressed resources available for construction, replacement, and repair of buildings. With changes and growth in demands for public programs, personnel, and scholarly research, competition for Institutional resources have placed facility requirements in a precarious position.

The Smithsonian Institution faces two major challenges in the coming years with respect to its facilities. The first challenge is keeping up with the repair requirements of these buildings. The high wear-and-tear from heavy visitor traffic and continuous operation of environmental systems exacerbates the natural aging process of building materials and components. Life-safety, health, and disabled access deficiencies require correction to meet current codes. A backlog exists of over \$200 million in repairs, restoration, and code compliance work. At stake in the phased elimination of this backlog is the continued leadership of the Institution in its public programs, collections management, and research endeavors and its stewardship

responsibilities for the Smithsonian's current facility assets. The Institution has developed a strategy for eliminating this backlog over the next decade, and the Regents, the Office of Management and Budget, and Congress have made significant commitments to sustain funding necessary to achieve this goal. Only with continued financial support can the Institution keep its existing physical plant in good working order and preserve its historic legacy for future generations.

The Smithsonian's second challenge is to provide space in which its varied and changing programs can function effectively. Program vitality depends on the ability to keep pace with requirements for new or modified space for collections storage and management, exhibitions and educational activities, and research and support services. The Smithsonian currently experiences a serious shortage of space in which to carry out its mission fully. The space problem is particularly acute in the area of collection storage. The Institution has to store a majority of its enormous wealth of objects that document the natural world and man's history, art, culture, and achievements in overcrowded conditions. Much of the collections-storage space does not meet the environmental requirements necessary to ensure long-term preservation of the collections. The poor conditions contribute to deterioration of the objects and prevent staff and other scholars from working with and studying the collections. The Smithsonian's long-term goals for capital expansion include projects that will address the space requirements most essential for continued success of its programs.

Construction

The Institution has numerous construction projects currently underway or projects that will begin shortly at facilities on the Mall, in the State of Arizona, and in the Republic of Panama. In fiscal years 1991 and 1992, the Institution will complete alterations of the Freer Gallery, including the construction of the tunnel linking the Freer with the Sackler Gallery, expansion of storage space, and renovation of the basement and gallery levels. The Smithsonian will also complete a new base camp at the Whipple Observatory and research and support facilities at several sites of the Tropical Research Institute. The Institution will begin design and construction of facilities for the new National Museum of the American Indian and an expansion of the National Museum of Natural History.

The Smithsonian continues to implement the master plan for the National Zoological Park. The Zoo is repairing, altering, and improving the plant property; constructing additions and minor new facilities including exhibits; and preparing plans and specifications for further construction. The Zoo has developed a five-year construction and improvement schedule for both the Rock Creek facility and the Conservation Center at Front Royal.

Plans for facility development in the coming years represent a major investment in the Institution's long-range program goals. The Smithsonian has a growing requirement for physical plant expansion and modification to support program needs. The total estimated cost, excluding nonappropriated sources of funds, of the comprehensive construction program for the next decade is in excess of \$700 million; the anticipated cost for construction and improvements for the National Zoological Park is over \$130 million. Through realization of these plans, the Institution will remain vital in far-reaching programs of research, collections management, public exhibitions and education, and other services.

The following sections present the key elements of the planned construction program in the next decade.

National Air and Space Museum Extension

The National Air and Space Museum currently faces a critical facilities shortage that threatens to cripple its basic collecting and exhibition programs. The Museum exhibits and stores its collection of aircraft, spacecraft, and related artifacts in the Mall building and at the Paul E. Garber Facility in Suitland, Maryland. These buildings are filled to capacity, despite deliberate steps to

Long Range Construction Plan (Federal Appropriations for Scheduled Projects)

Fiscal Years 1991–2000* (Millions of Dollars)

	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
FY 1991 – 2000 Cost										
Air and Space Museum Extension ¹			\$ 8.0	\$ 99.0			\$ 6.0	\$ 100.0		
<i>American Indian Museum</i>										
Custom House Renovation ²	\$ 7.4	\$ 1.4								
Suitland Collection Storage ³	\$ 43.7	\$ 1.0	\$ 1.0	\$ 29.7	\$ 12.0					
Mall Museum Building ⁴	\$ 70.0	\$ 1.0	\$ 6.4			\$ 52.2	\$ 10.0			
<i>Subtotal American Indian</i>	\$ 121.1	\$ 2.4	\$ 7.4	\$ 29.7	\$ 12.0	\$ 52.2	\$ 10.0			
Suitland Collections Research Center ³	\$ 187.0		\$ 0.5	\$ 4.5	\$ 56.0	\$ 13.0	\$ 50.0	\$ 10.0	\$ 3.0	\$ 50.0
General Post Office Building ³	\$ 75.0	\$ 1.7	\$ 38.3					\$ 2.0	\$ 30.0	\$ 3.0
Natural History East Court In-fill ⁵	\$ 30.0	\$ 15.0	\$ 13.5							
Tropical Research Institute	\$ 3.6	\$ 1.6	\$ 2.0							
Alterations & Modifications	\$ 63.3	\$ 4.0	\$ 7.5	\$ 7.9	\$ 7.8	\$ 7.1	\$ 6.0	\$ 6.0	\$ 6.0	\$ 6.0
Construction Planning	\$ 14.0	\$ 1.0	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5
Scheduled Projects Grand Total	\$707.0	\$25.1	\$78.7	\$142.6	\$77.3	\$73.8	\$73.5	\$119.5	\$40.5	\$60.5

*Note: This table does not include planned National Zoological Park Construction and Improvements. Estimates are subject to revision as a result of timing associated with Smithsonian and Office of Management and Budget planning/budget cycles, and incorporation of more detailed planning information. This table also does not include the planned acquisition of an Administrative Service Center through lease purchase or similar means.

¹The Institution will phase development in several increments requiring twenty or more years for completion. Fund raising and state contribution will provide an additional \$55 million for the initial phase.

²The Institution will generate additional funding of approximately \$16 million from other sources; \$1.7 million in FY 1992 S&E for furnishings.

³Very preliminary estimate.

⁴Very preliminary estimate. FY 1991 includes general planning of all facilities. Fund raising will provide an additional \$35.3 million for construction.

⁵The Institution requires this construction project to facilitate completion of the planned mechanical renovation project expected to cost approximately \$100 million.

limit the growth of the collection. The enormous size of contemporary aircraft and spacecraft also prohibits the Museum from adding important artifacts to its collection because it is physically impossible to transport them, even dismantled, to existing facilities. The advanced age and deterioration of the Suitland buildings jeopardizes long-term preservation of the Museum's existing collection. Many of the approximately twenty-three metal structures date to the 1940s and early 1950s and have an estimated life span of less than ten to fifteen more years. A number of the buildings do not provide climate control necessary for preservation of fragile materials.

In addition to storage problems, artifact size has dictated exhibit limitations as well. The Museum cannot display a number of important aircraft and spacecraft already in the collection because they are too big and/or too heavy for the Mall building. Because the current buildings cannot accommodate larger contemporary aircraft and spacecraft, the Museum cannot convey to the public the evolving social impact and policy issues exemplified by these artifacts.

The Institution has long recognized that an Air and Space Museum Extension at or near an airport in the Washington area would best meet the physical requirements for storage and exhibition of contemporary aircraft and spacecraft. Such a facility, located and constructed to accommodate large-scale artifacts, would provide the context in which to communicate complex themes of social, environmental, and policy change ushered in by their use.

Congress is currently considering legislation authorizing the Institution to plan and design the Air and Space Museum Extension.

National Museum of the American Indian

The Institution plans to construct a new museum building, the National Museum of the American Indian (NMAI) on the last remaining site on the Mall. Congress reserved this property, bounded by Third Street, Maryland Avenue, Fourth Street and Jefferson Drive, for future activities of the Smithsonian (P.L. 94-74, approved August 8, 1975). The Institution also will build a conservation, collections storage and research facility on Smithsonian land in Suitland, Maryland, and will operate a satellite exhibition and education center in a portion of the Old United States Custom House in New York City. The Institution anticipates a federal appropriation for construction of the new facilities and also is seeking support from private sources.

Collections Research Center

The Institution has, for a number of years, experienced a severe shortage of space in which to store, document, and conserve its collections. The Museum Support Center opened in 1983 and the proposed Air and Space Museum Extension will provide space to solve the most immediate storage needs for natural history and aerospace collections. The Institution urgently needs space, however, to ensure the continued vitality of the collection-based research and collections-management programs of other Smithsonian museums and bureaus. The Institution has begun documenting its immediate and long-term needs for additional space to house growing collections in history and art, as well as important archival and library collections. The Institution expects to need almost three million square feet of new storage and collections-management, conservation, and research support space over the next twenty years.

The age and condition of the present storage buildings at Suitland exacerbate the space requirement problem. Among the structures at the Institution's storage facility are temporary, metal buildings which provide 115,000 square feet of storage space for the National Museum of American History. Most of these buildings have a life expectancy of less than ten to fifteen more years. Since half the National Museum of American History collections, exclusive of stamps and coins, reside there, it is essential to have facilities ready in the next decade or so to ensure that the national collections have proper housing. Other museums, as well as archival and library bureaus, have a serious shortage of appropriate collections-storage facilities. Overcrowding in the Mall museums has caused several museums and bureaus to move collections into leased space off the Mall to avoid damage to and deterioration of sensitive materials from excessive crowding. A number of these locations, as well as many of the Suitland buildings, do not provide environmental conditions suitable for long-term preservation of museum artifacts.

A recently completed study determined that land is available on the Smithsonian's Museum Support Center property in Suitland, Maryland, on which to build facilities to accommodate the identified requirements. The Smithsonian plans to sequence construction of a new Collections Research Center at Suitland over the next ten to twenty years. Space will also be available on adjacent land, once the Paul E. Garber Facility is dismantled, that could provide three to five million additional square feet of space for growth of the collections and support services well into the next century.

General Post Office Building

In 1984 Congress authorized the transfer of the General Post Office Building from the General Services Administration to the Smithsonian. The General Services Administration will transfer custodianship of the building when the Institution receives funding to renovate it for museum use.

America's first native-born professional architect, Robert Mills of South Carolina, designed the original wing. Mills also designed the Patent Office Building, the Washington Monument, and the Treasury Building. The General Post Office Building, bounded by Seventh, Eighth, E, and F Streets in northwest Washington, D.C., is the fifth oldest public building in Washington and has never undergone renovation or restoration.

The Institution is concerned about the long-term preservation of this historic landmark and plans a comprehensive program of restoration and repairs to make the building usable for Smithsonian activities directed at scholarship in the field of American art. In addition to old and deteriorated building systems and exterior components, a number of hazardous conditions require early renovation.

National Museum of Natural History, East Court Building

The Natural History Building on the Mall is the center of numerous activities that support the Institution's basic mission to increase and diffuse knowledge. Over one hundred fifty scientists and their staffs, and over two thousand visiting scientists annually conduct basic and collections-related research of critical importance to the advancement of scientific knowledge and understanding of natural phenomena. Exhibitions communicate a range of themes in the natural sciences to millions of annual visitors. The Museum also houses extensive collections, educational and public service activities, and administrative and support staff. In order to accommodate the growth in the staff, the Museum has repeatedly partitioned offices and laboratories into smaller and smaller spaces. Two exhibit halls, dismantled several years ago, remain closed to accommodate staff activities. The relocation of part of the collections to the Museum Support Center will provide some additional space, but not enough to maintain the best conditions for the Museum's diverse programs.

The complete renovation of the HVAC, as well as electrical systems, in the building will exacerbate the space problem at the Natural History Building over the next decade. The Museum will have to find temporary staging space to house its programs and collections during this renovation. Use of exhibit space for this

purpose would close many of the public exhibitions for ten years, and leased space would provide appropriate facilities only at a very high cost.

The Museum plans to alleviate its space problems by building a new structure in the east court of the Natural History Building. The new building will provide about eighty-thousand square feet of staging space for laboratories, offices, and collections during the HVAC renovation and will allow permanent redistribution of staff and collection areas at the end of the construction period. The Institution will begin the design phase in fiscal year 1991.

Smithsonian Tropical Research Institute

The Smithsonian Tropical Research Institute located in the Republic of Panama, is the nation's principal center for tropical biology. Most STRI facilities include buildings constructed in the 1920s and 1930s and renovated structures obtained from the U. S. military and other agencies. In 1986 the Institution completed a master plan to guide a comprehensive program to improve STRI's facilities and to support the Smithsonian's long-range scientific goals. The Institution is now constructing new facilities in a number of locations to replace the most inadequate and dilapidated ones. The Tupper Laboratory and Conference Center was dedicated in Spring 1990 at the headquarters site in Tivoli. The Institution is building new laboratory, dining, conference, residential, and docking facilities on Barro Colorado Island. The Smithsonian will begin relocating and upgrading the Atlantic research field station and facilities in the San Blas archipelago and will purchase and equip a new floating laboratory. STRI plans to



Glenn Tupper cuts the ribbon to officially open the Tropical Research Institute's Earl S. Tupper Center, named in honor of his father. (Photo by Marcos Guerra)

build a new workshop and maintenance facility at Tivoli to provide a central location for ongoing maintenance of its buildings and its fleet of vehicles and boats.

Administrative Service Center

Over the past fifteen years, the Smithsonian has consolidated a number of scattered special purpose, warehouse, and light industrial support activities in a single leased location at 1111 North Capitol Street, N.E., in Washington, D.C. Now, two factors have prompted the Institution to acquire a replacement for this leased facility. First, the current lease expires in the fall of 1992, and the present building owners are actively seeking to sell this property because of its significantly increased value as an office building site. Second, a thorough review of Institution support activity space requirements indicates that a larger Service Center is now needed to accommodate the current operations and continue the policy of reserving space on the Mall for public programs and research.

Preliminary review of possible replacement facilities indicates that a number of lease arrangements or options for future ownership may be available. Although the Institution does not anticipate relocating before 1993, the management is seeking federal support for planning, design and consultant services, and other one-time costs that are anticipated.

Construction Planning

An essential part of an effective facilities development program is the ability to assess requirements and make detailed long-range plans. A comprehensive long-range planning program identifies major issues affecting each expansion project, including program needs, spatial ideas, operating logistics and costs, and preliminary construction cost estimates. The Institution has established an improved long-range planning capability by adopting a ten-year development program to address the Institution's most urgent expansion needs. During the planning period, the staff will refine these plans and consider additional requirements that will extend well beyond the year 2000.

Minor Construction, Alterations, and Modifications

The Smithsonian requires continued changes and improvements to existing buildings to meet programmatic objectives in the areas of research, collections management, exhibitions, and administration.

Into the Twenty-First Century

Beyond fiscal year 2000, the Institution will continue to require new facilities to meet its multidimensional program needs. The Institution is considering the following construction projects in the long-term:

- Continuation of the initiatives to develop collections research and storage facilities;
- Removal of the antiquated buildings at the Garber Facility when the National Air and Space Museum Extension is completed;
- Development of a dedicated presence for African-American programming either through expansion of the National Museum of American History or a separate exhibition, collection, and research center;
- Construction of a new, expanded facility for the Anacostia Museum;
- Expansion of the Cooper-Hewitt National Museum of Design to provide additional space for collection storage and exhibitions and to support educational activities;
- Expansion of the Hirshhorn Museum to accommodate increased exhibition and research programs;
- Continued acquisition of land for environmental research at the Smithsonian Environmental Research Center;
- Expansion of the Mathias Laboratory at the Smithsonian Environmental Research Center to meet the increasing need for environmental research; and
- Expansion of the National Museum of Natural History West Court to accommodate increased programming and construction of a new restaurant pavilion.

Zoological Park and Conservation Research Center Master Plan

In keeping with the 1889 charter, the National Zoological Park endeavors to “administer and improve” the Zoo for “the advancement of science and instruction and recreation of the people” (20 U.S.C. 81). The National Zoological Park complex includes 163 acres in Rock Creek Park (Washington, D.C.) and its 3,150 acre Conservation and Research Center in Front Royal, Virginia. Since 1890, exhibition and public educational functions have centered in the Rock Creek Park location. Conservation, research, and breeding functions take place at both Rock Creek and the Conservation and Research Center. This section surveys the construction and improvement projects anticipated over the planning period for both locations.

National Zoological Park — Rock Creek

Construction and Improvements

(Federal Appropriations for Scheduled Projects)
Fiscal Years 1991–2000 (Millions of Dollars)

	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
FY 1991 – 2000 Cost										
Master Plan (Rock Creek)	\$ 1.0		\$ 1.0							
Olmsted Walk Landscaping										
Aquatic Exhibits	\$ 4.6									
Amazonia Gallery	\$ 14.1	\$ 1.6	\$ 6.9	\$ 7.2						
Aquatic Trail	\$ 14.4				\$ 4.0	\$ 4.0	\$ 6.4			
Parking Facility ¹	\$ 15.2		\$ 1.8	\$ 8.1	\$ 5.3					
Grassland & Forest Exhibits	\$ 0.3		\$ 0.3							
Loop Tail Graphics	\$ 2.0				\$ 2.0					
Children's Facility (Rabbitat)										
Hall of Humankind	\$ 3.3	\$ 3.0				\$ 0.3				
Master Plan (10 Year Update)	\$ 0.3					\$ 3.0	\$ 9.0			
Holt House	\$ 3.0					\$ 0.9	\$ 0.4	\$ 4.0	\$ 4.5	
Window on Life (Biological Center)	\$ 9.9							\$ 0.4		
Hall of Flight (Bird House)	\$ 4.4							\$ 0.4		
Reptile House	\$ 4.9							\$ 0.4		
World of the Very Small (including an Invertebrate Exhibit)	\$ 5.5								\$ 0.5	\$ 5.0
Harvard Street Bridge	\$ 2.0						\$ 0.2	\$ 1.8		
Blue Road (reconstruction)	\$ 1.1			\$ 0.1	\$ 1.0					
Water & Sewer Systems Upgrade	\$ 1.6								\$ 0.1	\$ 1.5
Electrical Distribution Upgrade	\$ 0.2								\$ 0.2	
Rock Creek Renovations & Repairs	\$ 23.1	\$ 1.9	\$ 2.0	\$ 2.0	\$ 2.2	\$ 2.3	\$ 2.4	\$ 2.6	\$ 2.8	\$ 2.9
Subtotal, Rock Creek	\$110.9	\$5.2	\$6.6	\$17.4	\$14.5	\$10.5	\$18.4	\$8.8	\$7.9	\$9.6

¹The Zoo estimates construction costs at \$19,400,000 (including design) with citizen participation, through parking revenues, contributing \$5,000,000.

National Zoological Park — Front Royal

Construction and Improvements

(Federal Appropriations for Scheduled Projects)
Fiscal Years 1991–2000 (Millions of Dollars)

	FY 1991 – 2000 Cost	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
Development Plan (Front Royal)											
Water Systems & Hydrants	\$ 1.2	\$0.6									
Road Improvements/Extensions	\$ 1.3	\$0.1	\$ 1.2								
Maintenance Facility	\$ 1.0		\$ 1.0								
Multi-purpose Animal Facility	\$ 2.9		\$ 0.3	\$ 2.6							
Upgrade Utilities Distribution	\$ 0.5		\$ 0.5								
Rockhill Ungulate Facility											
Phase I	\$ 0.4		\$ 0.4								
Phase II	\$ 0.5						\$ 0.5				
Conservation Research Laboratory	\$ 2.2			\$ 0.2	\$ 2.0						
Administration Building	\$ 0.6			\$ 0.6							
Animal Quarantine Expansion	\$ 1.1				\$ 0.1	\$ 1.0					
Wildlife Training Center (renov.)	\$ 2.0						\$ 0.2	\$ 1.8			
Raptor Propagation Center	\$ 0.8							\$ 0.8			
Carnivore Facility	\$ 1.4							\$ 0.1	\$ 1.3		
Tropical Large Mammal Facility	\$ 1.0									\$ 1.0	
Visitor's Center	\$ 0.1									\$ 0.1	
Front Royal Renovations & Repairs	\$ 9.6	\$0.8	\$0.8	\$ 0.8	\$ 0.8	\$ 1.0	\$ 1.0	\$ 1.0	\$ 1.0	\$ 1.2	\$ 1.2
Subtotal, Front Royal	\$ 26.6	\$1.5	\$1.4	\$ 4.2	\$ 4.2	\$ 3.1	\$ 2.0	\$ 1.7	\$ 3.7	\$ 2.5	\$ 2.3
TOTAL, ZOOLOGICAL PARK	\$137.5	\$6.7	\$8.0	\$16.2	\$21.6	\$17.6	\$12.5	\$20.1	\$12.5	\$10.4	\$11.9

CHOOSING THE FUTURE

Olmsted Walk

Restoration and construction of the Olmsted Walk began in fiscal year 1985 with emphasis given to preserving and enhancing the natural and historical character of the Park. The Zoo will renovate some exhibits along the Walk to enhance the visitors' experience of viewing the animals. This renovation will include new surfaces for the Walk, adequate drainage, new landscaping, additional benches and drinking fountains, and improved signage. These improvements will unify the exhibits and grounds and provide a pleasant and educational experience for the public at the National Zoo. The Zoo has completed the first three phases of the Olmsted Walk renovation. With continued federal support in fiscal year 1992, the Zoo will complete overall landscaping of the adjacent areas. The landscaping will screen parking areas, create shade, add color, and develop diversity for the benefit of the visiting public.

Loop Trail Signage

The Olmsted Walk project established a clear pedestrian thoroughfare from the Connecticut Avenue entrance down to the Rock Creek entrance. This efficient route connects most of the Zoo's exhibit structures. However, it bypasses the Bird House, with its new wetlands exhibit, the exhibits in Beaver Valley, and the Zoo's new Aquatic Habitat complexes. The Loop Trail will connect these major exhibits and other animal areas with the main Olmsted Walk.

New street signs and maps. (Photo by Jessie Cohen)



Aquatic Exhibits

The Zoo plans aquatic exhibits that will include a full range of fish, aquatic mammals, birds, reptiles, and amphibians. The planned exhibits will concentrate on freshwater animals. Together with the invertebrate exhibit which opened in May 1987, the proposed aquatic exhibits will fill the last gap in the Zoo's presentation to the public of representatives of all the major animal groups. Previously, the Zoo emphasized terrestrial animals almost exclusively despite the fact that over 60 percent of the world's vertebrate animals are fish and despite the fact that the general public knows little about aquatic animals. The animals that the Zoo will feature in the new aquatic exhibits include those not presented in most zoos, hence the proposed exhibit provides an excellent opportunity to educate and entertain the general public about these engaging and important groups of animals.

The aquatic exhibits will include four components which together, will fully embody the Biodiversity Park philosophy: the Amazonia Exhibit; the Amazonia Gallery; an Aquatic Trail; and other Aquatic Habitat exhibits.

The Zoo has scheduled the first phase, the Amazonia Exhibit, for construction. This exhibit will display aquatic mammals, appropriate fish, invertebrates, birds, and amphibians, as well as vegetation in the natural habitat, a tropical river shore. Visitors will view these animals from both above ground and underwater viewing stations. The exhibit setting, a tropical rain forest, will illustrate the predominant features of tropical biology and emphasize complexity, specialization, and species interactions.

As an extension of the Amazonia Exhibit, the Zoo plans an eight-thousand-square-foot Amazonia Gallery that will contain the Smithsonian Tropical Science and Global Environmental Science Gallery. The Gallery will educate the visitor about global problems and tropical biology. The exhibits in the Gallery will provide close-up views of the complex web of cooperation and competition among plants and animals.

The Aquatic Trail will consist of a cluster of exhibits near the Zoo's Amazonia Exhibit. The exhibit will include the addition of two widely popular groups of animals, sea otters and penguins. These animals are the focus of important conservation efforts. Within the Aquatic Trail cluster of exhibits, the Zoo plans to highlight areas such as the American Lake, the South Atlantic Coast, the Chesapeake Marshes, and a Mangrove Swamp.

In addition to the aquatic exhibits planned through fiscal year 1991, the Zoo plans further aquatic habitats as included in the master plan.

Parking Facility

For over a decade the Institution has entertained a long-range plan for a centralized multi-level parking garage at Rock Creek. Such a facility would expand exhibition space by using the present surface-parking areas that occupy level land in the center of the Zoo. This level ground is more appropriate to certain species, and its use as exhibition space would increase the natural setting of the Zoo's core areas. The proposed parking garage will include approximately 1,100 spaces compared to the existing 250 spaces on the site adjacent to the present General Services Building. The construction will include a pedestrian walk and tunnel to allow visitors unimpeded access to the central animal area. The Zoo has tentatively scheduled construction of the parking facility for 1993 through 1995.

Grasslands and Forests Exhibits

The Zoo proposes to develop three exhibits during the coming decade, each representing a distinct ecological and geographic area. These will include: American Grasslands, African Grasslands, and Forests. Construction of the first will occur in late 1993 and 1994.

The American Grasslands exhibit will consist of two major habitats, the North American Prairies and the South American Grasslands. Separating the two exhibits, a planted berm will conceal a service yard and holding buildings. Bison, coyotes, sandhill cranes, prairie dogs, and gopher snakes will populate the Prairie exhibit. The American Grasslands exhibit will quarter mara, giant anteaters, capybara, maned wolves, rhea, and guanacos.

The African Grasslands exhibit also will subdivide into two major habitats, the African Savannah Grasslands and the African Desert Grasslands. The trails in the two subdivisions will include screening and specimen plantings to create the illusion of being in Africa. Animal species such as zebra, ostrich, wildebeest, flamingo, spotted hyena, blesbok, gerenuk, and dwarf mongoose will inhabit the new exhibit. A nocturnal exhibit will include species such as the zorille, armadillo, fennec fox, cobra, and insects. The Zoo plans to include gazelle, crowned crane, meerkat, duiker, and klipspringer in the Desert exhibit.

The Forests exhibit will feature three major habitats: West African Forests, Southeast Asia Forests, and the Sulawesi Forests. The Zoo will include mandrill, leopard, bongo, Eld's deer, tapir, muntjac, anoa, and babirusa in the exhibit.

The Zoo estimates that construction of the Grasslands and Forests Exhibits will occur between fiscal years 1992 and 1994.

In order to reflect its enhanced animal husbandry standards, the Zoo will remodel the Monkey House and replace it with the Hall of Humankind. The new facility will treat primate biology and will include human biology, origins, and cultural achievements. This exhibit will complement exhibits on human origins in the National Museum of Natural History. Here the Zoo will exhibit tool-using capuchin monkeys, language- and drawing-capable apes, orb-weaving spiders, leaf-cutting ants, and honeybees as analogues of socially, technologically, agriculturally, linguistically, and artistically accomplished humans.

Hall of Humankind

The Zoo plans to construct a Children's Facility beginning in fiscal year 1995. The new exhibit will provide programming for children and their families. The building, to be known as the Rabbitat, will include both an indoor and an outdoor activity garden with natural animal exhibits, a human-size game maze, and a sensory garden maze. Rabbitat will combine fantasy with a natural environment to help children learn about a habitat and the animals that share it.

**Children's Facility
(Rabbitat)**

In addition to the redevelopment master plan, the Zoological Park is responsible for a continuing program of maintenance and repair of its sixty separate structures, and associated grounds, utilities, and equipment. The Zoo will require \$2 million annually (\$2.2 million by fiscal year 1996) for structural, mechanical, and electrical repairs and renovation of the physical plant.

Renovation and Repairs

To improve operations, security, and accessibility, the Zoo will consolidate into one area the maintenance trade shops that serve the Conservation and Research Center. The Zoo will renovate and modify a group of supply buildings to serve as the new trade shops and to provide parking for the Center's motor pool operations and off-site employees. The Center will use the space the present shops vacate for expanded research laboratories and student housing.

Maintenance Facility

This proposed new facility will provide needed additional space to support research and breeding programs for small to medium-sized endangered species of mammals. This facility will utilize the same passive solar heat/natural light that has proven so successful in the small animal facility devoted to conservation and improved animal health. The Multi-Purpose Animal Facility is scheduled for construction in 1991.

**Multi-Purpose Animal
Facility**

CHOOSING THE FUTURE

Water System, Hydrants, and Road Extensions

The Conservation and Research Center plans to develop an infrastructure that will serve equally any of the major functional paths that the Center may follow in the next twenty years. The Center will upgrade and extend the water distribution system, including fire hydrants. The Center also will redesign the road system to improve vehicular access to outlying areas and will repair or replace deteriorating existing roads.

Training Center

The Zoo's Conservation Research Center at Front Royal, Virginia, will continue to expand its widely acclaimed international training programs. These programs have now involved more than thirty-five countries. The Zoo plans to construct a new complex of classroom, laboratory, auditorium, and living and recreational space which will serve its training and small conference needs.

Pachyderm Facility

This facility, scheduled for construction in fiscal years 1993 and 1994, will quarter large, nontemperate mammals for research and breeding. The Zoo has chosen a site that is well suited for this purpose and will require minimal support. The facility will permit the Zoo to pursue breeding programs for such critically endangered groups as rhinoceroses and tapirs.



“ . . . for the increase
and diffusion
of knowledge . . . ”

Smithsonian Institution

Five-Year Prospectus ♦ Fiscal Years 1992 – 1996