

*W.P. Biology  
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# Choosing the Future

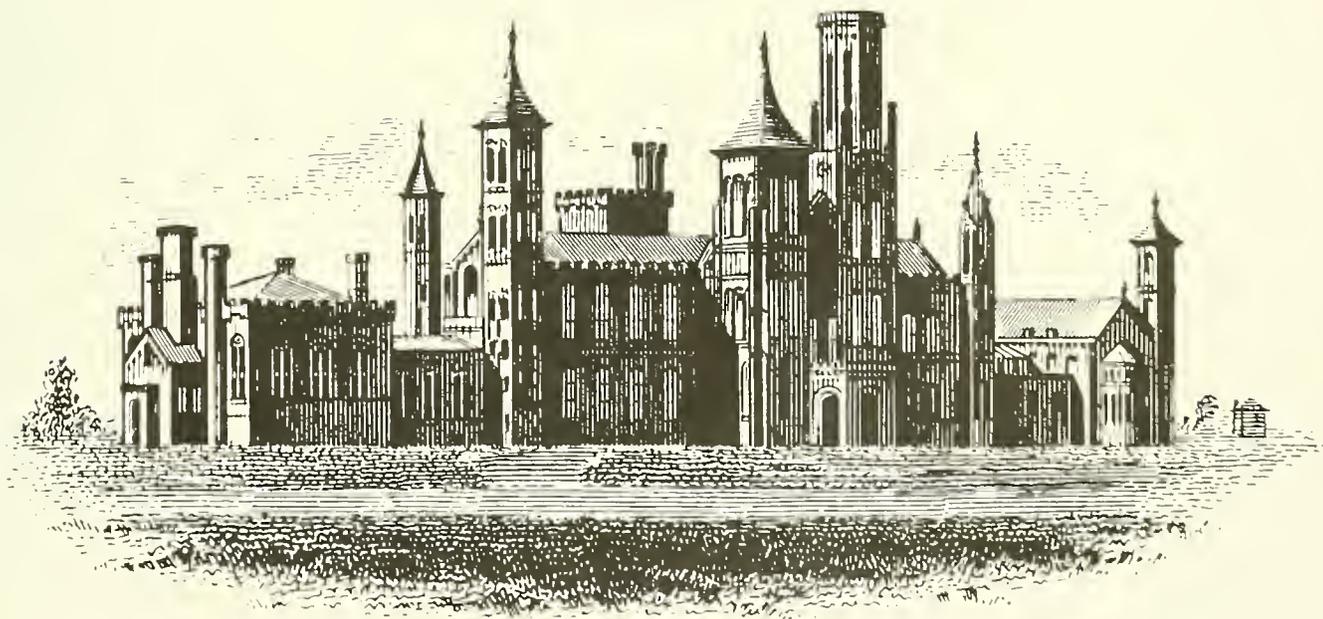


**Smithsonian Institution**

**Five-Year Prospectus ♦ Fiscal Years 1993 - 1997**



# Choosing the Future



**Smithsonian Institution**  
Five-Year Prospectus ♦ Fiscal Years 1993 - 1997





## *Smithsonian Institution*

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*January 1992*

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# CHOOSING THE FUTURE

## Message from the Secretary

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The Smithsonian faces a special challenge in times of budgetary shortfall. We fully recognize that severe restraints on expenditures will and must remain a basic feature of Federal budgets for years to come. Especially at risk are large-scale, periodic capital improvements, both for programs of restoration and renovation ("R & R") and for new facilities, since capital projects can seldom be amortized fully within a five-year budget cycle. Yet investments in projects of this kind are frequently integral to the Smithsonian's core programs.

The crucial point, in presenting a Prospectus of our financial planning, is that this is an institution with a mission to follow the moving frontier of knowledge. Hence it cannot readily confine its activities to familiar channels of predetermined scope and direction. An internal momentum of growth, strong but selective, has long characterized almost everything associated with systematic knowledge. The pace of change may slow as funding priorities shift, but it cannot completely halt without subverting the fundamental character of a knowledge-based institution.

This applies, of course, to the Smithsonian's heavy and varied research responsibilities — the "increase" element in the commitment to the "increase and diffusion of knowledge" that was laid down in our original charter. But since they are specialized adjuncts or repositories of knowledge, our museum collections share this inherent tendency to grow. The historic pattern of steadily increasing diversity, comprehensiveness and representativeness of our collections, and of the exhibitions largely based on them, has served the American people well over more than two-thirds of our history as a great independent republic.

The 140 million or so objects in our collections open new worlds of discovery for thousands of scholarly collaborators and tens of millions of visitors. These new openings inevitably expose shortcomings, not only in the accepted fabric of scholarly understanding, but also in the collections that are now in place. Collections are made useful and significant when they are not left frozen in the condition and time of their origin, but are permitted to evolve just as knowledge itself is always evolving.

Collections, of course, are the raw materials from which an almost endless series of possible future exhibitions are fashioned for succeeding generations of visitors. Thus they are simultaneously sources of new knowledge for scholars and instruments of the diffusion that our charter also mandates. The Institution's varying and growing educational programs, now beginning to reach into school districts all across the country, complement collections as well as draw upon them. The "increase" and "diffusion" are not

alternative emphases, in other words, but mutually interdependent ones.

Thus it is misleading to think of the Smithsonian as the “nation’s attic.” That phrase wrongly implies that the Smithsonian’s holdings are an eclectic accumulation of residues, rather than an ordered process of strengthening an historic resource. Collections, along with libraries and laboratories, are tools of study, education, and imagination. On the one hand, embodying the accumulated wisdom of the past, collections capture our best current understanding of the known world and expose the grandeur of its underlying structures. On the other hand, collections are also resources for raising new questions, developing new methods, and groping for the still more basic understandings which identify each new age or generation.

Accessioning of new collections is always a matter of careful selection and judgment. What new resources, of additional staff, space, or equipment, would be required for their curation? What are the “opportunity costs” — other options that would have to be foregone in order to acquire them? How much would they contribute incrementally to meeting national needs, as in the case of our enormous natural history collections that play a vital part in ongoing research on human health, agriculture, and the state of the environment? Even for an institution as large and diverse as the Smithsonian, it is essential to recognize that administration is a matter of making choices and that we and all our successors cannot pursue universalistic coverage as an attainable goal.

Occasional de-accessioning is, similarly, a matter of careful judgment. Objects in collections may be repositories of much information yet to be uncovered. In as yet unimagined association with other collected materials, they may one day be the basis for popular and evocative new exhibition themes. So there can be no rigid cut-off principle that dictates dispersal, limitation or reduction of our collections.

Still, exchanges with other museums (involving some de-accessioning) can be a source of mutual strengthening. Duplicate specimens in the collections of the National Museum of Natural History have undergirded the research capabilities of new scientific centers, whose collaboration with our own scholars has undeniably advanced the common frontier of all science. Or to take another example, the Hirshhorn Museum could not retain its commitment to what is contemporary in art without consistently screening, and being ready to prune, its existing holdings of what was contemporary a few years ago. This partly self-liquidating requirement was, I note with admiration, already fully recognized by Joseph Hirshhorn, the original donor.

As the Hirshhorn Museum and Sculpture Garden exemplifies, and as the new Earl S. Tupper Research and Conference Center at the Smithsonian Tropical Research Institute in Panama most recently illustrates, there has been a vital philanthropic element in many of the key phases of Smithsonian growth. The Institution repeatedly has called upon private generosity in order to move into new areas, implicitly accepting the corresponding need to respect the concerns of donors.

Economizing through public-private partnerships has been — since the inception of the Smithsonian in the will of James Smithson — a complementary and sustaining source of growth and creativity. A matching principle was inherent, for example, in the construction of the architecturally much-admired Quadrangle a few years ago, now the home of the ever-more-popular National Museum of African Art, the Arthur M. Sackler Gallery, and the S. Dillon Ripley International Center. It is present again in the legislation calling for the new National Museum of the American Indian, and national funding efforts responsive to that mandate are currently under way. In still other cases, as in the projected rebuilding and expansion of the Smithsonian's marine biological laboratories at Link Port, Florida, the private-efforts will stand alone without seeking Federal funds.

Apart from the budgetary constraints that are immediately in view, there obviously cannot be an indefinite growth of national museums — certainly not along the Mall and not necessarily in Washington, D.C. The Smithsonian's new storage facility in Suitland, Maryland, is an example of a state-of-the-art relocation of materials that are vital for scholarship, and that can be drawn



The new Earl S. Tupper Research and Conference Center at the Smithsonian Tropical Research Institute in Panama.

upon selectively for exhibition purposes, but that in their totality do not require an expensive, central location that is easily accessible to the public.

The Regents are also giving consideration to other, long-term possibilities of selectively extending the Institution's reach. Locating new collections in other cities, under varying forms of local, Smithsonian, or shared sponsorship, provides one broad set of alternatives. "Networking" is the key to another — more or less permanent and formal consortiums that share training, curatorial, and conservation responsibilities, that might sponsor publications and symposia, or that reach out jointly to involve and educate the public. Efforts along these lines play a central part not only in the planning that is under way for our new National Museum of the American Indian, but also in preliminary discussions of the proposed National African American Museum. The Smithsonian Traveling Exhibition Service (SITES) is still another form of outreach that is already vigorously successful and growing.

But it should also be recognized that museums in Washington, D.C. do have a special contribution to make to the Nation's capitol. The gratifying flow of visitors who come from all over the world to see our seat of government is a source of unity as well as pride, and it is undeniable that they are attracted, in part, by the unparalleled array of diverse cultural institutions — prominently including the Smithsonian's many museums — that they find in this beautiful city.

All this bears on the special part that new, extensively renovated, and enlarged facilities play in the Smithsonian's programs — prominently including several that are described (with varying degrees of confidence as to when, if, and on what scale they will go forward) in this Prospectus. Very seldom have these been wholly new undertakings. More generally, they are intimately linked to collections that are already serving national needs and have won a place in the hearts of the public, and are continuing to grow or are taking on new dimensions. This sometimes dictates enhancements of the facilities in which existing collections are housed, for the sake of their more adequate protection, exhibition, or study. Precisely controlling temperature and humidity in museum environments and replacing costly heating, ventilating and air conditioning systems, and other equipment, for example, is often a conservation imperative.

The Smithsonian's buildings, in other words, are neither secondary, expendable programmatic embellishments nor reflections of a chronic, undisciplined appetite for growth. They are, rather, specialized, integral components of operations mandated by its charter — operations that, as we have seen, must be periodically renovated and updated if they are to continue to

serve the purposes for which the Smithsonian itself was created. Where museums are involved, the replacement, repair and renovation of buildings, and on occasion the construction of new ones to meet new or drastically altered exigencies, cannot be wholly sacrificed to other, seemingly more urgent requirements of on-going public programs.

The budgetary problems remain, exacerbated in the Smithsonian's case by a simultaneous downturn in non-appropriated income from its business activities as a result of the current recessionary climate. They must and will be dealt with. No organization can be immune to the shrinking availability of Federal funds for discretionary expenditures, and the Smithsonian is prepared to do its part.

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

Robert McC. Adams, Secretary



# Introduction

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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 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 which managers and staff have developed, the *Five-Year Prospectus* broadly describes the programs the Institution intends to undertake and the resources the Institution seeks to attain. 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 1993 through 1997, and describes long-term plans for construction and facility repair through fiscal year 2001.

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 merits a separate chapter because this effort to promote cultural diversity is 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 to develop resources in pursuit of its objectives. The *Prospectus* contains a flexible plan that senior managers will continue to re-evaluate and modify depending upon the circumstances the Institution encounters. In adjusting operations to evolving circumstances,

“Being history-minded, I tend to believe that time is the only true touchstone of merit. What merit lay in the enigmatic bequest of money by James Smithson to the nation in 1826? No one could be sure. The resulting hubbub in the Congress over whether to accept the ‘tainted’ British money has long since become part of the dust of yesteryear. But my own feeling is that the creation of the Smithsonian started a chain reaction which has since touched every American.”

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

In the *Smithsonian Year*, 1979.

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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.

**Lowland gorilla Mandara holds her male infant, born May 10, 1991. This was the first gorilla birth at the National Zoological Park in 19 years. This birth occurred in a family group consisting of unrelated gorillas on loan from U.S. Zoos subscribing to the Species Survival Plan. (Photo by Jessie Cohen)**



## Smithsonian Institution Statement of Purpose

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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 145-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 that 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.

## CHOOSING THE FUTURE

"About 20 years ago, when I was chairman of the Committee on Appropriations, Prof. Langley [former Secretary of the Smithsonian] was before the committee, and after he had presented his estimates to the subcommittee I asked if there was anything else he would like to present to the committee. 'Yes, Mr. Chairman; I would like to have \$10,000 to experiment in building a flying machine,' said the professor. 'Great Heavens!' I exclaimed. 'A flying machine to ride up in the air?' 'Yes,' he replied, 'I don't wonder at your question because you have not given the subject any investigation. But is not a bird heavier than air? Is not an eagle who soars in the sunlight and above the clouds heavier than air; and don't you think we could devise a machine by which the human animal can navigate the air?' He did not have to argue or make elaborate explanations. . . . the House and Senate made the appropriation; and I was more ridiculed and abused for 'wasting the people's money' on flying machines than for any other appropriation I reported while chairman of that committee. . . . Prof. Langley built his machine, took it down to the Potomac and made it fly . . . the flying machine after a very short flight, tumbled into the river. The gasoline engine had not been fully developed and Langley failed, but the Wright brothers took up the same principle, and with a better engine, made flying not only a possibility but developed it into a pastime. . . . Langley was an exception among Government experts, especially in his modesty about asking for big Government appropriations, and my confidence in him made me more lenient in considering the extravagant prospectuses of others."

— Joseph G. Cannon  
Former Member of the House of  
Representatives

In *Harper's*, October 1919

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

## Goals of the Institution

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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

"The idea of final goals is inconsistent with our limited ability to foretell or determine the future. The real result of our actions is to establish initial conditions for the next succeeding stage of action. What we call 'final' goals are in fact criteria for choosing the initial conditions that we will leave to our successors. . . . Our initial task — a big enough one to be sure — is simply to keep open the options for the future or perhaps even to broaden them a bit by creating new variety and new niches. Our grandchildren cannot ask more of us than that we offer to them the same chance for adventure, for the pursuit of new and interesting designs, that we have had."

— Herbert Simon, Social Scientist

In the *Smithsonian Year*, 1989

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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.

**“Fred E. Miller: Photographer of the Crows”** is an exhibition of photographs taken by Miller between 1898 and 1912, the years he lived on the Crow Reservation. Miller’s granddaughter, Nancy Fields O’Conner, is organizing the exhibition that is traveling nationally under SITES’ auspices. This photo shows Bear Claw, Lieutenant of Crow Police with Last Crow Chief, Chief Plenty Coups. (Reproduced by Carnan Vidfilm Inc.)



## Areas of Emphasis

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For the period from fiscal year 1993 to 1997, the Smithsonian will concentrate on four "Areas of Emphasis."

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### 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.

"There is no simple balance to be struck between these seemingly opposing considerations of tradition and modernity. Neither is quite so unambiguous and clear-cut a programmatic choice as it may seem. There is nothing inexorable about the way the future develops out of the past. The dominant direction of movement can double back upon itself or enter blind alleys and have to be abandoned. As we all know, most predictions are flawed. Yet it is no more credible merely to resist or deny change. The old criticism of the Bourbons still has fire, that in forgetting nothing they ensured that they would also learn nothing. All we can do is to carefully weigh the continuing contribution of what is old and the risk, as well as the promise, of what is new — and then resolutely move ahead."

— Robert McCormick Adams, Secretary

In the *Smithsonian Year*, 1990

## 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.

CAL Research Biochemist Noreen Tuross is preparing to perform a molecular analysis on a piece of bone from an ancient rhinoceros, a Pleistocene megafauna from the Kents Cavern site in Devon, England. (Photo by Doc Dougherty)



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## 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 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.
- Integrating cultural pluralism into all aspects of the Institution's governance, planning, staffing, and programming.
- Commemorating the 500th 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.



In June of 1991, RAP sponsored a tour to New York, "The Best of Harlem: Dance Theatre Style." Among the performances featured were signature ballets from the company's repertoire including favorites such as *Douglas* and *Firebird*, shown here. (Photo by Martha Swope)

## Bringing Synergy to Contemporary Education

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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 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 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 links between the Institution's educational resources and the nation's colleges, universities, and school systems.

On July 15, 1991, the National Air and Space Museum celebrated its 15th Anniversary with a ceremony on the Mall including a big cake, a robot band, and many other special activities. This photograph shows one of the activities encouraging children to build air- and spacecraft from materials such as egg cartons, stir sticks, and plastic lids.



# Stewardship of the Public Trust

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The Smithsonian Institution is proud of its history. Today its precious collections, numerous buildings, beautiful gardens, exhibition 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 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 cites 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.

"Now, as at all times in the past, we at the Smithsonian face an array of compelling, but to some degree conflicting, programmatic alternatives. As we weigh choices among them, their potential impact is a major consideration. . . . Yet impact cannot serve alone as the determinant of what the Smithsonian must do. Who can say with confidence how much of whatever is today viewed with great hope and excitement will be so viewed tomorrow? We must not forget that the Institution's well-established strengths and areas of programmatic responsibility have withstood the demanding test of time."

— Robert McCormick Adams, Secretary

In the *Smithsonian Year*, 1990

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## 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 a primary responsibility the Institution bears under trust to the American public for this 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 audience. At best, permanent exhibitions become stale over time; at worst, they become obsolete and inaccurate. Smithsonian museums must

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**Polly Willman, conservator of the First Ladies gowns at the National Museum of American History, uses a microscope to examine the weave of a stunning silk brocade dress that belonged to Mary Todd Lincoln. By studying how patterning is achieved in the fabric, Willman will be able to decide how best to preserve the gown for display in the new First Ladies exhibit in 1992.**



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 renovate the Geology, Gems, and Mineral Hall, and will develop a new exhibition, "Global Cultural Change/North American Indians." Science education, preservation of the natural environment, and cross-cultural respect and understanding are central to Natural History's permanent hall exhibition renovation project.
- The National Museum of American History will open two major permanent exhibitions in FY 1992, "First Ladies: Political Role, Public Image" and "American Encounters." In FY 1993, American History will open "Land of Promise: America in the 19th Century." This exhibition will examine America's past from a perspective that reveals the promise and paradoxes of the new land.

- The Freer Gallery of Art will reopen to the public in 1993 following a multi-million dollar construction and renovation project. The project added two underground levels which will expand exhibition space, provide a new collections storage area and add a state-of-the-art conservation and technical research facility. The original gallery exhibition space has been totally refurbished and renovated. The additional exhibition space will allow for the complete reinstallation of the Freer's collections of Asian and American art. The Gallery will now be physically linked to the Arthur M. Sackler Gallery underground.
- At the Renwick Gallery, the National Museum of American Art will reinstall some of its changing exhibition halls as permanent galleries. This change will permit the Renwick to double the space available for display of its growing collection of contemporary American crafts. At the Patent Office facility, American Art will redesign the lobby to provide updated visitor orientation services, and will renovate, enhance and enlarge gallery space.

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.

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## 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; the unique ones cannot. The Institution plans to continue to acquire, care for, and preserve library and archival collections for the sake of future generations of scholars.

Initiatives of the Smithsonian Institution Libraries and Archives exemplify ongoing preservation activities. For many years the Smithsonian Institution Libraries has owned a sizable collection (over 2,000 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 quality paper, have deteriorated. In FY 1991, the Smithsonian Libraries oversaw the completion of the conversion of these materials to microfilm in compliance with current archival standards. As part of its new Brittle Books program, in FY 1992 the Libraries will begin to microfilm important historical collections of Native American languages and the taxonomy of grasses, as well as early Smithsonian series publications. The Smithsonian Institution Archives has targeted original and historically valuable architectural drawings of Smithsonian buildings for conservation. The Institution frequently uses these drawings for current building repair work and will continue to seek support from private and government sources for all these basic activities.

### Caring for Smithsonian Facilities

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The Smithsonian maintains over five million square feet of space in more than 200 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 relies on leased space in buildings convenient to the Mall to quarter administrative and program support functions. The need for a larger service center that would relocate related administrative and program support activities to one site is an immediate concern.

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## Enhancing Professional Support

The Institution is seriously concerned with remedying certain shortcomings in its staff and programs as it recruits 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 on support staff. Additional clerical support for scientists, curators, and other museum specialists would improve the productivity of many programs.

For example, the Smithsonian Institution Archives is the official repository of the Institution's records and related historical documentation in all forms and media. The addition of technical support staff to process and manage the increasing volume of Institution records will ensure systematic, comprehensive historical accountability of its national public trust. At the Smithsonian Tropical Research Institute, 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.

Improved research facilities and equipment are another aspect of professional support. 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. During the planning 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 rebuild systematically the critical infrastructure of laboratory and scientific equipment in selected areas. For example:

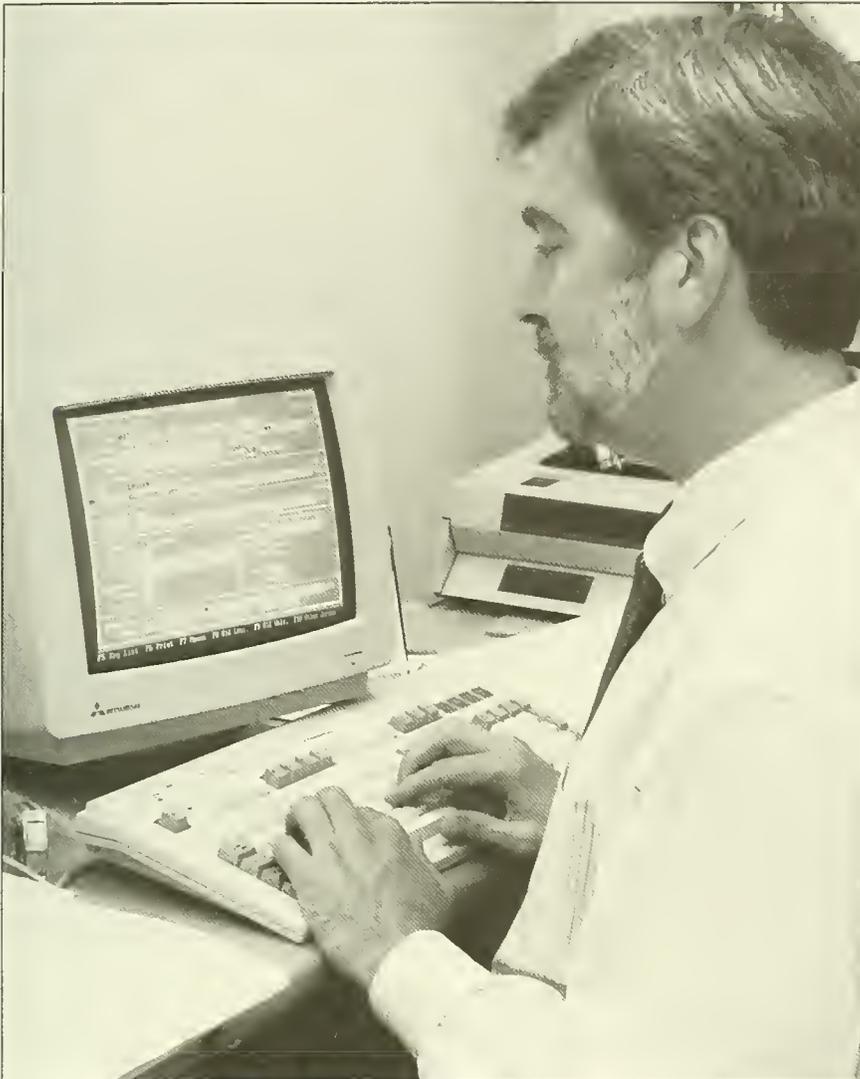
- The National Zoological Park, as a leading center for animal exhibition, biological and veterinary research, conservation, and public education, plans to acquire much needed veterinary and scientific equipment. This equipment will allow the Zoo to monitor and maintain the health of the live collection and support its ongoing research programs.
- The Conservation Analytical Laboratory (CAL) has acquired an international reputation for leadership in the interdisciplinary research areas of archaeometry and conservation. The research conducted at CAL requires the cyclical replacement of sophisticated scientific equipment to keep pace with methodological advances and technological innovations. CAL plans to institute a systematic program for updating and replacing research equipment to maintain its leadership position.

### Strengthening Administrative Services

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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.

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 integrated computer services. Current financial systems capabilities do not begin to meet the burgeoning demands of tracking current financial activity. Since automated financial services are integral to every phase of Institutional life, the Smithsonian has developed a payroll cost projection



**Head Registrar Bruce Young enters data for the Arthur M. Sackler Gallery's new collections management system.**  
(Photo by Jeffrey Crespi)

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 Museum of Natural History will implement a Collection Information System Modernization Program that will result in: a comprehensive database of information vital to understanding biodiversity, cultural diversity, and global environmental change; a common data structure across scientific disciplines to ensure retrievability of collection and research information; a museum-wide automated specimen transaction management system to support increased loan, acquisition, and move activities; and a cost-effective system architecture.

## 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 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 other medical activities essential to such preventive efforts. These programs have proven their 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 34.5 carat elbaite tourmaline, 87 Ch'ing dynasty Chinese portrait paintings, a marble bust of Andrew Jackson, a SR-71 "Blackbird" reconnaissance aircraft, a western lowland gorilla, a wooden goat skin drum, and operatic costumes from the Broadway stage. 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 collections 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 15 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. Staff routinely struggle to ensure access to and accountability for collections in the face of overcrowded storage conditions. Building renovations at the National Museum of American History and National Museum of Natural History necessitate the relocation of thousands of objects and specimens to the Museum Support Center and other off-site facilities. 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 is in the planning stages. Storage for the Institution's voluminous archives barely meets national standards.

The Institution's Master Plan for Suitland, Maryland documents all construction and major renovations, and projects space requirements into the 21st 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 the 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

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Smithsonian's collections, interests, and expertise in biological, geological, and astrophysical research provide unique scientific research capabilities of critical importance in advancing our environmental understanding. Dedicating resources to better environmental understanding is one way that the Institution fulfills its fundamental mission of increasing and diffusing knowledge among all people.

Our species developed a dominant role on Earth over a relatively short period of time. In addition to the benefits of our rapid and accelerating technology, we are increasingly in danger of experiencing environmental disruption that could threaten the planet's delicate environmental balance. Smithsonian scientific research seeks to address challenges such as preventing deterioration of the natural environment and attendant loss of biological diversity; comprehending atmospheric processes that contribute to global warming; searching for new foods and medicines; and understanding what lies beyond our own planet.

The Institution is strengthening research activities and responding to these many challenges through its research in global environmental issues and its public education and exhibition programs. This expansion focuses upon three areas of research emphasis:

- Biodiversity and Global Change;
- Wildlife conservation and preservation; and
- Major scientific instrumentation.

The Smithsonian is intensifying its efforts to raise support from private and government sources for all aspects of its research and especially welcomes donor participation to advance global environmental studies.

"The Smithsonian's second major programmatic priority involves its commitment to the conservation of a worldwide habitable environment. Environmental degradation is proceeding at a frightening rate, in benign, man-altered ecosystems and noxious urban settings, as well as rapidly dwindling natural habitats. Prospects of climatic change at a global scale remain gravely uncertain. Many public and private bodies are acting in concert on these issues, here and abroad. But the Institution's stake is older and more central."

— Robert McCormick Adams, Secretary

In the *Smithsonian Year*, 1990

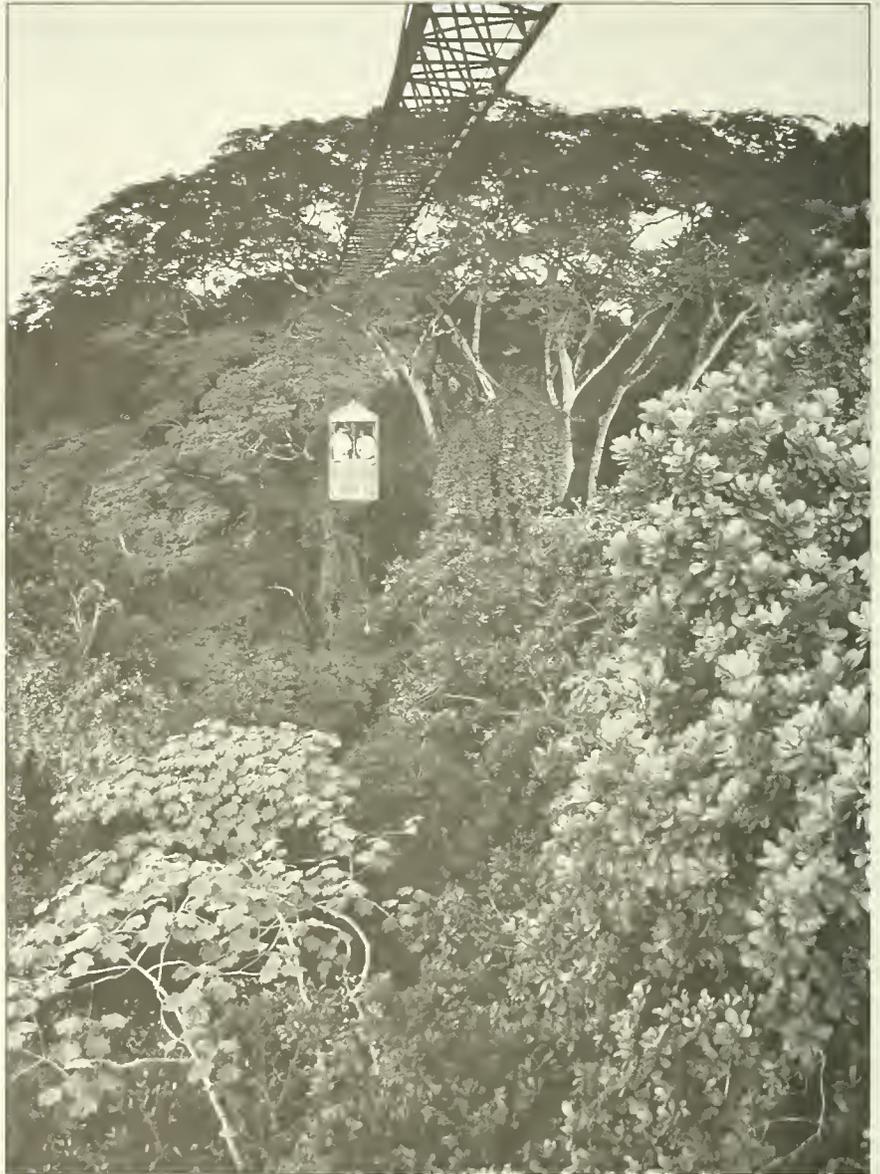
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## Biodiversity and Global Change

The study of tropical environments informs our understanding of global change. Containing most of the world's animal and plant species, the tropics represent important, though mostly

## CHOOSING THE FUTURE

Scientists ride in the gondola of a tower crane to study ecological cycles. After the Smithsonian Tropical Research Institute installs a crane permanently, scientists will measure tropical plant response to the environment. (Photos by Carl C. Hansen)



untapped, sources of medicine and food. Tropical environments are in a constant and rapid state of change. Deforestation by human-kind's activities proceeds at an unprecedented rate, threatening the extinction of many species before scientists can understand these species' role in complex ecosystems, and their potential medical and applied benefits. Moreover, most of North America's birds commonly found in our back yards spend the winters in the tropics. The destruction of tropical habitats disrupts their migratory patterns and breeding groups and decreases the bird population not only in the tropics but also in the United States.



Over 120 species of breeding North American landbirds migrate annually to the tropics during winter. Not only do these birds have immense cultural, aesthetic, and recreational value, but they also protect temperate forests from damage by reducing populations of defoliating insects. Scientific findings link massive clearing of forest in Central and South America to population decline of migratory birds. Smithsonian researchers in the new Migratory Bird Program are studying the effects of habitat destruction on migratory bird populations. This research provides important data on methods for mitigating ecological alterations.

The Smithsonian Tropical Research Institute (STRI) in the Republic of Panama is the only U.S.-affiliated field laboratory of its kind in the world's 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 is enhancing its programs in three areas of global change research: the biological, geological and human mechanisms of change; long-term physical and biological monitoring; and tropical forest research, conservation, and management.

Scientists at the National Museum of Natural History / Museum of Man are extending research and training programs in tropical biodiversity by conducting biological inventories and by monitoring effects of deforestation on species diversity. Major projects in Brazil are collaborating with 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 tropical rainforests. The findings strengthen our understanding of the diversity and dynamics of tropical forests, reveal the effects of deforestation, and suggest recommendations for minimizing fragmentation and loss of forest and biota.

The rising level of carbon dioxide in Earth's atmosphere may elevate prevailing temperatures worldwide and alter climate patterns, a phenomenon known as the "greenhouse effect." Many scientists believe temperatures worldwide are already increasing, or will increase during the next several decades, creating unknown consequences for coastal areas, agricultural production, and discrete global climate patterns.

Rising carbon dioxide levels also affect plant growth rates. Scientists are testing the effects of experimentally increased carbon dioxide on wild plants and associated ecosystems at the Smithsonian Environmental Research Center (SERC), located on the Rhode River watershed system of the Chesapeake Bay. Preliminary findings corroborate previous laboratory determinations that plants respond to 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 acquire additional acres. This future acquisition, aimed at protecting the entire watershed, is critical to the future of SERC's global change programs at a time when rapid urbanization is changing the basic ecological character of this important region of the Chesapeake Bay.

One of the last frontiers in understanding biological diversity lies in the uppermost layers of forest canopies. The Smithsonian proposes an innovative use of technology that offers 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 is redesigning construction tower cranes to provide reliable, rapid access to large areas of forest canopy at both sites.

Scientists studying terrestrial and aquatic habitats already have the access necessary for rigorous research, but comparable access and techniques were not available for the forest canopy until recently. The use of tower cranes now permits safe and rapid work in the upper forest canopy, a primary site of interaction between the atmosphere and the plant community. Use of cranes as research tools will be developed under the Major Scientific Instrumentation program (see pg. 26). 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 climactic change.

The National Museum of Natural History/Museum of Man has established a laboratory for analyzing archaeological plant and animal remains, complementing research on environmental change at STRI and SERC. Human groups have changed plant and animal communities over thousands of years. Plant domestication is one such change. Research on past human alteration of ecosystems provides a rich context and a data base with which to understand the consequences of modern manipulation of



**The Smithsonian Tropical Research Institute tests the feasibility of using a tower crane for canopy research. The crane stands 100 feet high and extends 115 feet. It moves in a cylindrical space 230 feet wide and 100 feet high. (Photo by Carl C. Hansen)**

ecosystems. This research documents major turning points in humankind's ability to change Earth's environment.

Natural History scientists are investigating island ecosystems in the Atlantic, Pacific, and Indian oceans to understand the high rates of extinction of birds and other animals. These extinctions swept the world's isolated islands long after the last ice age and probably resulted from prehistoric human activities. Expanded, collaborative investigations with research organizations in Kenya, Ethiopia, China, India, and South America are concentrating on the long-term dynamics of human adaptation to varying environments and the effects of human activity on progressive environmental change—from the time of early hunters and gatherers, through the development of agriculture and industry, to today's stressed terrestrial and marine ecosystems.

### Wildlife Conservation and Preservation

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The National Zoological Park receives worldwide recognition for its research on gametes and techniques of embryo handling, important for wildlife conservation and preservation efforts around the world. New laboratory techniques for "test-tube" fertilization aid reproduction in rare and endangered species. The birth of the world's first tiger cubs from such artificial fertilization and embryo implantation dramatically highlighted the prospect of using reproductive technology to save animals from extinction.

The Zoo is establishing an endocrine research program to respond to current concerns about global biodiversity. This program has three objectives:

- Understanding reproductive processes in diverse wildlife species;
- Identifying the reproductive status of captive and free-living populations many of which suffer from loss of genetic viability;
- Utilizing endocrine monitoring techniques to facilitate the effectiveness of advanced reproductive technologies.

### Major Scientific Instrumentation

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The Smithsonian consistently pioneers research and development of state-of-the-art instruments essential to modern astrophysics and atmospheric science. In the late 1950s, the Smithsonian developed the Baker-Nunn camera to track the orbits of artificial earth satellites. To facilitate astrophysical research in the 1960s, the Institution developed increasingly sophisticated instruments for both ground and space observations of phenomena in the

universe, both near and far, using radiation at radio, infrared, optical, x-ray, and gamma-ray wavelengths. The Institution also pioneered the application of new technologies and instrumentation to create the first Multiple Mirror Telescope, dedicated May 9, 1979.

The Smithsonian Astrophysical Observatory (SAO) continues to develop two major innovative 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 exploring the universe through ground-based astronomy. For decades SAO has been a world leader in infrared and radio astronomy. The proposed new telescope array extends SAO's expertise into the largely unexplored submillimeter wavelength, a part of the electromagnetic spectrum that lies between radio and infrared waves. Astronomical sources emitting mostly



Increasing evidence suggests variations in the Sun's energy output may be linked to long-term climatic change on Earth. Several programs at the Smithsonian Astrophysical Observatory are aimed at understanding the nature of the Sun, including experiments to study its outer atmosphere, or corona, in x-rays. This photograph, taken by a rocket-borne telescope, represents the sharpest x-ray images of the full Sun ever recorded, revealing details of solar features never before seen. The violent solar flare highlighted in the inset, for example, shows loops that are not accounted for by existing theory.

submillimeter radiation are “cool objects” with average temperatures near absolute zero (−459.673 degrees Fahrenheit). This band is important because it includes the otherwise invisible emissions from the ice halos of comets, from molecular clouds which can become stars, and from the swirling disks of dust and gas that can form planetary systems. Indeed, by observing the universe with ground-based submillimeter instruments of high resolution, scientists will observe the birth of stars and the cores of quasars and galaxies, and study the atmospheres and surfaces of planets around young stars.

SAO's submillimeter array will consist of six movable six-meter-diameter telescopes which are expected to be located on top of Mauna Kea in Hawaii. Together the instruments will 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 six individual instruments.

Working with scientists at the University of Arizona, SAO will utilize innovative spin-cast technology to develop a light-weight 6.5-meter-diameter honeycomb glass mirror, the first truly large mirror of its kind. Conversion of the Multiple Mirror Telescope will more than double the light-gathering power of the instrument 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 than now seen. This improvement will allow the converted telescope to capture objects whose extreme faintness eludes the present telescope. By implication, this means that astronomers will be able to see almost twice as deep into space — and back into the history of the universe. Even more important, with the large increase in its field of view, the converted telescope will be able, for some studies, to observe simultaneously more than 100 objects such as galaxies, making the telescope more efficient and powerful. This telescope is expected to be completed by the middle of the decade.

## State of Smithsonian Research

Research at the Smithsonian — the increase of knowledge — plays a fundamental role in the life of the Institution, supporting many of its other activities and enabling it to stand today as one of the great cultural institutions in the world.

Knowledge includes an almost infinite range of possible intellectual activities. However, particular research strengths in certain interrelated areas have developed during the nearly one and one-half centuries of the Smithsonian's existence. These specialties focus on the past history and present state of the universe; the earth with its complex physical and biological systems; and human art and culture, past and present. Much of this research evolved from the Institution's responsibility for the national collections which comprise some of the Institution's greatest scholarly assets. In addition to collections-based research, the Smithsonian conducts experimental research in such areas as ecology, molecular systematics and astrophysics. The Institution conducts much of its environmental research on land that it owns or protects by law.

Smithsonian researchers examining the universe focus on such topics as whether or not there is detectable structure in the cosmos. As a result of years of painstaking survey, Smithsonian scientists established that the universe is not organized randomly, and that galaxies are arrayed in thin sheets separating large apparent voids. Recent discoveries such as the so-called "Great Wall" of galaxies are important for understanding 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 satellites to collect images of desert and semi-desert regions of Africa. These images help Smithsonian scientists monitor and understand the process of desertification — or the conversion of vegetated landscapes to desert ones. These scientists are studying phenomena in the upper atmosphere, phenomena such as mechanisms that cause ozone depletion which permits an increase in detrimental ultraviolet

radiation at the earth's surface. Concentrated work on the effects of sunlight on plant development is unlocking the key processes critical to understanding the functioning of forests, both in the tropics and temperate zones.

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 animals 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, Earth is the only known planet that supports life. Another area of ecosystem research of the Smithsonian concentrates on the origin and evolution of Earth's living systems. Smithsonian scientists study the long-term human impact upon the planet; early human populations and their genealogical relationships; and 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 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 with newly-evolved organisms and ecosystems replacing the old ones. Understanding the factors that lead to both stability and change is important in research which interprets ecosystem stability and sensitivity to change on Earth today.

Ecosystems such as tropical rain forests and coral reefs with their associated coastal

### State of Smithsonian Research (Continued)

mangrove swamps are presently under great pressure as a result of human activity. These critical environments are deteriorating rapidly. Although inventories of the species composition of these ecosystems are far from complete, preliminary data indicate that these are by far the richest existing ecosystems in terms of their biological diversity and consequently are of great importance to the earth as a whole. Without the baseline data collected by the Smithsonian, environmental planners cannot make effective management plans to protect these diverse ecosystems.

Just as natural environments are diverse and deterioration threatens them, human cultures are also vulnerable. Smithsonian research focuses on human cultural beginnings, on the nature

and evolution of cultural diversity throughout the world, and on the understanding of cultural change. Often research in the cultural area is intimately linked to public exhibits and performances, including the Folklife Festival held on the Mall each year. In addition, research in the cultural area is closely linked to the Institution's overarching theme of cultural diversity.

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. 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

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The Smithsonian plans management initiatives, African American programming, Quincentenary programs, and other initiatives to acknowledge cultural diversity in the United States. These initiatives respond to public interest in cultural diversity, an historic and continuing characteristic of the Americas and an attribute which contributes to American culture and plays an integral role in this continent's history.

Public interest in cultural diversity presents numerous opportunities for the Smithsonian to pursue its mission "to increase and diffuse knowledge." At the same time, it places many new demands and expectations on the Smithsonian's resources. The Institution plans to adapt its exhibitions and educational programs to provide the public with meaningful and comprehensive interpretations of all cultures. It also supports internal Institutional changes affecting the current profile of its workforce and the cultures represented 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 'nonmainstream' cultures under an idealized bell jar that freezes them in time."

— Robert McCormick Adams, Secretary

In the *Smithsonian Year*, 1989

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## Management Initiatives

Equal access to educational and economic opportunities is increasingly important in the face of labor force predictions for the year 2000. In response to workforce forecasts, the Institution is conducting programs to recruit and hire more women and minority professionals. These programs encourage retention of new hires by promoting a receptive work environment; offer career development and training opportunities to all staff; and generally provide greater Institutional investment in human capital in order to maximize the potential of all its employees. In particular, the Office of Wider Audience Development will coordinate complementary efforts such as working with staff advocacy organizations and participating in various cultural committees and commemorative activities.

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## African American Programs

Increased African American programming on the Mall is central to the Institution's plans to present more culturally diverse exhibitions. In addition, the Institution's management encourages closer

## CHOOSING THE FUTURE

"Jitterbugs" from the National Museum of American Art's exhibition, "Homecoming: William H. Johnson and Afro-America, 1938–1946." The exhibition opened on September 13, 1991 and runs through March 1, 1992.



working relationships with predominantly minority organizations, such as the African American Museums Association and its members. Management supports the efforts of the Smithsonian African American Association, an organization of Institution employees who share the goal of securing equal employment opportunities and program consideration for culturally diverse communities.

In 1990, the Institution established a 22 member advisory committee to examine the form and content of an African American presence on the Mall. The African American Institutional Study Advisory Committee explored such issues as the rationale and mission of an African American museum at the Smithsonian; 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 Committee completed its report in mid-1991 by recommending the creation of a National African American Museum located on the Mall in Washington, D.C. The Smithsonian's Board of Regents unanimously endorsed the Committee's recommendations to establish a museum that focuses on art and materials representing experiences of African American culture. The museum would emphasize four primary areas: the art and material culture of persons of African descent; 20th-century historical material about African Americans in the Civil Rights Movement and the Labor Force; images of African Americans in the media; and African American art.

Deeply rooted in the African American experience, jazz is also one of America's greatest contributions to the world. Funded by a special appropriation from Congress, the National Museum of American History's Jazz Masterworks orchestra made its debut in the Spring of 1991 as part of a new expansion of Smithsonian jazz initiatives. In addition to free concerts of the great jazz artists, the program will publish scholarly editions of jazz works and produce exhibits on jazz history. Through these efforts the Smithsonian is leading the effort to preserve jazz as an American treasure.

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## Quincentenary Programs

The year 1992 marks the 500th anniversary of Christopher Columbus' arrival on this side of the Atlantic Ocean. The Smithsonian museums are offering numerous Quincentenary programs extending into 1993 and beyond. Focusing on biological, historical, and cultural exchanges between cultures, the international and interdisciplinary dimensions of these programs highlight the experiences and contributions associated with Columbus's voyage. Program activities concentrate on the effects of European social, religious, and political concepts and practices that confronted the cultural systems of existing societies in the Americas. Additional activities focus on the consequences for European and African countries of exploring and settling the Americas.

A number of events follow the three-day "Symposium of the Americas," with participants from several countries discussing the different influences on the Americas. A partial listing of events includes The National Museum of Natural History which presents an exhibition entitled "Seeds of Change" along with a wide range of programs, traveling exhibitions, publications, lectures, and symposia. In addition to a companion book and a panel show

co-sponsored by the American Library Association, several other Smithsonian museums present related exhibits during this period. Examples of other exhibits are the National Museum of American History's exhibit, "American Encounters," which examines New Mexico's Upper Rio Grande Valley, home to American Indian, Hispanic, Anglo American, and African American peoples; "Where Next, Columbus?," at the National Air and Space Museum, focuses on the next 500 years of space exploration and related scientific, ethical, and political issues; and "American Painting and Sculpture at the World's Columbian Exposition, 1893," developed jointly by the National Portrait Gallery and the National Museum of American Art, presents artworks exhibited 100 years ago in Chicago.

This partial listing suggests that the Columbus Quincentenary provides numerous opportunities for several Smithsonian museums and offices to participate in this international effort through public programs and scholarly research collaborations. This pan-institutional effort will serve as the basis for continuing programs about the biological, historical, and cultural diversity of the Americas.

### Other Initiatives

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The Institution seeks resources to achieve broader initiatives for cultural pluralism. These initiatives include the Institution's museums and galleries which plan to develop activities in support of the Smithsonian's commitment to offer more culturally diverse programming. For example, the development of programs for the National Museum of the American Indian provides an opportunity for the Institution to evaluate and redouble its effort to strive for increased responsiveness and sensitivity to the conditions, needs, and aspirations of multiple and growing audiences.

In addition, the Smithsonian will seek resources to use media more effectively as a key tool to reach new audiences and distribute educational materials. Recently Smithsonian World, the top-rated prime time public documentary program which produced five one-hour specials annually, concluded operations in the absence of a continuing sponsor. These programs explored 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 Office of Public Affairs, building on its successful programs to reach

African American, Latino and Native American media, plans to develop a comprehensive plan to reach Asian American media. Among the projects previously undertaken for African American, Latino and Native American media that could serve as models for Asian American audiences are radio, television and subway public service announcements, newspaper and radio advertisements, special publications listing resources available, and portable multicultural exhibitions. The Smithsonian Press,



**Katie Henio, a Navajo weaver demonstrates his crafts at the National Museum of Natural History.**

## CHOOSING THE FUTURE

**“Strength and Diversity: Japanese American Women 1885–1900”** is an exhibition of photo panels and text with original objects chronicling the lives of four generations of Japanese American women. The Oakland (Calif.) Museum and the National Japanese American Historical Society organized this exhibition and SITES circulates it nationally.



through its publication and recording programs, will explore ways to increase and improve its material to reach broader cultural audiences. The Smithsonian Traveling Exhibition Service (SITES) seeks additional resources to develop programs interesting to more culturally diverse audiences and affordable to organizations with limited resources.

These examples illustrate the Smithsonian’s commitment to cultural pluralism, a commitment that is evident in programs and permeates the Smithsonian’s museums and related offices. An historical cultural map of the world dated 1492 barely resembles today’s administrative or geopolitical borders because such boundaries change periodically and ideally shows massive, continuing population shifts and growing interdependencies. Today, more

than ever before, changes in this map and in national cultural diversity seem to occur rapidly — changes that are not always welcome. Greater understanding of the biological, historical, and cultural foundations of the world can increase tolerance of cultural differences. We hope that this knowledge can help to minimize negative stereotyping of people labelled minorities; labelling which alienates or excludes them from the mainstream and equal opportunities.

### State of Smithsonian — Workforce Profile

Smithsonian employees are the Institution's most important asset. Dedicated staff perform countless functions from cutting-edge scientific research to facilities maintenance. The Smithsonian works very hard to ensure that the overall workforce adequately and appropriately represents the diversity of cultures inherent in our nation. An integral part of meeting the Institutional mandate "for increase and diffusion of knowledge" requires a variety of cultural perspectives at the Smithsonian's intellectual core. As preservers and presenters of objects which the nation cherishes, it is incumbent on the professional staff of the Institution not only to safeguard its treasures, but also to exhibit and interpret them faithfully for its visitors.

The Institution continues to make improvements each year in recruiting and retaining a culturally more diverse workforce. During 1991, minority representation across the entire workforce increased by almost one full percent. Other positive changes consist of more women and minorities in both the senior and professional ranks, including the new Under Secretary and several senior appointments. The Secretary and his management staff are strongly committed to improving the Institution's profile of women and minorities at the most senior levels.

Employee involvement is growing as illustrated by the numerous employee groups organized in recent years. Among them are the Women's Committee, Smithsonian African American Association, Latino Working Committee, SI Advocates for the Deaf and Hard of Hearing, Asian/Pacific-American Heritage Com-

mittee, and American Indian Committee. These organizations are benefitting and strengthening the Smithsonian through initiatives which assist members and other staff, recruitment efforts, and development of better public programs.

The Smithsonian continues to improve accessibility for disabled persons. The Institution is conducting a comprehensive study to identify barriers and hindrances in both the workplace and in public program areas in order to correct problems as quickly as possible.

The Smithsonian has renamed the former Office of Personnel Administration with a corresponding change in philosophy and mission. The new Office of Human Resources is realigning functions and enhancing internal controls, accountability, and communication to provide better service. A Special Recruitment and Employment Initiatives Branch, established during 1991, assists in recruiting more minorities, women, and disabled persons. This Branch focuses especially on executive and upper level administrative, professional, and curatorial positions. Other initiatives which are currently underway include pay and hiring process reform, improved supervisory training, senior pay implementation, and updating personnel policy.

The Institution is introducing Total Quality Management (TQM) principles. The TQM philosophy encourages continuous improvement in customer service and increased productivity. This management system helps us maximize programs and services to our public, encourages us to use scarce budget and human resources more wisely, and increases employee involvement and satisfaction.

# National Museum of the American Indian

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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 culminated 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

"I take great pleasure today in signing S. 978, the 'National Museum of the American Indian Act.' From this point, our Nation will go forward with a new and richer understanding of the heritage, culture, and values of the peoples of the Americas of Indian ancestry. . . . I am glad for the opportunity to sign this historic measure and grateful to those whose vision and determination have created this occasion."

— George Bush

Statement by the President released  
November 28, 1989.



Children perform  
Andean music with  
artist Pepe Santana.  
(Photo by K. Furth)

## CHOOSING THE FUTURE

"The museum. . . must show Indian culture as the vital living breathing phenomenon that it is. So much of our cultural image problem is created by the fact that many believe that we, along with our culture, are dead, gone, relegated to history. But . . . we are not dead. We are alive, and so is our culture. We have had more than our share of adversity, and so has our culture. But we define the term 'survivor'. Indian culture is dynamic. It is a continuum. It did not end in the 19th century. Its further development and evolution continue as I stand here today. The National Museum of the American Indian must represent and interpret Indian culture as a contemporary living and breathing phenomenon that it is — from its roots in a glorious pre-European contact past to a difficult but vital present."

— W. Richard West, Jr.,  
Director, National Museum  
of the American Indian

1990 Minary Conference,  
Fallen Leaf Lake, California  
September 18, 1990

native cultures of this Hemisphere. The director envisions a living museum that will depict a slice of Indian life, past, present, and future. 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 that might not be able to view the Museum's rich collections on the Mall will have the opportunity to do so through an unprecedented outreach program, including traveling exhibitions. Training opportunities built into the Museum's programs will provide Indian people with access to the collections and to previously limited career development opportunities in the museum field. Indians working with the collections will enhance our knowledge through 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 United States Custom House at the tip of lower Manhattan in New York City; and
- A research, storage, and conservation facility adjacent to the Institution's Museum Support Center 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.

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## 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 1999 and opening it to the public in the year 2000.



**"Intertwined Roots"** was a recent presentation by Jose and Martha de Montano at the National Museum of the American Indian in New York. (Photo by Julia V. Smith)

### **The United States Custom House, New York City** \_\_\_\_\_

The first and second floors of the 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 for November 1992. This exhibition will examine how museums represent living cultures. The Institution anticipates the full opening of the facility to the public in 1993.

### **Collection Research, Storage, and Conservation 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 storage environment which is both secure and culturally sensitive for most of its collection transferred from New York. This facility will give a wide community of academic and traditional scholars an opportunity to study collections and will offer important training programs for Native Americans in museum disciplines. The Institution anticipates completing and occupying the support center facility in fiscal year 1997.

# Bringing Synergism to Contemporary Public Education

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On any school day during fall, winter, or spring, dozens of buses bring children for special tours and classes at the Smithsonian museums. On many evenings, adults gather in museum classrooms for lectures and courses on topics ranging from the African Diaspora to galaxies to abstract expressionism. Throughout the year, traveling events and exhibitions on a wide range of subjects bring Smithsonian collections and research to capacity-filled galleries, museums, and universities across the nation, at the same time that periodicals and other Smithsonian media reach millions of people.

These and numerous other programs indicate that contemporary public education is central to the Institution's public service mission. These activities demonstrate some of the ways that the Smithsonian continues to fulfill its historical mandate "to increase and diffuse knowledge" by engaging the vast resources of the Institution for the contemporary benefit of the many communities it serves. These programs complement one another, providing synergy to the whole spectrum of educational activity at the Smithsonian.

Today Smithsonian education takes many forms, reaches many different audiences, and serves countless people simultaneously. For example, at any one time, the public can explore the hundreds of exhibits in place in the museums or traveling through the United States, each one a multifaceted learning experience. Appealing to specialists such as researchers, students, collectors, and hobbyists, the Institution offers many study collections, archives, and libraries that enable work with objects and specimens, photographs, recordings, documents, and other primary sources. Professional educators utilize an array of training sessions, workshops, symposia, courses, lectures, and publications that present unique opportunities to draw on the Smithsonian's collections and expertise. Individuals of all ages can attend any of a wide variety of public events, performances, lectures, field trips, and workshops that occur most days of the year on the Mall, around the city, and in urban and rural sites

"The stance of the Smithsonian with regard to the educational part of its chartered responsibility for the 'increase and diffusion of knowledge' must be to enhance educational opportunities for all. Certainly it should not be to reinforce prevailing practices that have long tended to 'track' and thus constrain the access of young people to the better and fuller life that only education can offer. It is a broad spectrum of young people that this Institution is best qualified to attract and work with, not merely a selection who come to us already designated as high performers."

— Robert McCormick Adams, Secretary

*In the Smithsonian Year, 1990*

## CHOOSING THE FUTURE

all over the country and throughout the world. Each month the *Smithsonian* magazine brings the Institution to more than two million subscribers. The Institution also reaches across the nation via radio and television programming, books, recordings, and interactive technology.

In the area of continuing education, the Smithsonian Resident Associate Program (RAP) and the Smithsonian National Associate Program (SNAP) provide a wide range of course offerings and other activities for members. For example, RAP's Campus on the Mall is specifically designed for adult professionals, blending academic rigor with a multiplicity of experiences for differing styles of learning. Also under the auspices of RAP, the African

**The Anacostia Museum  
hosts summer science  
classes for children.  
(Photo by Harold Dorwin)**



American Studies Program attracts large audiences to courses and performances focusing on African-American history and culture. At the same time, on a national level, SNAP offers study tours and expeditions, as well as volunteer learning opportunities.

Throughout the Smithsonian, a variety of programs capitalize on the Institution's unique multidisciplinary, multidimensional character. These programs attract diverse audiences for learning beyond the limitations of a structured classroom environment. For example, the National Zoo operates a number of "labs" where visitors of all ages can experiment with hands-on



**A tenth-generation puppet master from Central Java, Indonesia performs shadow puppetry at the Arthur M. Sackler Gallery. The performances were held in conjunction with the exhibition, "Court Arts of Indonesia." (Photo by John Tsantes)**

## CHOOSING THE FUTURE

**“Making a Marisol Portrait Sculpture” a family workshop held at the National Portrait Gallery for children and their parents explored mixed-media sculpture of artist Marisol. Workshops were held in connection with “Marisol Portrait Sculpture” exhibition.**



materials relating to the Zoo’s “biopark” theme. Similarly, the Anacostia Museum serves both as a community museum and as a national resource on African-American history and culture, offering exhibitions and programs that focus on the traditions of Washington, D.C., and the upper South. The Institution’s Office of Folklife Programs attracts millions of people to its annual festival on the Mall, where visitors are able to experience the music, the food, and the oral and craft traditions of cultures from many different parts of the world. The Office of Interdisciplinary Studies produces seminars, books, and other educational materials that present findings of new research in the sciences and humanities, explore gaps in existing knowledge, and contribute to debates on significant issues in contemporary life. The National Museum of American History has established a partnership program with the Duke Ellington School of the arts in which students use a “museum studies” approach to learn academic subjects.

In addressing the national crisis in education, the Institution is working to advance cultural and scientific literacy. It is endeavoring to provide more fellowship, grant, and training opportunities for faculty and students in historically Black colleges and universities, Hispanic colleges and universities with significant concentrations of Asian Pacific Americans. Additional initiatives are in progress with schools in the D.C. area and across the country. For example, the National Museum of Natural History is collaborating



National Museum of African Art Education Specialist Peter Pipim leads a storytelling session; a sign language interpreter for hearing impaired visitors is pictured at right.

with Howard University to provide outreach activities in science to local elementary school students and teachers. Also, the Smithsonian Astrophysical Observatory is reaching out nationally through Project STAR which provides strategies for using astronomy to teach basic science principles to high school students.

Smithsonian efforts to assist school systems include the work of two units in particular: the Office of Elementary and Secondary Education (OESE) and the National Science Resources Center (NSRC). Specifically, these units collaborate with school systems locally and nationally to provide professional training for teachers, to develop and test curriculum materials, and to provide hands-on learning opportunities for students. For example, OESE provides *Art to Zoo*, a quarterly journal for teachers and students, to more than 25,000 schools across the country. The office also conducts a Regional Workshop Program, which serves as a catalyst for strengthening relations between museums and schools and provides summer internships and other programs for teenagers. In addition, the OESE serves as an Institution-wide clearinghouse and focal point for precollege education and works closely with the museums to provide pan-Institutional programming for schools, including summer courses for local teachers.

The NSRC is a joint effort of the Smithsonian and the National Academy of Sciences to improve the teaching of science in the nation's schools. The NSRC provides teachers, science educators, and scientists with current information about science teaching resources, program improvement strategies, and sources of expertise and assistance. The NSRC also develops innovative science curriculum materials; a project currently underway is "Science

Students from NSRC's "Magnets and Motors" sixth grade unit build a motor from a simple coil and a straw compass. (Photo by Dane Penland)



and Technology for Children" — a modular, hands-on science program for children in grades one through six. In addition, the NSRC conducts activities to build leadership for the reform of science curricula at the local level. A major new project, the National Elementary Science Leadership Initiative, will develop a talented pool of educators and scientists who can lead reform efforts in their local communities; stimulate policy and program changes in school districts that will lead to the improvement of elementary school science; and provide technical assistance to school systems throughout the country to help them improve their elementary science programs.

Partnerships with external organizations enable the Smithsonian to leverage its resources. The Institution collaborates with the Quality Education for Minorities (QEM) Network to develop model approaches for improving education for minorities in math, science, and engineering. This collaboration is an important outreach activity for the Smithsonian because the QEM Network's extensive coalitions serve as a unique resource to support national educational goals for the year 2000.

These and numerous other activities show that the Institution continues to pursue its public education mission with energy and dedication. Synergy exists among the many different parts of the Smithsonian, blending a variety of formats and modes of delivery and working effectively to increase knowledge and encourage learning.

Efforts to raise support from private and government funding sources for basic activities are underway. Some changes, such as

developing new relationships with community institutions, especially school systems, will require additional resources.

Continuing efforts to increase synergy among education programs at the Smithsonian include a survey of existing activities, developing training programs to inform staff about external trends and programs, and establishing collaborative relationships with external organizations that have complementary objectives. Continued support of these efforts will make the Institution's educational resources more accessible to diverse socioeconomic communities.

### State of Smithsonian Public Programs

The Smithsonian reaches its diverse audiences through a wide variety of exhibitions, tours, and seminars, as well as publications and other media. This variety forms the basis for the Institution's public programs and provide the context for the public to learn about historical and contemporary subjects vital to understanding major issues at work in today's world. These issues include research to solve environmental degradation; the importance of further advances in technology; and the contributions of many diverse 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 require continuous improvement so that the Institution can offer effective programs.

The Institution is working more closely with communities to identify their educational needs and to interest them in Smithsonian offerings. A central Smithsonian unit, the Office of Elementary and Secondary Education, develops local

and national programs for pre-college education. These programs fall into four categories: professional training for teachers; curriculum materials for schools; programs for young people; and partnerships with schools. Other educational programs result from offices such as the National Science Resources Center, Smithsonian National Associate Program, and the Resident Associate Program. Another program, the Smithsonian Institution Traveling Exhibition Service, is reorganizing and reformulating its products to assist smaller organizations in reaching under-served audiences. The Experimental Gallery uses interactive strategies in all disciplines and explores diverse learning styles for audiences.

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

The Institution is strengthening its public programs and invites public support.

# Institutional Funding Goals—Operations

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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. On September 1, 1838, the funds from the Smithsonian estate, consisting of 105 bags of gold sovereigns, were deposited at the Mint of the United States at Philadelphia.

Today, the total operating budget of the Smithsonian is \$569 million, with approximately 45 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 fluctuates. 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 programmatic and other operational funding goals. Indeed, if it is

“The responsibility of the Nation for the faithful application of the funds is great before the world of mankind in this and in all future ages. I hesitate not to say, and I hope you will all concur with me in the Sentiment, that from the manner in which this trust shall be discharged by the Congress of the United States, the true character of our age and Country will be justly estimated by our civilized contemporaries of other climes, and by the whole civilized world of futurity. A perpetual annuity of more than thirty thousand dollars placed by a Stranger at the disposal of the United States of America, by the agency of their Congress, is an arm of beneficent power, a tribute of glorious confidence, and a burden of deep responsibility unexampled in the history of the world.”

— John Quincy Adams, 1839

From his second lecture delivered at Quincy and Boston as published in *On the Smithson Bequest* (Smithsonian Institution, 1965).

# Smithsonian Institution

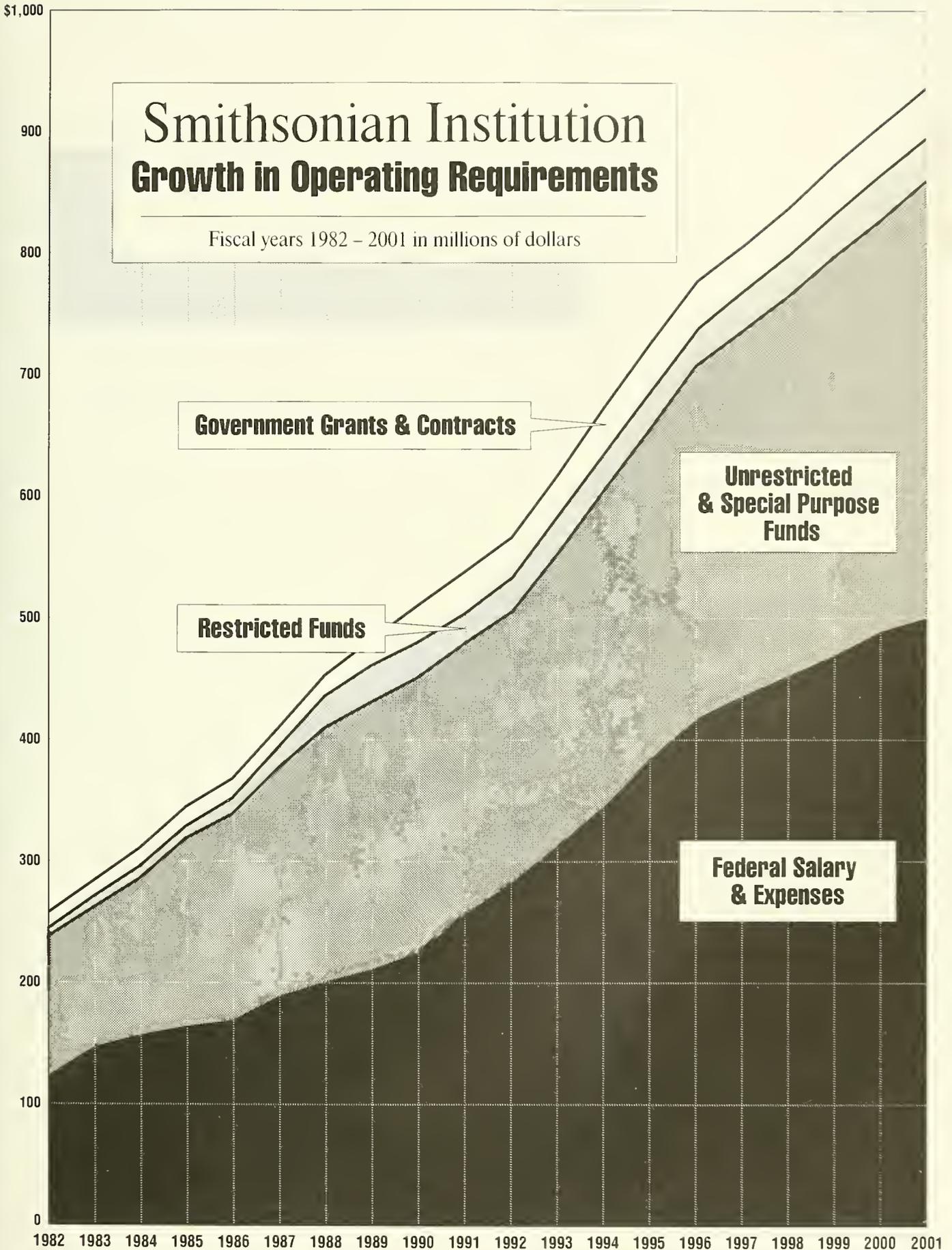
## Growth in Operating Requirements

Fiscal years 1982 – 2001 in millions of dollars

	Federal Salary & Expenses	Unrestricted & Special Purpose Funds	Restricted Funds	Government Grants & Contracts	TOTAL
<b>1982</b>	\$131	\$107	\$7	\$13	\$258
<b>1983</b>	147	115	9	13	284
<b>1984</b>	157	129	10	15	311
<b>1985</b>	164	155	10	16	345
<b>1986</b>	169	170	13	16	368
<b>1987</b>	189	188	17	16	410
<b>1988</b>	201	209	26	17	453
<b>1989</b>	211	220	30	21	482
<b>1990</b>	225	228	28	29	510
<b>1991</b>	258	221	23	37	539
<b>1992</b>	281	223	30	35	569
<b>1993</b>	311	241	30	36	618
<b>1994</b>	345	260	31	37	673
<b>1995</b>	382	273	32	37	724
<b>1996</b>	419	286	33	38	776
<b>1997</b>	435	298	34	38	805
<b>1998</b>	451	313	34	39	837
<b>1999</b>	467	329	35	40	871
<b>2000</b>	483	343	36	41	903
<b>2001</b>	500	359	36	41	936

# Smithsonian Institution Growth in Operating Requirements

Fiscal years 1982 - 2001 in millions of dollars



to continue to be successful in meeting its responsibilities to the public, the museum and scholarly communities, and the nation, the Smithsonian must look ahead.

As illustrated in the preceding chart, the Institution's projection of its federal and trust funding, rests upon funding goals, past income, and the plans of each museum director and program manager. The forecast assumes 1) modest increases in the federal appropriation consistent with past increases, 2) increasing success of fund-raising, and 3) continued success of revenue-producing activities. The Institution revises its funding goals as new information becomes available.

This chapter describes the major sources of operating funds for the Smithsonian. Goals for capital improvement are the subject of a separate chapter.

### Appropriated Funds

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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 1982, S&E appropriations covered operating expenses of \$131 million. By 1991, appropriations were \$258 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, and initial costs for the National Museum of the American Indian. By the year 2001 core operating expenses are projected to be \$500 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.

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## 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 \$114 million in fiscal year 1982 and are currently projected at \$253 million for 1992 (reflects gross income including cost of operations). By the year 2001, these funds are projected to total approximately \$395 million. Government grants and contracts supporting specific research projects were \$13 million in fiscal year 1982 and are forecasted to total \$41 million by the year 2001. 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 Development will solicit funding for existing pan-Institutional projects such as 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), a self-supporting national membership and public outreach arm of the Institution, provides educational opportunities and activities to

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## Membership and Development Activities

Associates and the general public in order to develop loyal national and international constituencies for the Smithsonian. These educational activities, include but are not limited to, educational tours, research expedition programs, lectures, performances, workshops, and in-depth seminars. An important source of income for the Smithsonian, SNAP raises monies for both the Institution's unrestricted trust fund and for special pan-Institutional projects through surpluses generated by the above activities as well as through individual giving and corporate matching programs administered by the Contributing Membership, including the James Smithsonian Society and the Young Benefactors of the Smithsonian. By 1993, the Contributing Membership anticipates 83,000 member households.

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. RAP is committed to the community and provides a wealth of 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; Discovery Theater, a low-cost theater for children and families presenting live dramatic, musical, and puppet performances; and the annual Kite Festival on the Mall. RAP currently serves a membership exceeding 62,000 households. The Program is actively attracting increased participation by the African-American community through its African-American Studies Center.

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 operate the *Smithsonian/Air and Space* magazine which explores human endeavor in flight and in exploration, science, and research within the atmosphere and beyond.

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### 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 800 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.

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### Auxiliary and Other Business Activities

# Institutional Funding Goals— Capital Outlays

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## Repair and Restoration of Buildings

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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 federal 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 concern for the condition of its buildings, many of which appear on the National Register of Historic Landmarks.

The Repair and Restoration of Buildings (R&R) account and a portion of the Zoo Construction account provide federal appropriations for 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 consist of 15 museums and galleries in Washington, D.C. and New York City; the National Zoological Park in Washington, D.C.; 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, on the Chesapeake Bay, and at Front Royal, Virginia; 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 \$220 million in R&R requirements. The R&R program will require at least \$39 million of annual funding (other than the Zoo) 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;

- Modification of Smithsonian buildings to increase accessibility to disabled persons;
- 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, Smithsonian Institution (Castle), Air & Space, and American Art and Portrait Gallery buildings.

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

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### Repairs, Restoration, and Code Compliance

This subaccount funds routine R&R 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.

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### 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



As a part of major renovation and expansion project at the Freer Gallery of Art, the Institution excavated the central courtyard to make room for expanded research and collections storage areas below. (Photos by Jeffrey Crespi)

the heating, ventilating, and air-conditioning systems. The majority of the HVAC equipment is now more than 25 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.

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### **HVAC System, American History Building**

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 25-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 downtime in each area of the building. Work began on the project in 1987, and the Museum expects to complete the project in 1995. A subsequent project will replace systems in the basement.

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### **HVAC and Electrical Systems, Natural 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.

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 Arts and Industries and Smithsonian Institution buildings) is approximately 40 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 its exhibit reinstallation program with the renovation project.

One of the finest examples of Victorian architecture in the nation, the Arts and Industries Building also needs extensive repair. The heating, ventilating and air-conditioning equipment, and electric and other utility systems are now reaching the end of their useful life and must be replaced. In addition the underground utility trenches 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 will renovate these utility tunnels and refurbish the HVAC, electrical, and other utility systems over the next five years.

The Institution’s first building is now more than 140 years old. The last renovation of the major building systems took place in the 1960s. The mechanical (HVAC) and electrical systems are near the end of the life spans normally projected for such systems. New, modern equipment, sized to meet the needs of current and projected activities in the building, will provide more effective climate control and ensure continued operation and long-term preservation of the building. Energy conservation opportunities can also be expected to provide future savings in operating and maintenance costs.

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**HVAC System, Utility  
Tunnels, Arts and  
Industries Building**

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**HVAC and Electrical  
Systems, Smithsonian  
Institution (Castle)  
Building**

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### **Environmental Conditions Improvements, Air and Space Building**

Construction of the Air and Space Building was started in 1974; it opened to the public in the summer of 1976. The Museum has experienced a variety of environmental problems almost from the beginning. The Institution will complete a physical survey of all major building components, analyze the interactions of present and future physical plant modifications, and evaluate the impact of proposed programmatic changes on the overall operation of the building. The staff will then develop a phased implementation plan for physical plant maintenance and renovation to provide an appropriate, as well as energy efficient, environment for museum operations.

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### **HVAC System, American Art and Portrait Gallery Building**

The 25-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 there. These improvements will, for example, provide more precise control of humidity and provide building technicians with the capacity to operate both heating and cooling systems during the transitional seasons to maintain appropriate temperatures. In addition, the phased project will include repair or replacement of 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 about \$220 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 re-

search 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 federal appropriations 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

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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. During the planning period, supported with appropriated and nonappropriated funds, the Institution will continue alterations of the Freer Gallery, including the construction of the tunnel linking the Freer with the Sackler Gallery, expansion of storage space, renovation of the basement and gallery levels, and skylight and roof replacement. The Smithsonian recently completed a new base camp at the Whipple Observatory and is constructing 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, including appropriated and nonappropriated sources of funds, of the comprehensive construction program for the next decade is in excess of \$1.2 billion including construction and improvements for the National Zoological Park of more than \$161 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.

### Administrative Service Center

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Approximately 15 years ago, the Smithsonian 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. Two factors have prompted the

Institution now to acquire a replacement for this leased facility. First, the current lease expires in the fall of 1994. 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 certain administrative functions in other leased spaces. Such a facility would continue the policy of reserving space on the Mall for public programs and research, while reducing dependency on leased space.

Once Congressional authorization for the project is received the Institution will solicit proposals for land and its development or the renovation of an existing building to meet Institutional needs. Convenience to the Mall will be a key factor in site selection. The cost of the land and construction of the Center is estimated at \$60 million. Of this, a portion will be advanced from the Institution's trust funds and the balance will be obtained from private lending sources. These funds will be repaid over thirty years from a combination of appropriated and trust funds now used for leased space at the existing Service Center and other locations, and additional appropriations.

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## African American Museum

In 1990, the Institution convened an advisory committee to provide guidance to the Smithsonian's study of the form and substance of a potential institution dedicated to the study and exposition of African American history, art, and culture. Interest in such a museum has been expressed by a number of influential citizens and museum associations. The Smithsonian's Board of Regents have indicated their support in principle for the committee's unanimous conclusion that there should be a free-standing African American museum at the Smithsonian, and that the museum should be housed in the Arts & Industries Building.

As currently envisioned by the Institution, the African American museum would be dedicated to the collection, preservation, research, and exhibition of African American historical and cultural material reflecting the breadth and depth of the experiences of persons of African descent living in the United States. The museum would embrace broad perspectives, such as exploring diversity within the African American experience and the historical and cultural roots of racial perceptions, that would contribute to the understanding of the total American experience. Through research, exhibitions, and formal and informal educational programming, the museum would play a strong role in public education. The museum also would provide a central focus to collaborative collecting efforts across the country through a shared collections

# SMITHSONIAN INSTITUTION

## Long Range Capital Program

### (Estimated Costs and Funding Sources for Scheduled Projects) \*

#### Fiscal Years 1993 – 2001 (Millions of 1991 Dollars)

	Authorized	FY 1992 – 2001 Cost	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001
<b>Administrative Service Center \1</b> Appropriated Funds (Salaries & Expenses) Non – appropriated Funds	No	\$39.5 \$33.0 \$6.5			\$4.5 \$4.0 \$0.5	\$5.5 \$4.5 \$1.0	\$5.5 \$4.5 \$1.0	\$5.5 \$4.5 \$1.0	\$6.0 \$5.0 \$1.0	\$6.0 \$5.0 \$1.0	\$6.5 \$5.5 \$1.0
<b>African American Museum \2</b> Appropriated Funds (Construction) Non – appropriated Funds	No	\$1.7 \$1.7 \$0.0	\$0.2 \$0.2	\$1.5	no cost estimates or schedules developed to date						
<b>Air and Space Museum Extension</b> Appropriated Funds (Construction) Non – appropriated Funds	No	\$162.0 \$107.0 \$55.0	\$2.0 \$1.0 \$1.0	\$7.0 \$7.0	\$153.0 \$99.0 \$54.0						
<b>American Indian Museum Custom House Renovation \3</b> Appropriated Funds (Construction) Non – appropriated Funds	Yes	\$166.7 \$19.1 \$1.4 \$1.7 \$16.0	\$2.1 \$1.1 \$1.1	\$36.1	\$12.0	\$0.0	\$87.5	\$10.0			
<b>Suitland Collection Storage \4</b> Appropriated Funds (Construction) Non – appropriated Funds		\$42.7 \$42.7	\$1.0 \$1.0	\$29.7 \$29.7	\$12.0 \$12.0						
<b>Mall Museum Building \4</b> Appropriated Funds (Construction) Non – appropriated Funds		\$104.9 \$69.6 \$35.3	\$1.0 \$1.0	\$6.4 \$6.4			\$87.5 \$52.2 \$35.3	\$10.0 \$10.0			
<b>Fulfillment Center \5</b> Non – appropriated Funds	N/A	\$0.0 \$0.0	no cost estimates or schedules developed to date								
<b>General Post Office Building \4</b> Appropriated Funds (Construction)	Yes	\$40.0 \$40.0	\$1.7 \$1.7	\$1.3 \$1.3	\$1.0 \$1.0		\$36.0 \$36.0				
<b>Natural History East Court In – fill</b> Appropriated Funds (Construction)	Yes	\$28.5 \$28.5	\$10.0 \$10.0	\$5.0 \$5.0							
<b>Scholar's Residence \6</b> Appropriated Funds (Construction) Non – appropriated Funds	No	\$0.0 \$0.0 \$0.0	no cost estimates or schedules developed to date								
<b>Smithsonian Marine Station at Link Port</b> Non – appropriated Funds	N/A	\$6.5 \$6.5	\$6.5 \$6.5	no cost estimates or schedules developed to date							

	Authorized	FY 1992 - 2001 Cost	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001
<b>Suitland Collections Research Center</b> \4 Appropriated Funds (Construction)	No	\$197.0 \$197.0	\$0.5 \$0.5	\$4.5 \$4.5	\$56.0 \$56.0	\$13.0 \$13.0	\$50.0 \$50.0	\$10.0 \$10.0	\$3.0 \$3.0	\$50.0 \$50.0	\$10.0 \$10.0	
<b>Tropical Research Institute</b> Appropriated Funds (Construction)	Yes	\$2.0 \$2.0			\$2.0 \$2.0							
<b>National Zoological Park (Zoo Construction)</b>	Yes	\$161.7	\$8.0	\$20.3	\$20.5	\$25.2	\$19.7	\$18.9	\$11.1	\$12.0	\$18.1	
Rock Creek Park Master Plan		\$93.8	\$4.6	\$14.3	\$12.4	\$20.9	\$15.6	\$12.6	\$5.0	\$5.0		
Appropriated Funds		\$86.8	\$4.6	\$14.3	\$12.4	\$13.9	\$15.6	\$12.6	\$5.0	\$5.0		
Non-appropriated Funds \7		\$7.0			\$7.0							
<b>Rock Creek Renovations &amp; Repair</b>	Yes	\$27.6	\$2.0	\$2.0	\$2.2	\$2.3	\$2.4	\$2.6	\$3.3	\$3.9	\$4.5	
Appropriated Funds		\$27.6	\$2.0	\$2.0	\$2.2	\$2.3	\$2.4	\$2.6	\$3.3	\$3.9	\$4.5	
<b>Front Royal Development Plan</b>	Yes	\$27.8	\$0.6	\$3.2	\$4.9	\$1.0	\$0.7	\$2.7	\$1.3	\$1.1	\$11.1	
Appropriated Funds		\$27.8	\$0.6	\$3.2	\$4.9	\$1.0	\$0.7	\$2.7	\$1.3	\$1.1	\$11.1	
<b>Front Royal Renovations &amp; Repair</b>	Yes	\$12.5	\$0.8	\$0.8	\$1.0	\$1.0	\$1.0	\$1.0	\$1.5	\$2.0	\$2.5	
Appropriated Funds		\$12.5	\$0.8	\$0.8	\$1.0	\$1.0	\$1.0	\$1.0	\$1.5	\$2.0	\$2.5	
<b>Alterations &amp; Modifications</b>	Yes	\$67.5	\$4.5	\$8.0	\$8.0	\$8.0	\$8.0	\$8.0	\$6.5	\$6.0	\$6.0	
Appropriated Funds (Construction)		\$67.5	\$4.5	\$8.0	\$8.0	\$8.0	\$8.0	\$8.0	\$6.5	\$6.0	\$6.0	
<b>Construction Planning</b>	Yes	\$13.5	\$0.8	\$0.7	\$1.5	\$1.5	\$1.5	\$1.5	\$1.5	\$1.5	\$1.5	
Appropriated Funds (Construction)		\$13.5	\$0.8	\$0.7	\$1.5	\$1.5	\$1.5	\$1.5	\$1.5	\$1.5	\$1.5	
<b>Repair &amp; Restoration of Buildings</b>	Yes	\$360.0	\$23.6	\$24.4	\$39.0	\$39.0	\$39.0	\$39.0	\$39.0	\$39.0	\$39.0	
Appropriated Funds		\$360.0	\$23.6	\$24.4	\$39.0	\$39.0	\$39.0	\$39.0	\$39.0	\$39.0	\$39.0	
<b>Scheduled Projects Grand Total</b>		\$1,246.6	\$67.6	\$62.3	\$124.2	\$141.5	\$248.2	\$211.2	\$128.9	\$67.1	\$114.5	\$81.1
<b>Totals By Funding Source</b>												
<b>Appropriated Funds Total:</b>		\$1,120.3	\$51.6	\$54.8	\$124.2	\$141.0	\$186.2	\$174.9	\$127.9	\$66.1	\$113.5	\$80.1
Construction		\$570.9	\$19.4	\$21.4	\$64.9	\$77.5	\$124.5	\$111.7	\$65.5	\$11.0	\$7.5	\$17.5
Zoo Construction		\$154.7	\$8.0	\$7.9	\$20.3	\$20.5	\$18.2	\$19.7	\$18.9	\$11.1	\$12.0	\$18.1
Repair & Restoration of Buildings		\$360.0	\$23.6	\$24.4	\$39.0	\$39.0	\$39.0	\$39.0	\$39.0	\$39.0	\$39.0	\$39.0
Salaries & Expenses		\$34.7	\$0.6	\$1.1	\$0.0	\$4.0	\$4.5	\$4.5	\$4.5	\$5.0	\$5.0	\$5.5
<b>Non-appropriated Funds Total</b>		\$126.3	\$16.0	\$7.5	\$0.0	\$0.5	\$62.0	\$36.3	\$1.0	\$1.0	\$1.0	\$1.0

\* Estimates are subject to revision as a result of timing associated with Smithsonian planning/budget cycles and incorporation of more detailed planning information.

\1 Mortgage cost in the range of \$50 - \$60 million to be amortized over 30 years by applying base funds for current lease costs as well as additional appropriated and non-appropriated funds.

\2 No estimates of costs or schedules are available at present. The amounts projected for FY 1993 and FY 1994 represent estimated cost of programming and planning for renovation of the Arts & Industries Building.

\3 Prior year funding includes \$6.6 million in appropriated funds. Non-appropriated funds of \$16 million are from the City and State of New York. Equipping will be funded with FY 1992 & 1993 S&E appropriations.

\4 Very preliminary estimate indicates "order of magnitude" construction costs only.

\5 The Institution will make a final decision on whether to relocate business fulfillment activities to a facility outside the Washington area when the feasibility study, funded with FY 1991 appropriations, is complete.

\6 The Institution is currently exploring, along with a consortium of other scholarly organizations, ways to improve housing opportunities for visiting scholars. One possibility is to acquire or construct a residential facility provided such a facility could be constructed without seeking appropriated funds. A study to assess requirements has been completed, but no specific detail as to site, costs or schedules have been developed.

\7 Parking revenues are expected to contribute \$7 million toward construction of the parking facility.

database to document museum collections and make them more accessible to scholars and the public.

Staff is currently studying a number of programmatic issues related to the establishment of a new museum, including identifying core collections. During FY 1992 and 1993, the Institution will begin museum programming and definition of facilities requirements and preliminary cost estimates.

### 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 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 many of them to existing facilities. The advanced age and deterioration of the Suitland buildings jeopardizes preservation of museum artifacts. Many of the approximately 23 metal structures date from the 1940s and early 1950s and have an estimated life span of less than 10 to 15 more years. Also, the buildings do not provide climate control necessary for preservation.

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 recent developments in the history of air- and spacecraft technology and applications 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 simple display of contemporary aircraft and spacecraft. Such a facility, located and constructed to accommodate large-scale artifacts, would make them available for viewing by the public.

Legislation is currently pending in Congress to authorize the Institution to plan and design the Air and Space Museum Extension.

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## National Museum of the American Indian

The Institution plans to construct a new museum building for the National Museum of the American Indian on the last remaining site on the Mall, the area bounded by Third Street, Maryland Avenue, Fourth Street, and Jefferson Drive. The Institution also will build a conservation, collections housing, and research facility in Suitland, Maryland, and will operate a satellite exhibition and education center in a portion of the United States Custom House in New York City. The Institution anticipates federal appropriations for construction of the new facilities and also is seeking support from private sources.

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## Fulfillment Center

The Institution is conducting a study, using funds appropriated in FY 1991, to determine the feasibility of relocating business fulfillment activities, such as mail order and perhaps others, in a facility outside the Washington area. A final decision will not be made until completion of a detailed business plan. The plan will identify operations that might be relocated, analyze cost benefits, establish criteria for the new facility, and project potential costs at various locations.

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## 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 the city 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

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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. Two hundred thirty scientists and their staffs, and more than 3,000 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 visitors each year. 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 optimal 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 create 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 80,000 net 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 began the conceptual design phase in fiscal year 1991 and will complete the design in fiscal year 1992.

## Scholars' Residence

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The Institution is currently exploring, along with a consortium of other scholarly organizations, ways to improve housing opportunities for visiting scholars and similar persons. One possibility, which would have the additional benefit of helping build collegial relationships, would be the acquisition of a residential facility which would provide temporary housing for visiting scholars. Currently over 1,000 scholars participate in study and research activities each year at the Smithsonian Institution, the Woodrow

Wilson Center, the National Gallery of Art, and the Library of Congress. Some of these scholars come to Washington for only short periods of time, and locating suitable, economical housing is a problem. The Institution will continue to explore options and alternatives before making a final decision on the project.

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### **Smithsonian Marine Station at Link Port**

In an effort to address an urgent need for long-term study and monitoring of coastal wetland and marine biological diversity, the National Museum of Natural History plans to construct permanent laboratory facilities to house the Smithsonian Marine Station. The Smithsonian presently operates the Station in temporary facilities on leased properties at Link Port, just north of Ft. Pierce, Florida. With recent national attention on the issue of biological diversity, the need for construction of permanent laboratory and housing facilities at this site has become pressing. The Link Port laboratory would serve as the regional biodiversity lab for the coastal marine area from Cape Hatteras south, along the Atlantic coast and through the Florida Keys. The Institution intends to seek non-appropriated funds for the project, in collaboration with other Federal, state and private institutions.

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### **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. While the Museum Support Center, which 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 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 anticipates a need for almost three million square feet of new storage and collections-management, conservation, and research support space over the next 20 years.

The age and condition of the present storage buildings at the Suitland location 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.

## CHOOSING THE FUTURE

Most of these buildings have a life expectancy of less than 10 to 15 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 temporary Suitland buildings, do not provide environmental conditions suitable for long-term preservation of museum artifacts.

A recently completed study determined that space is available on the Smithsonian's Museum Support Center property in Suitland, Maryland, to accommodate the identified requirements. The Smithsonian plans to sequence construction of a new Collections Research Center at Suitland over the next 10 to 20 years. Space also will 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.

### Smithsonian Tropical Research Institute

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The Smithsonian Tropical Research Institute (STRI), located in the Republic of Panama, is the nation's principal center for tropical biology. Until recently, STRI facilities included 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 Earl S. Tupper Research and Conference Center was dedicated in 1990 at the headquarters site in Tivoli. The Institution is completing new laboratory, dining, conference, residential, and docking facilities on Barro Colorado Island. The Smithsonian will upgrade the Atlantic research facilities and will purchase and equip a new floating laboratory. STRI plans to build a new workshop and maintenance facility adjacent to the Tivoli site to provide a central location for ongoing maintenance of its buildings and its fleet of vehicles and boats.

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## 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 consider additional requirements that will extend well beyond the year 2000.

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## 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.

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## Zoological Park and Conservation Research Center Master Plan

In keeping with its 1889 charter, the National Zoological Park (NZP) 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 Research Center in Front Royal, Virginia. Since 1890, exhibition and public educational functions have centered at the Rock Creek Park location. Conservation, research, and breeding functions take place at both Rock Creek and Front Royal. This section surveys the construction and improvement projects anticipated over the planning period for both locations.

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

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### Olmsted Walk

## CHOOSING THE FUTURE

Olmsted Walk renovation. With continued federal support in fiscal year 1993, 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.

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### 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 Amazonia River, Rainforest Gallery, and Aquatic Habitat complexes. The Loop Trail will connect these major exhibits and other animal areas with the main Olmsted Walk.

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### 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 facts that more than 60 percent of the world's vertebrate animals are fish and that the general public knows little about aquatic animals. The theme of Living in Water the cradle of life on Earth will be illustrated by new aquatic

**Aquatic Habitat/  
Amazonia Exhibit —  
Internal view from  
second level, Forest floor,  
looking up at installation  
of the transparent roof  
system. The entire second  
floor will replicate the  
Amazonia stream/forest  
environment with ap-  
propriate flora and fauna.  
(Photo by Jessie Cohen)**



exhibits and an exhibit complex that will provide an excellent opportunity to educate and entertain the general public about a wide range of engaging and important groups of animals.

The aquatic exhibits will include four components which together, will fully embody the BioPark 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, a diversity of fishes, invertebrates, birds, and amphibians, as well as vegetation in a natural habitat, a tropical river. 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 8,000-square-foot Amazonia Gallery that will contain the Smithsonian Tropical Science and Global Environmental Events 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 an introductory module and will 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.

For more than a decade the Institution has had a long-range plan for a centralized multilevel 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.

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### Parking Facility

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### Grasslands and Forests Exhibitions

The Zoo proposes to develop three exhibitions during the coming decade, each representing a distinct ecological and geographic area. These will include: American Grasslands, African Grasslands, and Forests. In each grassland recreation, the Zoo will emphasize the botanical elements of these important ecosystems.

The American Grasslands exhibition 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 exhibition. The American Grasslands exhibition will quarter mara, giant anteaters, capybara, maned wolves, rhea, and guanacos.

The African Grasslands exhibition 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 exhibition will include species such as the zoril, aardvark, fennec fox, cobra, and insects. The Zoo plans to include gazelle, crowned crane, meerkat, duiker, and klipspringer in the Desert exhibition.

The Forests exhibition 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.

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### Children's Facility

The Zoo plans to construct a Children's Facility beginning in fiscal year 1995. The new exhibition 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 exhibitions, 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.

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### Master Plan (Ten-Year Update)

A master plan is an essential road map for institutional growth and change. Opportunity and innovation prompt detours, but the main objectives of the master plan guide resource planning and internal and external communication. The NZP Master Plan was last revised in 1986. Most of the major elements, e.g. realignment and landscaping of Olmsted Walk, and Aquatic Trail, and the Grasslands and Forests exhibitions are scheduled for FY 1993–1995. The Zoo plans to develop a new ten-year Master Plan

by 1996. This is especially crucial given the Zoo's evolution as a BioPark.

Built about 1805, Holt House is a Category II landmark on the National Register of Historic Places. It occupies one of the highest sites in Washington, D.C., and is gracefully wooded, private, and secure within the NZP perimeter fence. However it is in serious disrepair, requiring about \$1 million of structural and utility renovations. The Zoo envisions modernizing and converting the Holt House to apartment and dormitory living quarters, offices, and a conference room for visiting scientists and for training courses.

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### Holt House

NZP's primary mission is education. Its main resources are the collection of living animals and plants and associated interpretive programs. But these are available to all of the visiting public, and may not offer sufficient detail, interactive opportunity or flexibility for advanced educational efforts. The Zoo proposes constructing Window on Life, a biological learning center for students of all ages and for their teachers. This Center would have classrooms for group instruction and teacher training, and laboratories for specially talented students to conduct original research. Window on Life would anchor long-term mentoring programs and minority outreach programs by providing a scholarly commons for students and teachers who lack a place for contemplation and collegial interaction. The overall goal is to facilitate scientific, primarily biological, literacy in Washington area young people.

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### Window on Life

Birds, bats, and insects fly, as did now-extinct reptiles. Flight evolved independently at least three times, and depends on a variety of convergent but decidedly unique body structures and relationships. Humans have imitated some of these to become the supreme flyers. The National Air and Space Museum tells the human part of the story, and flying animals are shown in the Zoo in various taxonomically based collections, but nowhere is the theme of flight with all of its fascinating interconnections brought together. NZP's Bird House will soon need renovation, providing an opportunity for the synthetic treatment of the theme of flight that is appropriate for the BioPark. Hummingbirds, ostriches, bumblebees, "flying foxes" and "flying fishes," fruit bats, pterosaurs, wind-borne seeds, parachutes, and aircraft will be shown together to explore the origins, mechanisms and purposes of flight.

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### Hall of Flight

## CHOOSING THE FUTURE

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### NZP Bridges

The National Zoo has three bridges across Rock Creek. The oldest is the stonebridge leading to the Blue Road built in the early 1900s. The next oldest is the bridge to Beach Drive. NZP's third bridge, the Harvard Street Bridge, crosses both Rock Creek and Beech Drive, and was constructed in 1964. The Zoo plans to survey these bridges in 1997 to ensure their structural compliance with all applicable highway safety and use standards and to begin renovation in 1998. The degree of the renovation will be dependent on the findings of the engineering survey.

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### Blue Road

The so-called Blue Road dates from the early 20th century. Approximately one half mile in length, much of it rises above the jogging-bike path next to Rock Creek, and relies upon a stone retaining wall for support. Years, use, and water damage have undermined sections of this road, creating a potential safety hazard. The Zoo will contract to develop an engineering plan for reconstruction/repair as necessary and resurfacing. The Blue Road is not part of the public circulation system, but is an essential part of its internal circulation, providing access for emergency vehicles, including the Zoo's veterinarians and police to portions of the Zoo along the Creek and to the research facilities near Adams Mill Road.

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### Maintenance Facility

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.

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### Multi-Purpose Animal 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.

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### Road Extensions

The Conservation Research Center at Front Royal, Virginia plans to develop an infrastructure that will serve equally any of the major functional paths that the Center may follow in the next 20 years. The Center also will redesign the road system to im-

prove vehicular access to outlying areas and will repair or replace deteriorating existing roads.

The Zoo's Conservation Research Center will continue to expand its widely acclaimed international training programs. These programs have now involved more than 35 countries. The Zoo plans to construct a new complex of classroom, laboratory, auditorium, and living and recreational space that will serve its training and small conference needs.

This facility 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.

Major changes in land use patterns resulting from construction and renovation of buildings necessitates upgrading the distribution of water, sewage and electricity.

The Conservation Training Center requires interior modifications to create a laboratory and lecture hall, and to upgrade the cafeteria and kitchen for workshops and training courses. The new cafeteria should be capable of serving up to 100 people for training course and workshop functions as well as special events.

After two decades of program growth and a tenfold increase in staff, the Conservation and Research Center will have outgrown its present administrative headquarters by 1995. The Administration-Education Building will replace the 76-year-old building, provide space for the administrative staff, the library, and provide a conference room and public visitation facilities for conservation education and volunteer staff.

Limited animal quarantine facilities require major expansion to accommodate growing programs in reintroduction and endangered species rescue while emphasizing veterinary care and control of disease.

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**Training Center**

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**Pachyderm Facility**

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**Upgrade Utilities  
Distribution**

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**Conservation Research  
Laboratory**

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**Administration-Education  
Building**

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**Animal Quarantine  
Expansion**

### Into the 21st Century

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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;
- 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;
- 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.

# NOTES

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

## Smithsonian Institution

Five-Year Prospectus ♦ Fiscal Years 1993 – 1997