

SMITHSONIAN INSTITUTION

FISCAL YEAR 1972 ESTIMATES OF APPROPRIATIONS

TABLE OF CONTENTS

	<u>Page</u>
GENERAL STATEMENT	i
"SALARIES AND EXPENSES" FOR REGULAR AND SPECIAL PROGRAMS	Tab A
Summary Statement	A-1
Summary of the 1970 Appropriation and the 1971 and 1972 Estimates	A-2
Justification of Budget Estimates Relating to:	
Necessary Pay	A-5
<u>Science</u>	
Introduction	A-10
✓ National Museum of Natural History	A-11
✓ Smithsonian Astrophysical Observatory	A-22
? Smithsonian Tropical Research Institute	A-25
✓ Radiation Biology Laboratory	A-30
✓ Office of Environmental Sciences	A-35
✓ National Air and Space Museum	A-38
Center for the Study of Man	A-40
Center for Short-Lived Phenomena	A-43
✓ National Zoological Park	A-46
<u>History and Art</u>	
Introduction	A-59
National Museum of History and Technology	A-60
National Collection of Fine Arts	A-63
National Portrait Gallery	A-65
? Joseph H. Hirshhorn Museum and Sculpture Garden	A-69
Freer Gallery of Art	A-72
Archives of American Art	A-73
National Armed Forces Museum Advisory Board	A-75
<u>United States National Museum</u>	
Introduction	A-76
Office of Museum Programs	A-77
Office of Exhibits	A-78
Conservation Analytical Laboratory	A-79
Office of the Registrar	A-81
<u>Public Service</u>	
Introduction	A-82
Anacostia Neighborhood Museum	A-83
Office of International Activities	A-84
International Exchange Service	A-85
Division of Performing Arts	A-86
Office of Public Affairs	A-87

Special Programs

Page

Program Statement	A-88
American Revolution Bicentennial	A-89
Environmental Sciences	A-92
Major Exhibitions (World of Living Things)	A-95
National Museum Act	A-101
Academic and Educational Programs	A-109
Research Awards	A-118

Administrative and Central Support Activities

Introduction	A-123
Office of the Secretary	A-124
Office of the General Counsel	A-125
Office of the Treasurer	A-126
Office of Personnel Administration and Health Units	A-127
Smithsonian Institution Libraries	A-129
Smithsonian Institution Press	A-132
Information Systems Division	A-133
Smithsonian Institution Archives	A-134
Photographic Services Division	A-135
Supply Division	A-136
Administrative Systems Division	A-137
Duplicating Section	A-138
Other Central Support	A-139

Buildings and Facilities Management

Buildings Management Department	A-140
---------------------------------------	-------

"SALARIES AND EXPENSES" FOR THE SCIENCE INFORMATION EXCHANGE	Tab B
---	-------

MUSEUM PROGRAMS AND RELATED RESEARCH (SPECIAL FOREIGN CURRENCY PROGRAM)	Tab C
--	-------

RESTORATION AND CONSTRUCTION	Tab D
------------------------------------	-------

Construction and Improvements, National Zoological Park ..	D-1
Restoration and Renovation of Buildings	D-3
Construction, Joseph H. Hirshhorn Museum & Sculpture Garden	D-5
Planning and Redesign, National Air and Space Museum	D-5
Schedule of Building Projects	D-7

APPENDIX	Tab E
----------------	-------

Number of Permanent Positions by Organization Unit	E-1
Obligations by Objects, "Salaries and Expenses"	E-2
Visitors to Smithsonian Buildings, FY 1961 through 1970 ...	E-3
Significant Exhibits, FY 1970	E-4
Work Performed Under Grants and Contracts from Federal Agencies	E-5

SMITHSONIAN INSTITUTION

FISCAL YEAR 1972 ESTIMATES OF APPROPRIATIONS

GENERAL STATEMENT

This past year has been one of measured progress for the Smithsonian Institution. Where many of the prospects of the nation seem fraught with dissent and division, where the path of education has become obscured by the divisiveness which has beset the academies, the smaller private institutions of learning seem to have survived so far relatively unscathed. Like other institutions concerned with research and study, however, the Smithsonian suffered in the past year from the general decline in support for science as well as to related areas of study. Our problem with the declining government budgets for the support of basic science has been compounded by the tax reform act which produced a serious paralysis of will on the part of the foundations. In addition, the steadily worsening effects of inflation on the costs of personnel, research equipment, objects for the collections, as well as on the everyday supplies and materials for general museum and laboratory operations further threaten the Smithsonian's ability to carry out its traditional responsibilities.

One encouraging development has been a widening awareness that the Smithsonian's activities represent a kind of unity. In spite of the many bureaus, some of them incorporated in large buildings on the Mall and others located in laboratories in Washington and elsewhere, there are a series of unifying themes which run through the Institution's activities. Our concerns remain united around the general subject of history: history of art, science, and technology including the history of air and space flight, and the delineation of these histories through public exhibition. In addition, our science activities revolve generally around the compilation of statistics, information, and research about the biosphere and space. Our classical concerns in natural history and in astrophysics have come full circle so that today we can proudly claim our work to be of vital importance in the new sciences of the study of the environment on the one hand and of outer space on the other.

Within these common themes there are overriding considerations for the public good. Education and public exhibition are of paramount concern for all our main buildings and for the curators and the research staff who inhabit them. Education through research and publication remains paramount in the other bureaus whose activities are not contained in the large public buildings. In addition, Joseph Henry's initial concern with bringing scholars together with colleagues in foreign countries continues to be developed and encouraged through our foreign currency program as well as research activities both here and abroad.

In Joseph Henry's view the Smithsonian existed to stimulate research in pursuit of new truths and to make these available to both the public and to professionals, in the arts, sciences, and cultural history. His favorite phrase to describe the Institution's ultimate aim was a "College of Discoverers." This is still the unifying force, the common factor in all the diverse bureaus and museums of the Smithsonian--the Institution as a "College of Discoverers" which:

- First, keeps records of knowledge through its collections;
- Second, serves as a stimulus to research largely through its collections;
- Third, and perhaps most important, uses the collections and the results of research for public education.

These three elements may be found to a greater or lesser degree in all the bureaus of the Smithsonian, as they are today.

Increasingly, the Institution's bureaus and offices are engaged in common efforts. Notable among these are the contributions that will be made in the national celebration of the American Revolution Bicentennial and in studies of the environment. We have begun to lay-out long range plans for ecological assessments in both the New World temperate and tropical zones and in the Old World. We are uniquely equipped through processing and working with the National Collections to contribute to solutions, but we are pitifully undersupported financially to make our contributions effective.

In spite of appropriation increases each year, which have averaged somewhere between 6 and 8 percent, costs have continued to escalate so much that our scientists' work and our research and exhibits potential have been seriously undermined. Little has been allowed for growth, expansion and change, so necessary for a healthy concern, be it a corporation, university, or a research and museum complex. Examples of such needs are continuing additions to art, history, and science collections, modern inventory computerization for these collections, and development of new experimental ideas and fields of study.

While vigorously seeking additional federal fund support for these purposes, we are at the same time carrying out a program of self-examination of the use of our total resources with the objective of reducing or eliminating outmoded or low-priority activities.

Planning is of the utmost importance in all Smithsonian activities. Growth must be brought into effective relation to the availability of resources, especially for an establishment such as ours with more than forty line items in our federal budget, each of which could very readily be expanded to meet some external or internal need. We are strengthening the planning function within the Institution to maintain a balance between our pattern of commitments and the resources we may expect. It has been our judgement, however, that the Institution would have to inaugurate some new programs and achieve order-of-magnitude increases in some support activities in order to function successfully for the 1970s. With inflation, the requirements for new tools and techniques, and the ever-increasing demands placed on our staff, our budget meets no more than one-half of our requirements. The elimination of remaining shortages is a priority objective in our planning, for the next several years.

The central concerns of the Smithsonian represent national needs for the kind of sustained commitment that can be made only by an institution with a strong sense of continuity, tradition, and concentrated purpose. We believe that our first responsibility is to continue the general lines of endeavor which are traditional with the Institution: basic research in selected areas of national interest; development and maintenance of the national collections in biology, anthropology, history, and the arts; and enlightenment of the public through exhibitions and related activities.

In order to meet this responsibility, an overriding concern must be the quality of the professional staff effort within the Smithsonian. We cannot too strongly emphasize the achievement of an adequate level of support of that effort. We have repeatedly appealed for the remedy of deficiencies in support of research and scholarly programs. Virtually half of the growth in appropriations since 1964 has been devoted to staffing and operating new facilities authorized by the Congress. Much of the rest has been negated by inflation. A strong effort must now be made to sustain the basic scholarly program: support for fieldwork, instruments, libraries, conservation, automatic data

processing, technician support, related higher and elementary and secondary education activities, better access to colleagues through scholarly publishing, and unremitting emphasis on the professional character of staff appointments, all against a background of increasing costs. Our budget henceforth will proceed on two tracks, the first a phased elimination of these shortages and the second to provide for the continued development of programs entrusted to us by the Administration and the Congress. Several of these are identified in the following paragraphs.

Beginning this year the observance of the Bicentennial of the American Revolution will become a predominant factor in the development of Smithsonian programs. Within the settings of our history and art museums members of the public may seek a reappraisal of our national experience with due reference to its international setting. Fresh insights of historians should be interwoven with superb offerings of objects and art works that portray our nation's course over the past two centuries and suggest paths for our continued development.

From the studies of the sources of energy and means for its use by living systems to the explanation of biological diversity, the Smithsonian represents an unexcelled multidisciplinary array of information resources and professional scientists which bear upon critical needs to improve our understanding of the physical environment upon which human society depends. We anticipate increasing demands upon our efforts in systematic biology, anthropology, astrophysics, and environmental studies as important resources for the national effort in environmental improvement.

One of the most important unfulfilled hopes for the Smithsonian is that a great national museum might be developed on the authorized space on the Mall to recreate the experience of man's greatest adventure: flight and space exploration. We also aspire to present insights about the significance of the space age for everyday life and to communicate an understanding of the scientific discoveries originating from space exploration.

The birthright of today's citizen is an understanding of the forces shaping himself and his world. It is to museums that many people look for access to the works of artists, an appreciation of the past, an awareness of the scientific view of nature, and for portents of the future. All museums must experiment with new techniques of exhibition and embark upon training and research aimed at improving their effectiveness in popular education. The quality of our response to this democratic vista will continue to be a matter of overriding concern to the Smithsonian in years to come. Implementation of the National Museum Act through adequate funding will greatly strengthen the capability of all museums.

From the amassing of great national collections will arise difficult questions about how to guarantee access to the information they contain. This will call for innovative designs of indexes, catalogs, and ways to manage vast resources of information. Perhaps some of the techniques developed for the management of voluminous flows of data from satellite observations or oceanographic stations may be adapted to the needs of the future. In our role as custodian of the nation's collections we must try to serve the public interest in improved management of scientific and scholarly information.

The fiscal year 1972 appropriation estimates are designed to help correct many of the problems identified and to improve the Institution's capabilities in other areas. We are convinced that only by obtaining the requested additional resources can the Smithsonian meet the future of the decade.

The estimates are presented in four sections:

- A. "Salaries and Expenses"
for regular operating programs in the museums,
galleries, research laboratories, and program
support units.....\$41,529,000
- for special programs of an Institution-wide nature
and of unusual importance for national research and
public education needs 3,475,000
- B. "Salaries and Expenses" for Science Information
Exchange as a separate appropriation account in
recognition of the unique service nature of this
organization..... 1,400,000
- C. Special Foreign Currency Program in archeology and
related disciplines, systematic and environmental biology,
astrophysics, and museum programs..... 5,500,000
- D. Restoration and construction of Smithsonian buildings and
facilities..... 6,847,000

Each of these requests is summarized below. The estimates of the Woodrow Wilson International Center for Scholars are separately presented by its Board of Trustees.

A. "Salaries and Expenses"
Regular Operating Programs

<u>1970 Actual</u>	<u>1971 Estimate</u>	<u>1972 Estimate</u>
\$28,993,000	\$34,783,000	\$41,529,000

The total increase requested for "Salaries and Expenses" for regular operations is \$6,746,000. Included in this amount is \$1,154,000 for mandatory pay and related benefits commitments, largely for current staff, that will fall due in fiscal year 1972 and are relatively uncontrollable. This increase is distributed as followed:

(In thousands of dollars)

1971	Requested	1972
Base	Increase	Estimate
\$12,306	\$3,791	\$16,097

Science

To correct serious deficiencies in the availability of technicians and other supporting staff, scientific equipment, laboratory supplies and materials, and key professional research staff in order that the Institution can continue its traditional basic investigations and educational services in anthropology, biology, geology, and the space sciences which are fundamental to a better understanding of the environment. Includes requests for the National Museum of Natural History, the Smithsonian Astrophysical Observatory, Smithsonian Tropical Research Institute, Radiation Biology Laboratory, Office of Environmental Sciences, National Air and Space Museum, Center for the Study of Man, Center for Short-Lived Phenomena, and the National Zoological Park.

1971 Base	Requested Increase	1972 Estimate
--------------	-----------------------	------------------

(In thousands of dollars)

<u>History and Art</u>	\$4,801	\$1,245	\$6,046
------------------------	---------	---------	---------

To provide essential support staff and the routine services, supplies, and equipment required for basic operations in order that the established and developing museums and art galleries of the Smithsonian can effectively tell the story of American civilization to millions of visitors annually. Includes the budgetary requirements of the National Museum of History and Technology, National Collection of Fine Arts, National Portrait Gallery, Joseph H. Hirshhorn Museum and Sculpture Garden, Freer Gallery of Art, Archives of American Art, and the National Armed Forces Museum Advisory Board.

<u>United States National Museum</u>	3,120	183	3,303
--------------------------------------	-------	-----	-------

To improve the documentation and conservation of the National Collections. Includes requests for the Office of Museum Programs, Office of Exhibits, Conservation Analytical Laboratory, and the Office of the Registrar.

<u>Public Service</u>	807	118	925
-----------------------	-----	-----	-----

To furnish additional capabilities to certain of those Smithsonian's activities which reach out to serve a wide public. Requests are included for the Anacostia Neighborhood Museum, the Office of International Activities, International Exchange Service, Division of Performing Arts, and the Office of Public Affairs.

<u>Program Administration and Support</u>	4,478	602	5,080
---	-------	-----	-------

To allow the central services to give adequate administrative and technical support to the museums, galleries, and laboratories. Includes requests for the Offices of the Secretary, General Counsel, Treasurer, and Personnel, and for the Smithsonian Press, Libraries, Information Systems Division, and other important support units.

<u>Buildings Management</u>	9,271	807	10,078
-----------------------------	-------	-----	--------

To provide adequate maintenance, operation, and protection services in support of the Institution's research, collections' management, and public education services.

Totals	<u>\$34,783</u>	<u>\$6,746</u>	<u>\$41,529</u>
--------	-----------------	----------------	-----------------

Special Programs

<u>1970 Actual</u>	<u>1971 Estimate</u>	<u>1972 Estimate</u>
\$972,000	\$1,549,000	\$3,475,000

This request is aimed at strengthening the Smithsonian's abilities to perform ecological research of national significance, present important and timely exhibitions, and extend its public education services. Included are requests for program funding for the Environmental Sciences, the American Revolution Bicentennial, the National Museum Act, a Major Exhibition on the World of Living Things, Academic and Educational Programs, and the Research Awards Program.

B. Science Information Exchange

<u>1970 Appropriation</u>	<u>1971 Appropriation</u>	<u>1972 Estimate</u>
\$ 1/	1/	\$1,400,000

A separate appropriation account is requested to enable the Institution to both manage and fund the Science Information Exchange as a national information service to the federal and nonfederal research community.

1/ Funded under contract with the National Science Foundation at an annual rate of \$1,600,000

C. Special Foreign Currency Program

<u>1970 Appropriation</u>	<u>1971 Appropriation</u>	<u>1972 Estimate</u>
\$2,316,000	\$2,500,000	\$5,500,000

The need is to provide adequate support, without any dollar drain to the nation, for overseas archeological work, systematic and environmental biology, astrophysical studies, and museum programs of benefit to American institutions of higher learning. Ongoing research, based on a broadened authority to employ these excess foreign currency funds, now consumes the entire appropriation (funding for many ongoing projects has had to be reduced). New demand, however, spurred by diminishing dollar support of basic research and by greater research opportunities abroad is steadily climbing.

D. Restoration and Construction

<u>1970 Appropriation</u>	<u>1971 Appropriation</u>	<u>1972 Estimate</u>
\$4,625,000	\$7,125,000	\$6,847,000

Included in this request are \$200,000 to continue to make essential repairs to existing buildings and facilities at the National Zoological Park; \$1,050,000 for the restoration and renovation of Smithsonian buildings, including completing the Renwick Gallery of Art, providing Bicentennial facilities on the National Museum of History and Technology, and other projects; \$3,697,000 to liquidate the balance of the Hirshhorn construction authority; and \$1,900,000 for the redesign of the National Air and Space Museum.

Total 1972 Appropriations Requested \$58,751,000

SMITHSONIAN INSTITUTION

"Salaries and Expenses"

Summary Statement

Appropriation Act, Fiscal Year 1971	\$34,702,000	
Anticipated Supplemental.....	<u>1,630,000</u>	<u>1/</u>
Total Available, Fiscal Year 1971.....	36,332,000	
Budget Estimate, Fiscal Year 1972.....	<u>45,004,000</u>	
Increase, Fiscal Year 1972.....	\$8,672,000	

1/ This supplemental covers the costs of the general schedule raise effective December 27, 1969, the wage board raise effective November 1, 1970, and the guard raise effective November 15, 1970, but does not cover any part of the general schedule pay raise effective January 10, 1971. (562,000)

SMITHSONIAN INSTITUTION
"Salaries and Expenses"

Summary of the 1970 Appropriation and 1971 and 1972 Estimates

Page No.	Unit	1970 Approp.		1971 Approp.		1972 Estimate		Analysis of Increases	
		Pos.	Amount	Pos.	Amount	Pos.	Amount	Necessary Pay	Program Amount
I Science									
A-11	National Museum of Natural History...	258	\$3,912,000	271	\$4,205,000	349	\$5,676,000	\$163,000	78 \$1,308,000
A-22	Smithsonian Astrophysical Observatory	57	2,086,000	57	2,076,000	57	2,630,000	21,000	0 533,000
A-25	Smithsonian Tropical Research Institute	40	522,000	45	560,000	57	796,000	60,000	12 176,000
A-30	Radiation Biology Laboratory.....	36	676,000	40	916,000	46	1,285,000	17,000	6 352,000
A-35	Office of Environmental Science.....	23	565,000	34	584,000	42	827,000	18,000	8 225,000
A-38	National Air and Space Museum.....	41	486,000	41	626,000	44	731,000	15,000	3 90,000
A-40	Center for the Study of Man.....	6	83,000	7	152,000	10	220,000	3,000	3 65,000
A-43	Center for Short-Lived Phenomena.....	0	11,000	1	37,000	4	127,000	1,000	3 89,000
A-46	National Zoological Park.....	0		249	3,150,000	297	3,805,000	70,000	48 585,000
	Total, Science	461	\$8,341,000	745	\$12,306,000	906	\$16,097,000	\$368,000	161 \$3,423,000
II History and Art									
A-60	Museum of History and Technology....	158	2,149,000	158	2,209,000	157	2,507,000	68,000	-1 230,000
A-63	National Collection of Fine Arts	59	1,015,000	70	1,137,000	72	1,245,000	46,000	2 62,000
A-65	National Portrait Gallery.....	30	768,000	37	831,000	38	902,000	21,000	1 50,000
A-69	Joseph H. Hirshhorn Museum and Sculpture Garden.....	13	308,000	18	416,000	21	1,017,000	14,000	3 587,000
A-72	Freer Gallery of Art.....	7	45,000	7	56,000	8	80,000	3,000	1 21,000
A-73	Archives of American Art.....	0		0		11	175,000	0	11 175,000
A-75	National Armed Forces Museum Adv. Bd.	8	182,000	8	152,000	6	120,000	5,000	-2 -37,000
	Total, History and Art.....	275	\$4,467,000	298	\$4,801,000	313	\$6,046,000	\$157,000	15 \$1,088,000
III United States National Museum									
A-77	Office of Museum Programs	7	233,000	9	304,000	9	308,000	4,000	0 0
A-78	Exhibits	167	2,354,000	167	2,361,000	164	2,428,000	67,000	-3 0
A-79	Conservation Analytical Laboratory...	11	134,000	11	154,000	14	209,000	5,000	3 50,000
A-81	Registrar.....	29	327,000	29	301,000	30	358,000	7,000	1 50,000
	Total, United States National Museum	214	\$3,048,000	216	\$3,120,000	217	\$3,303,000	\$83,000	1 \$100,000

Page No.	Unit	1970 Approp.		1971 Approp.		1972 Estimate		Analysis of Increases Necessary		
		Pos.	Amount	Pos.	Amount	Pos.	Amount	Pay	Pos.	Amount
IV Public Service										
A-83	Anacostia Neighborhood Museum	9	124,000	11	125,000	15	177,000	7,000	4	45,000
A-84	Office of International Activities	8	118,000	8	125,000	9	150,000	9,000	1	16,000
A-85	International Exchange Service	9	118,000	9	120,000	9	138,000	3,000	0	15,000
A-86	Performing Arts	7	226,000	7	196,000	7	202,000	6,000	0	0
A-87	Public Affairs	12	277,000	12	241,000	12	258,000	17,000	0	0
	Total, Public Service	45	\$863,000	47	\$807,000	52	\$925,000	\$42,000	5	\$76,000
V Special Programs										
A-89	American Revolution Bicentennial	0	0	2	400,000	2	400,000	0	0	0
A-92	Environmental Sciences Program	0	0	3	150,000	8	375,000	0	5	225,000
A-95	Major Exhibitions	0	0	0	0	0	525,000	0	0	525,000
A-101	National Museum Act	0	0	0	0	3	1,000,000	0	3	1,000,000
A-109	Academic & Educational Programs	18	572,000	20	599,000	23	725,000	11,000	3	115,000
A-118	Research Awards	0	400,000	0	400,000	0	450,000	0	0	50,000
	Total, Special Programs	18	\$972,000	25	\$1,549,000	36	\$3,475,000	\$11,000	11	\$1,915,000
VI Administrative & Central Support										
A-124	Secretary	38	462,000	38	598,000	40	656,000	12,000	2	46,000
A-125	General Counsel	8	110,000	8	135,000	9	158,000	5,000	1	18,000
A-126	Treasurer	31	573,000	31	604,000	33	672,000	13,000	2	55,000
A-127	Personnel	26	388,000	28	432,000	29	464,000	10,000	1	22,000
A-129	Libraries	49	659,000	54	739,000	63	950,000	21,000	9	190,000
A-132	Press	23	700,000	25	707,000	25	758,000	11,000	0	40,000
A-133	Information Systems Division	13	217,000	14	219,000	16	277,000	8,000	2	50,000
A-134	Archives	6	33,000	6	61,000	6	69,000	3,000	0	5,000
A-135	Photographic Services Division	20	265,000	20	252,000	20	280,000	8,000	0	20,000
A-136	Supply Division	21	318,000	21	327,000	21	355,000	8,000	0	20,000
A-137	Administrative Systems Division	9	140,000	9	157,000	9	171,000	4,000	0	10,000
A-138	Duplicating	7	83,000	7	70,000	7	88,000	3,000	0	15,000
A-139	Other Central Support	13	168,000	13	177,000	13	182,000	5,000	0	0
	Total, Administrative & Central Support	264	\$4,116,000	274	\$4,478,000	291	\$5,080,000	\$11,000	17	\$491,000

Page No.		1970 Approp.		1971 Approp.		1972 Estimate		Analysis of Increases		
		Pos.	Amount	Pos.	Amount	Pos.	Amount	Necessary Pay	Pos.	Program Amount
A-140	VII Buildings Management Department.....	748	\$8,067,000	768	\$9,271,000	793	\$10,078,000	\$382,000	25	\$425,000
VIII	Woodrow Wilson International Center									
1/	for Scholars.....	8	91,000	0		0	0	0	0	0
	Total	2,033	\$29,965,000	2,373	\$36,332,000	2,608	\$45,004,000	\$1,154,000	235	\$7,518,000

1/ Presented in a separate appropriation.

SMITHSONIAN INSTITUTION

NECESSARY PAY INCREASES, FISCAL YEAR 1972

An increase of \$1,154,000 is required for personnel compensation and personnel benefits. The operations of the Smithsonian Institution have been carefully reviewed and the following have been absorbed in our existing base for salaries and benefits. Recent legislation increased the agency's contribution to the employees' health benefits. The agency's share was increased, on the average, from 24 percent to 40 percent of the cost of each employee's health insurance. This Public Law 91-418 became effective January 1, 1971. The Smithsonian is absorbing the cost of this increase which is estimated to cost \$120,000 in fiscal year 1972.

The Smithsonian Institution is also absorbing part of the cost of the Wage Board increase effective November 1, 1970. The amount of the absorption in 1972 is estimated to be \$87,000 and affects the Buildings Management Department and the National Zoological Park. No further absorption is possible without adversely affecting the operations of the Smithsonian.

The above increase will be used to finance the following items:

a.	Periodic step increases in accordance with Government Employees Salary Reform Act of 1964 and with prevailing practices in the wage scales	\$623,000
b.	To finance the cost of promotions	185,000
c.	To finance an extra work day in fiscal year 1972	100,000
d.	Guard raise	163,000
e.	To finance the cost of housing allowance for United States citizen employees of the Smithsonian Tropical Research Institute	21,000
f.	Full-year costs of wage adjustments for wage employees at the Smithsonian Tropical Research Institute	13,000
g.	To finance a new holiday--Columbus Day--as authorized in Public Law 90-363	10,000
h.	Full-year costs of the wage board increase granted on November 1, 1970	39,000
	(absorption of about \$87,000)	
		\$1,154,000 ¹

In fiscal year 1966, the Smithsonian Institution account obligated 68.9 percent of the total "Salaries and Expenses" budget for personnel compensation and benefits. In fiscal year 1971, we anticipate obligating 74.5 percent of our funds for personnel compensation and benefits. We are striving to achieve a better balance in our funds between those for salaries and benefits and those for other objects of expense. Much of this imbalance has been caused by absorbing portions of legislated salary and wage increases. In order not to have to reduce other objects further, this requested increase is of high priority. People are the Smithsonian Institution's most important asset provided by the budget process, but as modern techniques and equipment are coming into use, we must also be in a position to provide the professional research staff as well as the administrative and technical support staff with such tools as advanced equipment and computer

¹ This amount is distributed in the fiscal year 1972 column of the individual budget requests.

services. This can only be done if we have some flexibility in other objects. Currently this is not the situation. After we have provided for the other essential costs in other objects, i.e., electricity, steam, gas, air conditioning, rent, and communications, there are extremely limited amounts of funds left.

Periodic step increases are made in accordance with the Government Employees Salary Reform Act of 1964 and prevailing practices in the wage system. This amount includes the additional portion of the fiscal year 1971 step increases to be paid in fiscal year 1972 and the new amount to be paid to employees in fiscal year 1972. The apparent cost was determined through a position-by-position study and has been reduced to real cost by offsets resulting from employees being separated or promoted before receiving step increases and from filling some positions at a lower grade step than the former incumbents held. Experience in 1970 showed that we paid \$191,000 in new costs which on an annual basis would have cost \$388,000. We are requesting \$623,000 for these costs in 1972. This is based on our higher employment in 1971 over 1970 and on the fact that 50 percent of 1970's experience was based on lower pay scales, and the wage system's experience was based on pay that will have been increased twice and will probably be increased again in early 1972.

In order to hold its eminent professional research and curatorial staff, the Smithsonian Institution must be in a position to offer promotions as these men gain experience and professional competence. Within the Smithsonian Institution, the historians and scientists are rated by their peers. Certain criteria have been established by these two groups in order to assess rates of professional advancement in order to obtain promotions. There are two groups known as Professional Accomplishments Evaluation Committees. One group is composed of curators and historians in history and the arts. The other group is made up of scientists and curators in the natural sciences. These groups have to recommend a scientist's promotion to the bureau directors before any action can be taken. Even then the bureau directors and the personnel staff have to apply the standard regulations before these promotions are accomplished. In order to keep this program going and to maintain the staff of qualified researchers that have been gathered, the Smithsonian Institution is requesting \$65,000 to pay for the additional part-year cost of fiscal year 1971's promotions in fiscal year 1972 and the additional costs in that year for new promotions. We are also requesting \$120,000 to help finance the upgrading of the rest of our staff.

In fiscal year 1972, there will be an extra workday since February will have 29 days in that year. This will cost \$100,000 in additional salaries and benefits.

The Civil Service Commission was requested and granted authority under 5 U.S.C. 5303 and Executive Order 11073 to establish the special new higher salary rates for all guards GS-085 which is the category of the Smithsonian Institution's special policemen. These guards possess full police power within their jurisdiction including the power of arrest, and are qualified to bear arms under the authorizing statute. The increased salaries were deemed necessary to give them parity with other similar protective forces in the District of Columbia and enhance the ability to recruit suitable personnel and to retain those already on the force who possess the required training and experience. These factors became all the more important in light of the government's security crackdown because of the many recent bomb threats, and the alarming increase in demonstrations, protests, and crimes. The special guard raise gave the guards in GS-3, 4, and 5 an average increase of \$1,500 per year. This increase became effective November 12, 1970. We are seeking \$163,000 to annualize this raise in fiscal year 1972 for our Buildings Management Department.

The Smithsonian Tropical Research Institute is the only U.S. federal activity in the Canal Zone or in Panama whose employees are not offered low-cost Canal Zone housing, Government-leased quarters in Panama, or quarters allowances.

All STRI families must reside in Panama where high costs in comparison with District of Columbia costs provide the basis for State Department surveyed Foreign Quarters Allowances. STRI's U.S. staff members, however, now receive only a 15 percent pay differential as do all other U.S. employees working in the Canal Zone. This differential is approximately three-fifths the value of the Foreign Quarters Allowances received by all U.S. employees working in Panama. The requested funding of \$21,000 would make up the difference by enabling the agency to lease quarters in Panama and sublease these to staff members on a partially subsidized basis. This will rectify a hardship on the STRI's employees. Authorization for a longer-term solution will be sought whereby full Foreign Quarters Allowances may replace the differential.

The Smithsonian Institution's Tropical Research Institute has manual employees who are maintained on a separate pay system from other employees within the Smithsonian. We are requesting \$13,000 to finance the wage adjustments for these employees. This covers \$9,000 for adjustments effective July 12, 1970, and an increase effective October 1, 1970, at \$4,000 to raise the minimum wage paid in the Canal Zone from \$1.45 to \$1.60 per hour.

Public Law 90-363 provided a new holiday--Columbus Day--which will occur for the first time in fiscal year 1972. We are requesting \$10,000 for this holiday since our museums and zoo are open every day of the year except Christmas. This is the holiday pay for the guards, policemen, animal keepers, custodians, and certain mechanics needed to keep the buildings open.

The Smithsonian Institution employs over 700 wage board employees. These employees received a pay increase on November 1, 1970. We are requesting \$39,000 to finance the additional cost of this increase in fiscal year 1972. While most government agencies depend upon the General Services Administration to provide maintenance, operation, and protection services, the Smithsonian Institution because of the uncommon feature of our buildings being not only office space, but museums, galleries, and laboratories, maintains its own Buildings Management Department. At the National Zoological Park, we have the additional feature of having live exhibits. Animal keepers are required to maintain these live exhibits. It is not possible to further absorb pay increases in these two groups of employees by abolishing positions in order to finance wage increases from base resources. Additional building spaces and exhibits are creating needs for more, not fewer, such positions.

Necessary Pay Increases
Fiscal Year 1972

Organizational Unit	Periodic		Extra		Other*	Total
	Increases	Step	Promotions	Day		
National Museum of Natural History	\$108,000		\$ 44,000	\$ 11,000		\$ 163,000
Smithsonian Astrophysical Observatory	16,000		3,000	2,000		21,000
Smithsonian Tropical Research Institute	20,000		4,000	2,000	\$ 34,000	60,000
Radiation Biology Laboratory	14,000			2,000	1,000	17,000
Office of Environmental Sciences	14,000		3,000	1,000		18,000
National Air and Space Museum	10,000		3,000	2,000		15,000
Center for the Study of Man	3,000					3,000
Center for Short-Lived Phenomena	1,000					1,000
National Zoological Park	35,000		4,000	11,000	20,000	70,000
National Museum of History and Technology	51,000		11,000	6,000		68,000
National Collection of Fine Arts	29,000		14,000	3,000		46,000
National Portrait Gallery	17,000		2,000	2,000		21,000
Joseph H. Hirshhorn Museum and Sculpture Garden	9,000		4,000	1,000		14,000
Freer Gallery of Art	2,000			1,000		3,000
National Armed Forces Museum Advisory Board	3,000		2,000			5,000
Office of Museum Programs	3,000		1,000			4,000
Office of Exhibits	52,000		8,000	7,000		67,000
Conservation Analytical Laboratory	4,000		1,000			5,000
Office of the Registrar	6,000			1,000		7,000
Anacostia Neighborhood Museum	3,000		3,000	1,000		7,000
Office of International Activities	5,000		4,000			9,000
International Exchange Service	3,000					3,000
Division of Performing Arts	3,000		2,000	1,000		6,000
Office of Public Affairs	15,000		1,000	1,000		17,000
Academic and Educational Programs	7,000		3,000	1,000		11,000
Office of the Secretary	3,000		7,000	2,000		12,000
Office of the General Counsel	2,000		2,000	1,000		5,000
Office of the Treasurer	9,000		3,000	1,000		13,000
Office of Personnel Administration and Health Units	9,000			1,000		10,000

Necessary Pay Increases
Fiscal Year 1972
(continued)

Organizational Unit	Periodic Step Increases	Promotions	Extra Day	Other*	Total
Smithsonian Institution Libraries	\$ 15,000	\$ 4,000	\$ 2,000		\$ 21,000
Smithsonian Institution Press	9,000	1,000	1,000		11,000
Information Systems Division	6,000	1,000	1,000		8,000
Smithsonian Archives	2,000	1,000			3,000
Photographic Services Division	6,000	1,000	1,000		8,000
Supply Division	6,000	1,000	1,000		8,000
Administrative Services Division	3,000				3,000
Duplicating Section	2,000	1,000	1,000		4,000
Other Central Support	4,000	1,000			5,000
Buildings Management Department	114,000	45,000	32,000	\$191,000	382,000
Total	\$ 623,000	\$185,000	\$100,000	\$246,000	\$1,154,000

* Other:

Guard Raise--BMD	\$163,000
Housing--STRI	21,000
Wage--STRI	13,000
Wage--NZP	17,000
Wage--BMD	21,000
Columbus Day--BMD	7,000
Columbus Day--NZP	3,000
Wage--RBL	1,000
	<u>\$246,000</u>

SCIENCE

Discovering the history and development of natural phenomena and the characterization of natural events, especially as they relate to the evolution of man in response to his physical and sociological environment, represents the major scientific goal of the Smithsonian. If there is a single scholarly bond of interest among all the activities of the Institution, it is a common concern with history, the history of art, the history of technology, the history of science, and indeed natural history. Our staff of scientists is concerned with elucidating the interrelationships between organisms (including man), communities, and populations with the physical, chemical, and geological factors which play a role in forming the ecology of the earth now and in past ages. More than seventy specialties are represented by the Smithsonian's community of scientists. Activities range from astrophysical investigations that contribute to our understanding of the origin and mechanics of the universe, through investigations on microscopic organisms in the ocean depths, to the development of man as shown by his artifacts and productivity.

There is a major change occurring now in the nation's general scientific effort. This change regards the type of input information more and more investigators view as necessary to further research on problems which are biological or physical in nature. While the change is a contemporary one, it is related in an important way to the basic and long-term activities of the Smithsonian and similar research institutes across the nation, and indeed the world. The change, simply stated, involves the following.

Ecological investigations concerned with identifying long-term factors affecting environmental balance increasingly are becoming dependent on analysis and information constructed around collections of objects. Systematic collections of biological and geological specimens contain standards for describing and measuring ecological changes. Unfortunately, as of now, not enough historical information has been extracted to create "bench-marks" of change which would give scientists accurate indices for speculating about ecological trends, and about man-made solutions to problems which would be in keeping with the natural evolutionary process.

This, however, is the type of work which the various scientific laboratories and museums of the Institution have been involved in for a century and a quarter. In recent times, systematics has not been considered one of the more fashionable of sciences. Even during the hey-day of federal support for scientific research, systematics did not receive the measure of support needed to maintain a level of involvement adequate to the nation's best environmental interests. But now the demands for taxonomic information are increasing rapidly as our national programs of science and technology are redirected to cope with environmental deterioration.

The requests contained in this budget are pointed to rectifying certain support shortages in Smithsonian scientific endeavors in biology and to strengthening certain areas of the physical and anthropological sciences. The increases requested for this Science program amount to \$3,791,000 or 44 percent of the total Institutional requested increase. It will permit improved technical assistance for our scientists to permit them to produce at their optimum level of professional competence.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

NATIONAL MUSEUM OF NATURAL HISTORY

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>271</u>	<u>78</u>	<u>349</u>
11 Personnel Compensation.....	\$3, 806, 000	\$ 654, 000	\$4, 460, 000
12 Personnel Benefits.....	286, 000	51, 000	337, 000
21 Travel & Transp. of Persons	13, 000	86, 000	99, 000
22 Transportation of Things	0	3, 000	3, 000
23 Rent, Comm. & Utilities	17, 000	4, 000	21, 000
24 Printing & Reproduction.....			
25 Other Services	44, 000	150, 000	194, 000
26 Supplies & Materials	24, 000	90, 000	114, 000
31 Equipment	15, 000	433, 000	448, 000
41 Grants			
TOTAL.....	<u>\$4, 205, 000</u>	<u>\$1, 471, 000</u>	<u>\$5, 676, 000</u>

Analysis of Total

Pay Increase	\$221, 000	\$163, 000	\$384, 000
Program	\$3, 984, 000	\$1, 308, 000	\$5, 292, 000

Specification of Increase (Program):

Correct Museum Support Deficiencies (34 positions, \$576, 000)

A serious imbalance exists between the professional research and curatorial efforts and the technical support available for these efforts (museum technicians, assistants, equipment, supplies, etc.). This needs to be corrected over the next few years. The increase requested will more nearly reflect the support ratios as recommended by the President's Science Advisory Committee and the Panel on Systematics and Taxonomy, and allow a shift of professional attention to important contemporary environmental problems.

Environmental Studies (28 positions, \$532, 000)

The Museum has a major national role to play in producing baseline information and research related to environmental problems. This increase is directed at strengthening the Museum's ability to fill this role and will involve studies of deteriorating freshwater habitats, sea animal populations, the origin of oceanic ecological systems and terrestrial change.

Collections Information and Electronic Data Processing (16 positions, \$200, 000)

If this Museum is to serve as a base for important environmental research, it must make its collections and accompanying data more accessible to researchers and scholars. Data processing provides the only means by which this can be done. This request would expand current efforts to include fishes, marine mammals, and mineral sciences.

NATIONAL MUSEUM OF NATURAL HISTORY

1970 Actual	\$3,912,000
1971 Estimate	\$4,205,000
1972 Estimate	\$5,676,000

This Museum serves as a national and international center for the natural sciences. It maintains the largest reference collections in the Nation and conducts a broad program of basic research on man, plants, animals, fossil organisms, rocks, minerals, and materials from outer space. Its research is concerned with classification, distribution, analysis, and environmental and ecological relationships. Its fundamental studies in systematics and biology are providing new information required for the solution of major national problems of conservation and pollution, food production, improvement of medical knowledge, and for planning national and international programs leading to predictive ecology and environmental management. It engages in joint educational programs with universities by teaching courses, training graduate students, conducting science seminars, and providing leadership in the improvement of museum techniques, collections management, and the training of technical assistants for cooperating institutions.

The NMNH has the legal responsibility (20 U.S.C. 59) to serve as the ultimate Federal repository of all collections and objects of natural history, archeology, and ethnology made by agencies of the Government when no longer needed for investigations in progress. Additionally, the NMNH has become the repository for numerous extremely valuable collections obtained from other sources, such as the scientific community, academic institutions, as well as many private individuals. Because the Museum is the national repository, it has responsibilities far beyond the research of its own staff. It assists both the layman and the scientist with identification, lends specimens for research, and safeguards the tangible results of research. As the National Museum, it has inherent responsibility to provide leadership for other museums and institutions. In this latter role through use of its collections, NMNH is a vigorous scientific organization devoting an increasing share of its resources of professional staff and unrivaled collections to research which is "locked into" understanding, explaining, and coping with the multitude of environmental problems which beset humanity.

For fiscal year 1972, the Museum is requesting an additional \$1,308,000 to help correct imbalances that exist between the levels of professional scientific effort and support effort necessary for proper curation of the collections (\$576,000), and to strengthen the Museum's ability to respond to national problems by expanding and intensifying its research efforts, which are directly associated with its collections interests in ecological and biological areas (\$532,000). An additional \$200,000 is being requested to strengthen the Museum's capability to extract and automate collections information related to the environmental research effort. An increase of \$163,000 is needed to cover necessary pay increases.

Need for Increase

1. Museum Support Deficiencies (34 positions, \$576,000)

With the enlarged emphasis on research on the collections, which is basic to explaining the many mysteries of how man must manage his environment, many internal imbalances have resulted. Within the limited resources available to NMNH in the past, it is impossible to perform adequately both the identification and care of the collections and undertake research. In this regard the efforts of the limited subprofessional staff are almost entirely devoted to performing

curation and collection maintenance in the face of ever increasing numbers of specimens which seriously tax the ability of the staff to keep abreast of the workload.

The scientific staff is deeply involved in research, but lacks the necessary support required to provide for daily routine functions. This is clearly most undesirable from both the scientific and the economic standpoints.

Several typical examples will serve to illustrate the nature of this problem:

- a. The lack of sufficient technicians requires that highly skilled and compensated professionals must routinely perform such menial tasks as preparing thin sections for microscopic analysis. This task could be performed competently by subprofessional personnel, freeing the scientist to apply his expertise to meaningful research.
- b. The shortage of technicians precludes the timely and proper provision of routine identification services to numerous requesters. Presently all departments have sizable backlogs of requests which cannot be processed without redirecting personnel efforts from other activities. Frequently, when these services are provided the scientists must do the work so that the curation responsibilities can continue uninterrupted. The professional staff does not do this because of preference, but rather in an attempt to continue the cooperative atmosphere which such consultant work promotes. This routine work can also be effectively performed by technicians.
- c. The shortages of such subprofessionals as illustrators often forces scientists to prepare their own art work in order that research publications can go to press. This is a gross misdirection of scientific expertise. This work could more properly be done by lower-graded employees.
- d. The lending of specimens to other museums and research laboratories is a time-consuming but essential process which requires the selection, withdrawal, packing, and processing of collection material both in the sending and receiving operations. Often this service is provided only by redeploying personnel from other more essential tasks. This is done to discharge the responsibility of the National Museum and to maintain close working relations with the requesters who are engaged in complementary research and who cooperate with SI in the solution of scientific problems. These services could be rendered effectively by technicians if adequate staff were available.
- e. Clerical personnel are also inadequate in numbers to keep pace with the workload. This frequently forces the scientist to type answers to public inquiries, his own reports, memoranda, manuscripts, and do other routine office work.

As far back as 1953 a conference sponsored by the National Research Council called attention to the fact that "the active taxonomists are overwhelmed by the ever-increasing flood of collections crying for attention, to say nothing of the great accumulations of unworked, undetermined materials piled up in years past" and stated that the greatest needs to meet this problem were "increased manpower--more trained and experienced personnel--greater productivity on the part of active systematists and taxonomists."

In May 1969 the President's Science Advisory Committee and the Panel on Systematics and Taxonomy recommended a ratio of three support personnel (technical and clerical) to each professional employee as the optimum level for

research endeavors. As shown in Table 1, the NMNH is able to provide far less than this level of support. Support deficiencies other than those which involve personnel also result in less than truly effective utilization of Museum staff and facilities.

The Smithsonian Council, an Institutional advisory body composed of twenty of the Nation's leaders in art, science, and history, at its spring 1970 meeting adopted the following resolution:

"In view of the present need to protect and appreciate the diversity of the environment, the Council is deeply concerned with the present trend relating to systematic biology as it affects the Museum of Natural History and strongly urges the allocation of additional resources to the Museum to promote this field."

These men, in their present capacities as research scientists, foundation directors, and university scholars, are used as a sounding board by the Institution to help integrate national needs with Institution activities.

Recently many special support services which had been provided by the Institution at no cost to the Museum have been discontinued by the support units because of budgetary constraints. This has required the Museum to redirect funds from other higher priority areas to provide these essential services. Some examples of this follow.

- a. The SI Library now finds it necessary to require NMNH to fund many of its purchases of reference books for the various departments as it is unable to sustain former levels of this support.
- b. The Administrative Systems Division, which formerly provided cataloging forms, labels, and other items essential to systematic and logical curation, is no longer able to furnish this service. The departments must finance their own needs which in some cases represent sizable dollar amounts.
- c. The Supply Division, which in the past stocked most items normally required for departmental operation, has discontinued some 400 items with the result that the various Smithsonian operating units must now purchase these from their own already reduced funds.
- d. The Buildings Management Department now requires the Museum to purchase supplies and materials used in performing many special projects requested. In the past, these materials were routinely supplied.

Other financial problems are present in support areas. For instance, the shortage of specimen storage cases and specimen bottles is acute. In past years it was possible to maintain adequate inventories of bottles for specimens but the financial constraints in the last several years have prevented the replenishment of these stock levels. Specimen storage cases and drawers which in some cases represent the largest single expenditure of a department are no longer purchased on a routine annual basis but rather whenever and to whatever extent funds can be assembled from all available sources. This is neither efficient nor economical since these are not available commercially and must be constructed to exact specifications. Larger volume purchases, such as were possible in the past, would result in lower unit costs. Further, despite selectivity in acquiring specimens, accessions have grown at a rate which outstrips the availability of cases in which to house them. This often means that valuable additions to the

Table 1

NATIONAL MUSEUM OF NATURAL HISTORY

Ratios of Man-Years of Effort Between Technicians/Scientists							
(1) Sub- Prof. <u>Man-yrs.</u>	(2) Clerical <u>Man-yrs.</u>	(3) Sub- totals <u>Man-yrs.</u>	(4) Prof. <u>Man-yrs.</u>	(5) (3)÷(4) Ratio <u>Man-yrs.</u>	(6) Departmental 2/ <u>Other Supp.(nonpers.)</u> <u>FY 1970</u> <u>FY 1971</u>	(7) Scientist Share 2/ <u>Other Supp.(nonpers.)</u> <u>FY 1970</u> <u>FY 1971</u>	
Anthropology	14	9	23	17	1.35:1	\$35,800 \$14,800	\$2,100 \$900
Botany	9	6	15	17	0.88:1	36,700 14,400	2,200 800
Entomology	12	5	17	11	1.55:1	24,000 9,600	2,200 900
Invertebrate Zoology	13	6	19	18	1.05:1	32,000 12,100	1,800 700
Mineral Sciences	7	3	10	10	1.00:1	28,300 11,200	2,800 1,100
Paleobiology	18	6	24	18	1.33:1	37,900 15,300	2,100 800
Vertebrate Zoology	15	6	21	13	1.62:1	34,900 13,900	2,700 1,100
TOTAL	88	41	129	104	1.24:1 ^{1/}	\$229,600 \$91,300	\$2,200 \$900

1/ Note: The President's Science Advisory Committee and the Panel on Systematics and Taxonomy recommended a ratio of three support personnel to each professional employee.

2/ Travel for field work, equipment, laboratory supplies, etc. Excludes \$22,000 for general museum support items in fiscal year 1971.

collections are subjected to improper storage, possible damage, and, most importantly, the inability to locate specimens readily when required for study by Museum and other scientists. Immediate relief is essential to curate incoming specimens in a timely manner, to facilitate proper collection management and provide the research information when needed.

The foregoing are but a very few of the examples of conditions which would be eliminated by additional funding for support shortages. There are many areas in need of increased financial support which individually constitute problems of great magnitude and which when taken collectively represent major deficiencies preventing the Museum from carrying out effectively both its curation and research activities. (See accompanying photograph for deficiency example.)

In order to correct these support shortage imbalances, an additional \$576,000 is being requested. Shortages of museum technicians and museum aids constitute the greatest need and are largely concentrated in the areas of botany, zoology, and paleobiology (34 museum subprofessionals and \$205,000).

The current Museum ratio of support personnel to scientific professionals is only slightly better than 1:1. The requested increases, while falling short of the standards selected by the President's Science Advisory Committee and the Panel on Systematics and Taxonomy, would serve to improve this ratio to approximately 1.6:1. In addition, \$371,000 are requested to provide needed support for equipment, supplies and materials, and travel. In this latter amount, \$200,000 are in nonrecurring costs involved in major equipment and storage items. The balance of \$171,000 is urgently needed to raise the current annual amount available for expenditures per professional from an average of \$900 to an amount approaching \$2,000, a figure which would permit efficient utilization of the Museum's professional expertise.

2. Environmental Sciences (28 positions, \$532,000)

A total of \$532,000 is requested to initiate or expand present exploratory research projects related to our environment. These projects include studies of the interactions of organisms with each other and with their surroundings--soil structure, temperatures, water supply, day length, available nutrients, and many others. A plant grows where it does, just as an animal feeds on it, because of a complex interrelationship between the non-living and the living parts of the total environment. The development of basic information on these interactions is critically important to establishing environmental standards and to the intelligent management of natural resources in a world increasingly threatened by man's activities. Table 2 presents a program breakdown of the Museum's request.

Concern for environmental matters and the research it engenders currently pervades all of national life, but the National Museum of Natural History has a unique role that has been poorly recognized and supported. The National Collections of natural history objects, now more than 50 million, are the largest data base in the Nation for information on the chemical makeup, structure, geography, and ecology of the world's plants and animals.

Much of this material was collected prior to the first atomic explosion and before pollution from pesticides, heavy metals, and other sources reached anywhere near their present levels. Consequently, it constitutes an irreplaceable base line resource available for analysis which cannot be duplicated. There is no other more reliable, documented source for determining what lived where and when and how. Therefore, the identification and protection of the specimens in the National Collections and the increased availability of information concerning them must be of the highest priority in the development of our Nation's efforts in this vital area. The research based on these collections which is conducted by the Museum's scientific staff is likewise a unique resource available to the entire



Irreplaceable artifacts stored in attic because neither the technicians needed to process them nor the storage equipment in which to house them are available.

Table 2

NATIONAL MUSEUM OF NATURAL HISTORY

Program Category	1970		1971		1972 Shortages ^{1/}		1972 New Prog		1972 Estimate	
	Pos	Amount	Pos	Amount	Pos	Amount	Pos	Amount	Pos	Amount
I. Research and Scholarship	156	\$2,386,000	156	\$2,571,000	21	\$451,000	28	\$532,000	205	\$3,554,000
II. Natl Cdllections Mgmt & Use	83	1,251,000	94	1,349,000	11	236,000	16	200,000	121	1,785,000
III. Education of the Public	19	275,000	21	285,000	2	52,000	0	0	23	337,000
TOTAL	258	\$3,912,000	271	\$4,205,000	34	\$739,000 ^{1/}	44	\$732,000	349	\$5,676,000

^{1/} Includes \$163,000 necessary pay increases; requested program increase to help correct shortages is \$576,000.

scientific community. The Nation's research in the environmental sciences, to be successful, must depend increasingly on the collections, data, and intellectual resources of the Museum.

Two Science Advisors to the President have emphasized the significance of these relationships. Dr. Donald Hornig, testifying before a Congressional committee on environmental quality, pointed out

"the increasing attention being given ecological effects of man's activities calls for additional scientists capable of identifying the multiplicity of biological constituents of an ecosystem as a prerequisite to assessing changes."

More recently, Dr. Lee DuBridge stated in a letter

"Certainly the Smithsonian Institution can play a unique role in meeting our future environmental needs, particularly in the areas of systematics and basic ecology. ... Undoubtedly the taxonomic and systematics capability of the Smithsonian will have to be utilized if we are to know the character of changes occurring in the natural environment."

The new research projects for which increased funds are requested in fiscal year 1972 are designed to permit the Museum to play its "unique role" and provide the services and information needed by all those who are or who will be engaged in these scientific investigations.

The destruction of natural ecological communities all over the world is proceeding at an accelerating rate as technology improves, as population pressure increases needs for space, food, shelter, etc. The effects of clearing large, previously undisturbed areas for housing, industry, and agriculture, and the building of dams and highways, canals and other large public works all pose urgent problems of proportions never before faced by man. It is necessary now to develop a better understanding of what constitutes the "communities" of interdependent plants and animals before disturbances alter them forever. Similarly, such studies permit the protection of organisms against destruction, so that their chemistry, behavior, genetic constitution, and other aspects of their biology, which may be important to man's survival, can be studied. The following projects are those which are most urgently needed.

Study of Deteriorating Freshwater Habitats (3 positions, \$50,000)

Ongoing research on aquatic insects and crayfish will be expanded in order to meet growing needs for basic information by Federal agencies and research organizations investigating environmental quality problems. Both groups of organisms which are abundant naturally in freshwater habitats are quite sensitive to water pollution. Their presence or absence in a particular stream or lake can be an indicator of water quality. In addition, both larvae and adults of aquatic flies, the specific group to be studied in this project, are vital elements in the freshwater food chain.

Animals of the Sea (7 positions, \$121,000)

Information on the identity, distribution, environmental requirements, and behavior of marine animals is fundamental to an understanding of the world-ocean ecological system. A very important international effort was made toward closing this information gap in the International Indian Ocean Expeditions during which large numbers of invertebrate animals were collected. This project includes studies of these materials, the results of which will permit fisheries, biologists, and others to frame rational plans for exploitation of the sea.

The coastal areas and estuaries are particularly critical ecologically because they are the breeding grounds of so many forms of marine life and they are among those most threatened by discharge of industrial/urban wastes. Data which would be developed in this research on bottom-dwelling, microscopic worms and small crustaceans, important food for fishes, will aid scientists in many fields to develop and increase the economic value of foods from the sea.

Marine mammals (seals, dolphins, and whales), in spite of over exploitation, still constitute a valuable natural resource for furs, oil, and food. In addition, the study of their physiological mechanisms (such as their deep-diving adaptations, highly discriminant sonar, and underwater communication) would provide clues to new techniques for ocean exploration and exploitation. The NMNH has the world's largest collection of both fossil and living marine animals and the finest library pertaining to them. The scientist who would be hired on this project would strengthen the Museum's research competence in the field of marine mammals and provide leadership in planning the projected new National Marine Mammal Research Center which will provide facilities to government and university scientists and will be capable of housing the collections, thus permitting adequate study of these outsized specimens.

One has only to have read recent newspaper accounts of pollution of fishes by mercury, pesticides, and petroleum residues to realize that these animals are highly useful indicators of environmental contamination. It is essential that natural populations of fishes be studied now while relatively undisturbed marine habitats are still available. Fishes are an important source of human food, and their number and diversity provide a wide variety of indicators for monitoring local contaminants. The National Museum of Natural History houses one of the world's largest collections of Indo-Pacific reef fishes; however, much of this material remains unsorted and unidentified. As part of this project, these collections will be put into order and provide a starting point for a basic inventory of the species. These specimens will also provide material for chemical analyses to establish the base line information on the amounts of heavy metals and other possible pollutants which they contain. Subsequent analysis of recently caught individuals will permit comparisons with a standard from an environment relatively unaffected by man.

Origins of Oceanic Ecological Systems (9 positions, \$104,200)

Analyses of the rocks and fossils will provide data on the kinds, rates, and causes of natural environmental changes so critical to interpreting the modern situation. With such information, planners will be in a better position to predict the effects of environmental disturbances, whether natural or man-made.

The Atlantic Coastal Shelf is one of the most threatened areas of North America. As a model of the role that geology and paleobiology can play in the interpretation and prediction of environmental changes, the origin and development of the natural environments of the Shelf will be studied in detail. A complete, well-exposed physical record and rich fossil strata are available along the Atlantic Coast. These biological studies will be concentrated on mollusks, one of the most dominant and environmentally sensitive of the marine shelf organisms.

Coral reefs which contain communities of plants and animals which are so easily destroyed by changed environments would also be studied. An evaluation of the origin of the changes which are occurring cannot be made without a thorough understanding of reef ecology. Basic to this knowledge is the origin, structure, and history of the rock framework of the reef. This project is designed to provide these fundamental data.

Studies in Terrestrial Biology (6 positions, \$74,400)

Environmental change affects organisms wherever they occur, from the upper layers of soil to thousands of feet above sea level. Rich soils may contain more than ten million insects and their relatives per acre. These tiny animals are critical links in the total ecological chain of the interrelationships of the soil because many break down plant and animal remains so that the nutrients can be recycled to the living plants. Many insects and plants are sensitive to insecticides and herbicides, and thus can be used as indicators of soil pollution; but in spite of their abundance, little is known of their identity and behavior. This project will develop such information for application to existing problems of land productivity and soil pollution.

The proposed study of birds and mammals would provide clues necessary for solutions to environmental and health problems. Because birds and mammals are closely tied to their habitats, they also are good indicators of environmental change.

Most of what we know about migrations, breeding cycles, population structure, and ecological interrelationships has been derived from investigations on birds and mammals of the Temperate Zone. However, many tropical species, which still live in relatively undisturbed situations and from which the temperate species have evolved, remain poorly known. Many of these species either migrate into the Temperate Zone themselves or come into contact with temperate zone migrants in the tropics and may therefore act as long-distance carriers of disease. Consequently, research in this project will concentrate on the identity, distribution, and ecology of these animals in tropical Asia and Africa.

Changing Climates and Man's Adaptations (3 positions, \$124,400)

By constantly adapting himself, man has survived severe environmental changes throughout his history. Today, and in the foreseeable future, he faces challenges to his survival of a magnitude not dreamed of earlier. But the basic problems are not new, and the more we learn of the adaptations that were successful in earlier periods, the better guidelines we have for current decision-making.

One of the most useful techniques for assessing past conditions in a particular site is the study of the pollens in the various soil layers. Pollen grains of wet-land plants at one soil-horizon followed by grains of desert plants provide important clues to man's life and activities in those periods. Similarly, the origin of cultivated plants in various cultures can be studied by pollen research coupled with archeology. Throughout history, man has had a profound effect on his surroundings, and it is essential that these interdisciplinary studies be initiated now to provide a better understanding of his relationships with the environment and its impact on his cultures, civilization, and ability to survive.

Crystallography Laboratory (\$58,000)

Included in the amount for new program activities is the sum of \$58,000 needed to begin equipping a much-needed crystallography laboratory, through the purchase of a single-crystal diffractometer. The extremely capable crystallographer in the Department of Mineral Sciences could then greatly extend the Smithsonian's research capabilities. The diffractometer is a highly versatile instrument, and yields valuable structural data on virtually any crystalline material. Minerals, meteorites, deep-sea basalts, lunar rocks, and even man-made materials can be studied in minute detail, thus greatly strengthening the analytical power of existing Museum facilities, and adding new dimensions to current and proposed investigations. This sum is a substantial fraction of the total that would be required for a complete laboratory, yet would secure the best instrumentation currently available.

3. Improvement in Collection Management and Availability of Data Through Electronic Data Processing (16 positions, \$200,000)

Improved access for the scientific and museum communities to the data in the National Collections is urgently needed, and is a project of the highest priority of the National Museum of Natural History. Funds appropriated by Congress in fiscal year 1971 for the initial application of electronic data processing to natural history collections are being used in four projects. These projects will make available information on important collections in the Departments of Paleobiology, Botany, Invertebrate Zoology, and Vertebrate Zoology. Each data preparator can prepare for computer entry 8,000 to 12,000 records per year. Computer processing of these records, and the production of listings for internal use and publication, costs approximately fifty cents per record. It is estimated that during fiscal year 1971 a total of approximately 30,000 specimen records will be prepared and computerized for all four projects. The results already achieved in this program include three cross-referenced catalogs, containing information on over 4,000 specimens, which are soon to be published. Two more catalogs covering an additional 10,000 specimens will be completed in the current fiscal year.

The increase of \$200,000 being requested for fiscal year 1972 would be used to expand current efforts to cover new groups of organisms and to initiate new programs in two departments. These projects would make information associated with specimens of animals, plants, and minerals in the National Museum of Natural History collections more readily available to all who need these data. In addition, the volcanic activity file will provide historical perspective and current awareness data on behavior of the world's volcanoes. Users of information produced in these programs include personnel connected with research and academic institutions, industry, and government, as well as other scientists, students, and the staff of the Museum itself. It is estimated that the increase requested would permit the preparation and computer input, manipulation, and output of information on approximately 150,000 specimens per year. Of this number, about 75,000 will be new specimens comprising about one-tenth of the yearly inflow of specimens to the Museum. A major goal for the future is to capture data on the 300,000 to 500,000 most important yearly additions to the collections while continuing work on the major collections already on hand.

Introduction of modern data management methods and computer technology into the control of specimen holdings at the National Museum of Natural History has the immediate benefit of assuring more accurate and permanent capture of information, while at the same time improving the efficiency of highly skilled personnel. However, it is already apparent that a more important benefit is the ability to obtain, through the computer, any of the stored items of data in any desired combination rather than in only the very few categories possible through traditional indexing procedures. Thus, the limiting factor becomes the ingenuity and interest of the researcher rather than the restrictions presently placed on him by conventional paper filing systems. This flexibility is becoming increasingly important for investigation of the complex interrelationships of variables affecting the distribution, genesis, and evolution of minerals, animals, and plants.

Two environmental research proposals, for which funding is also requested, offer examples of the integration of computer data storage and the broader aims of scientific study. Data collected in both the Comparative Faunistic Inventory of Indo-Pacific Coral Reef Fishes and the Development of National Marine Mammal Research Center will be entered into the computer. Study of migration patterns, habitat preferences, population densities, and other important environmental parameters will be made much easier through computerization of the data from these programs.

The tremendous volume of information already in hand in the Museum, but largely in undigested form, and the increasing mass of information currently being collected, poses a staggering challenge. The proposed projects would attack discrete, select segments of this information mass to provide scientific results of the greatest immediate value, and would serve as a base for analyses and future investigations. Over the next several decades this progressive approach would result in the preparation of information about a significant proportion of specimens in the collections, largely as a by-product of other short-term studies which have scientific merit in their own right. The insights which can be gained by the use of the computer for such highly organized data cannot all be predicted, but it is clear from man's growing awareness of environmental interactions that such insights are already very badly needed. Because of the volume of data which must be organized, we must begin now the task of putting into order our knowledge about organisms, environmental phenomena, and the changes which have been and are now taking place.

To summarize, the National Museum of Natural History is requesting \$576,000 (34 positions with \$205,000 for associated personnel costs, plus \$371,000 for equipment, supplies and materials) to correct operating support deficiencies; \$532,000 (28 positions with \$241,000 for associated personnel costs, plus \$291,000 for equipment, supplies and materials, and information processing) for program development in the environmental sciences; \$200,000 (16 positions, with \$96,000 for associated personnel costs) for improving its ability to automatically handle environmental information associated with the collections; and \$163,000 for necessary pay increases in the fiscal year.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>57</u>	<u>0</u>	<u>57</u>
11 Personnel Compensation.....	\$ 1, 157, 000	\$ 19, 000	\$ 1, 176, 000
12 Personnel Benefits.....	92, 000	2, 000	94, 000
21 Travel & Transp. of Persons	50, 000	0	50, 000
22 Transportation of Things	12, 000	0	12, 000
23 Rent, Comm. & Utilities	152, 000	10, 000	162, 000
24 Printing & Reproduction.....	30, 000	0	30, 000
25 Other Services	274, 000	160, 000	434, 000
26 Supplies & Materials	85, 000	0	85, 000
31 Equipment	224, 000	363, 000	587, 000
41 Grants			
TOTAL.....	<u>\$ 2, 076, 000</u>	<u>\$ 554, 000</u>	<u>\$ 2, 630, 000</u>

Analysis of Total

Pay Increase	\$ 68, 000	\$ 21, 000	\$ 89, 000
Program	\$ 2, 008, 000	\$ 533, 000	\$ 2, 541, 000

Specification of Increase (Program):

Phased Development of Large, Low Cost Telescope (\$ 533, 000)

Since its establishment, the Observatory has been one of the leading organizations in the field of astrophysics. The Observatory's eminent scientific position is closely associated with its instrumentation capabilities. Recent years' budgeting constraints have jeopardized these capabilities. In conjunction with the University of Arizona and the Department of Defense, the Observatory has a unique opportunity to develop a large astronomical telescope for the nation with new techniques at very low cost. A scientific evaluation of existing national instrumentation capabilities, the requirements of the world astronomical community, and the goals of SAO's own research program, makes it clear that this opportunity should not be neglected. The telescope represents a break-through in instrumentation. A three-year phased plan for development requires \$1, 500, 000 for engineering design, construction of facilities, and installation. To implement the first year's activity, \$533, 000 are requested.

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

1970 Actual.....\$2,086,000
1971 Estimate.....\$2,076,000
1972 Estimate.....\$2,630,000

The Smithsonian Astrophysical Observatory (SAO) pursues a broad program of research in astrophysics and related earth and space sciences. Established in 1890, the SAO was reorganized in 1955 and moved to Cambridge, Massachusetts. In addition to some 50 scientists and supporting staff currently employed in Cambridge, SAO maintains scientific facilities elsewhere in the United States and overseas. Included in these facilities are a multipurpose observatory on Mt. Hopkins, Arizona; a worldwide network of Baker-Nunn camera and laser tracking stations; camera and radar networks in the mid-western United States for meteor studies and meteorite recovery; and joint use with Harvard College Observatory of an 84-foot radio telescope in Massachusetts.

An appropriation increase of \$533,000 is requested to continue the development of a large telescope to provide the kind of instrumentation essential to further scientific achievement and to correct research support shortages. An additional \$21,000 are requested to cover necessary pay increases.

Need for Increase--The professional staff working at SAO has been unable to achieve its full potential because of severe budgetary restrictions. The results of the Observatory's research have established standards for other scientists engaged in similar investigations. Included in these accomplishments are the publication of the 1969 Smithsonian Standard Earth (II), the most accurate representation of the earth's size, shape, and gravitational field ever produced; a determination, through observations, of limits on the frequency and number of micrometeoroids as hazards to space flight; the production of the Smithsonian Astrophysical Observatory Star Catalog and Star Atlas as standard references; and studies of the maser process to help measure the motions of the earth, to test the theory of relativity, and to investigate those areas of the universe where vast natural hydrogen masers operate.

The Observatory has always emphasized pioneering research. For example, SAO recognized even before the first Sputnik was launched that artificial satellites would provide a means for studying the earth and its atmosphere in more detail than ever before possible. The continuing role of SAO as a scientific pioneer depends upon timely, systematic acquisition of new instrumentation. Scientific inquiry is dynamic, and yesterday's tools are seldom sufficient for tomorrow's problems.

From year to year, the Observatory has applied a significant fraction of its funds to acquiring new research capability. The eminent scientific position of the Observatory is closely associated with the capabilities represented by its instrumentation. This necessary policy of instrumentation advancement was unfortunately broken in fiscal year 1971. Inflation and a relatively static budget have made any major equipment purchases impossible. This unhealthy situation must be remedied in 1972 if SAO is to survive as a productive research organization.

In an effort to select the most useful new instrumentation for SAO, the scientific staff evaluated the existing national instrumentation capabilities, the requirements of the world astronomical community, and the goals of SAO's own research program. It was clear that an appropriate step forward would be the construction of a large optical telescope designed for a broad range of applications from infrared astronomy and spectral photometry to observations complementing the capabilities of instruments detecting high-energy radiation.

To overcome the immense difficulties and expense inherent in the manufacture of a single mirror, studies at SAO and elsewhere indicate that design advances lie in the direction of multielement mirror arrays. A telescope of this new design can be relatively lightweight, inexpensive, and extremely accurate--incorporating provisions for small adjustments of the mirrors so that all the images fall upon each other with sufficient precision. Less than a decade ago, such a technique would have been impossible. Changes in temperature and flexure caused by repointing the telescope to observe a different sky section would have caused the delicate alignment of the individual mirrors to go awry. Modern electronics, however, now make it possible to readjust continuously and automatically the alignment of the mirrors to ensure a single image.

SAO has a unique opportunity to undertake a cooperative project with the University of Arizona to build such a large multielement telescope. This pioneering effort will not only produce an instrument with resolving power equal to a 240" conventional telescope but will pave the way for the scientific community to build even larger, more powerful telescopes at remarkably modest costs. A photograph of the planned telescope follows; additional detail related to its development is being separately transmitted in the supplement A Large Astronomical Telescope at Low Cost. The Optical Sciences Center of the University of Arizona has acquired six 72" mirrors. With assistance from the Department of Defense (DOD), they plan to build six systems that will be tied together optically and electronically to function as a single but stationary optical system. The technology developed through this phase of the program will satisfy DOD's requirements. The Smithsonian, a cooperating agency with complementary objectives, plans to work with the University to design and construct a control system, mounting, and shelter so that the instrument can then be used as an astronomical telescope. If this is not done, the nation may lose an opportunity to convert an experiment in technology into a powerful operational scientific instrument at modest cost. An amount of \$1,500,000 spread over three fiscal years will be required for engineering design, construction of facilities, and installation of the telescope. For the first phase of the project, \$533,000 is requested for fiscal year 1972.

SAO RESEARCH PROGRAM

SAO's activities for 1972 will be grouped under three major program headings: 1) THE EARTH AS A PLANET, 2) THE SOLAR SYSTEM, 3) ENERGETIC PHENOMENA in the universe.

The Earth as a Planet

SAO's investigations of THE EARTH AS A PLANET are centered on the dynamics of the earth and its atmosphere. The Observatory applies the most precise laser and electronic techniques now available to monitor geophysical changes by observing the motions of artificial satellites in the earth's gravitational field. This can lead toward better understanding of processes within the earth and may eventually result in practical benefits such as the prediction of earthquakes. Employing techniques developed for measuring satellite orbits, SAO uses its worldwide observing stations to monitor temperature and density variations in the upper atmosphere caused by solar activity.

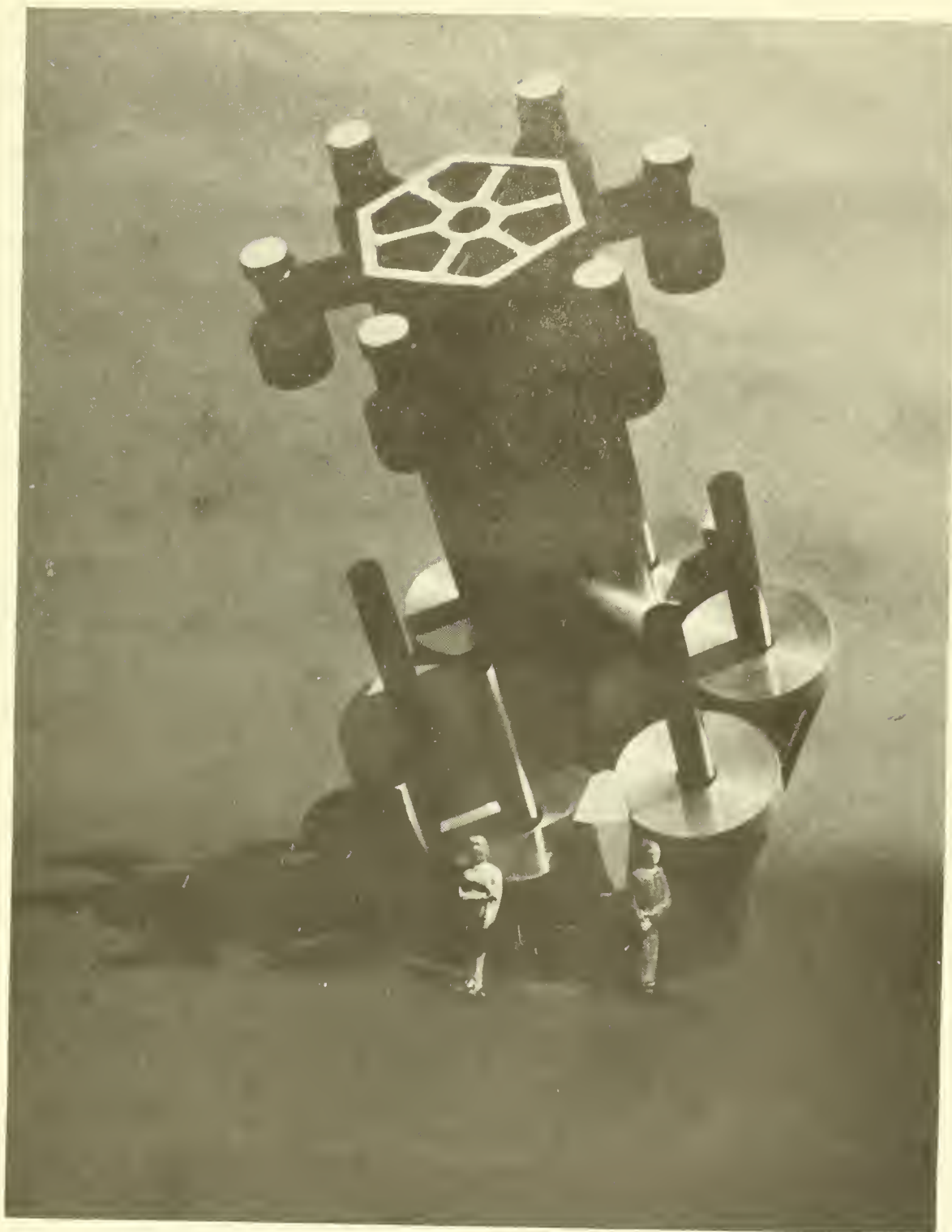
Man lives in a small and extremely fragile environment close to the surface of the earth; SAO scientists are making major contributions to an understanding of the physical processes that have such a important effect on man's environment.

The Solar System

Studies of THE SOLAR SYSTEM include the near-space neighbors of the earth--the moon, planets, comets, asteroids, and meteoroids--as well as the sun itself and its relationship to other members of this complex system. SAO's research program incorporates theoretical, laboratory, and observational studies of extraterrestrial bodies, their history since the formation of the solar system, and the sea of radiation to which they have been exposed.

Energetic Phenomena

ENERGETIC PHENOMENA studies are concerned with the sources of radiation, including the nature of newly discovered and largely unexplained sources of radiation far outside the solar system. For many scientists, these new astronomical sources present some of the most intellectually challenging problems in science today. More energy is being emitted from the centers of galaxies and from quasars than can be explained by any processes now understood. Most likely, the answers to these newest mysteries will be provided by the newest astronomical tools--radio, infrared, ultraviolet, gamma-ray, and advanced optical instrumentation.



This scale model of the proposed Six-Element Telescope demonstrates how six independent cassegrain telescopes, each 72 inches in diameter, will be integrated as a single-unit instrument with high resolution and large collection area.

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>45</u>	<u>12</u>	<u>57</u>
11 Personnel Compensation.....	\$ 409,000	\$ 147,000	\$ 556,000
12 Personnel Benefits.....	25,000	9,000	34,000
21 Travel & Transp. of Persons	20,000	9,000	29,000
22 Transportation of Things	4,000	6,000	10,000
23 Rent, Comm. & Utilities	26,000	6,000	32,000
24 Printing & Reproduction.....	0	0	0
25 Other Services	32,000	24,000	56,000
26 Supplies & Materials	32,000	16,000	48,000
31 Equipment	12,000	19,000	31,000
41 Grants			
TOTAL.....	<u>\$ 560,000</u>	<u>\$ 236,000</u>	<u>\$ 796,000</u>

Analysis of Total

Pay Increase	\$16,000	\$60,000	\$76,000
Program	\$544,000	\$176,000	\$720,000

Specification of Increase (Program):Support to Professional Research Efforts (3 positions, \$34,000)

The environmental research programs have suffered because of a lack of back-up support activity. The greatest shortages are two field aids and a launch operator (\$17,000) and additional direct support for the scientific operations (\$17,000).

Support to Facilities Operations (5 positions, \$64,000)

A large portion of the Institute's annual budget is used to keep the facilities in reasonably good shape; this is a difficult task because of the tropical climate, the growing use of facilities, and condition of some buildings and equipment. A manager and a janitor are needed for the marine station's facilities, a maintenance laborer for Barro Colorado Island, and an electrician and a messenger for all facilities (\$25,000). Additional funding for facilities maintenance and equipment is also requested (\$39,000).

Environment and Behavior Research (2 positions, \$44,000)

A marine ecologist and a forest ecologist are needed to allow a measured step of progress in the research program (\$33,000). Direct support funding is requested for laboratory and office needs, travel and household transportation, and supplies (\$11,000).

Administrative Support and Interagency Research (2 positions, \$34,000)

With the growing utilization of STRI's facilities, administrative support is urgently needed; one office administrator and one technical typist are requested (\$21,000), along with support funding for central administrative functions (\$13,000).

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

1970 Actual \$522,000
1971 Estimate \$560,000
1972 Estimate \$796,000

Established 25 years ago to foster understanding of the tropical environment as preserved on Barro Colorado Island, the Smithsonian Tropical Research Institute has become a center of excellence for advanced studies by staff, advanced students, associates, and visiting scientists on the processes of survival and their relationship to the environment--ever more essential questions for which the tropics are uniquely suited. In the tropics, diversities are greater, competitive processes and interactions more complex, new lines of adaptive radiation more pronounced, and year-round field study and experimental opportunities richer by far than in other climes.

Panama, easily accessible, offers an array of terrestrial and marine study habitats within immediate reach. The Isthmus is a land bridge for the biotic interchange of two continents and, at the same time, a continuing barrier to the biota of two oceans--separated by several millions of years, but only 50 miles apart. This affords an observational and experimental potential which cannot be matched elsewhere. The interdependence of ocean and continent is beginning to be publically recognized. STRI has one of the few teams of scientists in the world organized jointly to pursue the biology of both realms.

Questions on survival, importance of diversity, the critical role of communications, mapping and influence of environmental change, invasions by new populations, partitioning of environmental resources on land and in the oceans--on these and many other fronts STRI progress is recognized by leaders in biology from around the world.) Last year, ten STRI staff biologists gave 25 seminars at leading universities and prepared 53 contributions in research for publication. More than 100 other contributions were made by visiting scientists based on work at STRI.

The great growth in visitor demand from across the United States is testimony to the key value of STRI's role. In the last twelve months alone, 624 men and women from sixty-two universities and 33 agencies and institutions in 28 states and 22 countries spent 8,757 work days mining the combined intellectual and environmental resources at STRI. STRI harbors five laboratories for studying tropical marine and terrestrial ecology from forest and lake to seashore and mountain. Work is underway in forty different habitats on interactions between hundreds of different organisms and their environment. STRI provides a base of operations for pursuing fundamental questions in biology and for understanding the tropics--habitat for one-half of mankind. Concurrently, comparative studies elsewhere in the New and Old World tropics are magnifying the value of efforts at any one locale.

Other recent sources of testimony include the following comments by a prominent scientist and past president of the National Academy of Sciences:

"It is terribly impressive to me and most encouraging that in recent years STRI has expanded into such a first rate and significant institution. Most of the scientists whom I met and talked to at some length are from good to excellent. The program of bringing young people in for substantial working periods is really justifying itself according to my first-hand impressions. The whole organization is gaining immensely from the effect of having a critical mass with genuine group interaction and intellectual intercourse on a high plane.

"In addition to my congratulations on the existence of such a scientifically significant group as that represented by your staff and invited fellows, I must also speak to the value and importance for the total biological community of the excellent facilities you maintain for transient visitors like ourselves."

An increase of \$176,000 is requested to provide a balanced program of research and research support, facilities management, and administration adequate to keep pace with the accelerating demands on the activity. An additional \$60,000 are requested for necessary pay increases, compulsory benefits' cost hikes, and to rectify a housing benefit inequity.

Need for Increase

1. Research Support (3 positions, \$34,000)

During the past year 43 long-term research projects have been conducted by STRI's ten staff biologists, 18 projects ranging between one and two years by visiting postdoctoral and predoctoral fellows, and 40 projects of shorter term by visiting scientists.

Typical staff highlights included:

--the first explorations of Eastern Pacific shores of Western Panama discovering previously unknown large constructional coral reefs, nine species of fishes new to science and eleven new to the region, hydrocorals new to the Eastern Pacific and the first reported stable populations of the coral predator, the Crown of Thorns starfish. The STRI expeditions laid the basis for a new dimension of comparative Atlantic and Pacific analysis, as well as for uncovering natural controls for the predatory starfish that has been highly destructive elsewhere.

--behavior among animals is often critically affected by the success of their communication systems. Major advances were made at STRI in understanding the ways in which "messages," whether simple or highly specialized, mediate among organisms, and with the environment.

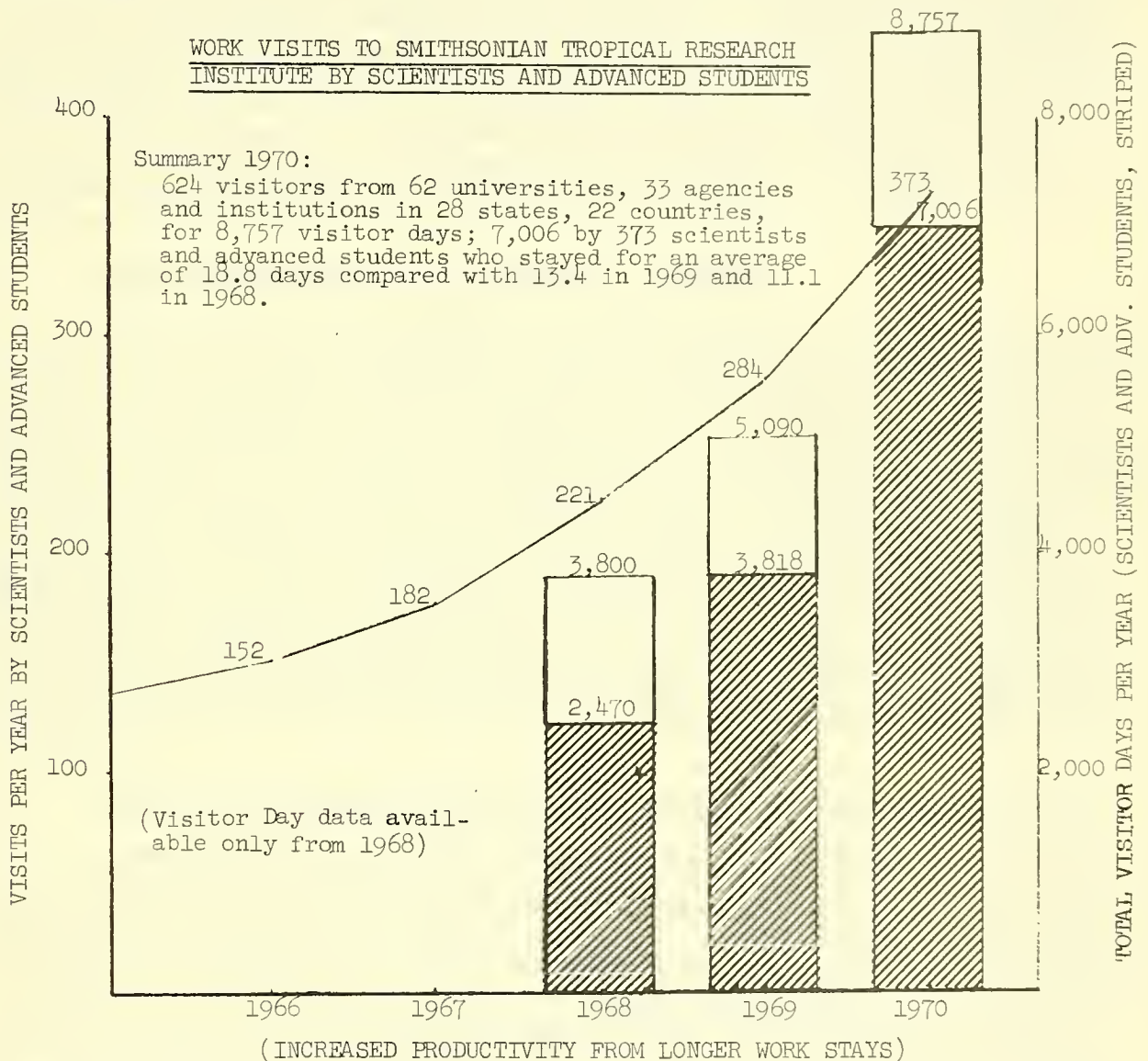
--survival patterns were charted of a highly venomous sea snake widespread in the Pacific but nonexistent in the Western Atlantic in order to predict the colonization and distribution success of the animal should it gain access to the Atlantic through construction of a sea-level canal.

--on Barro Colorado Island, which has housed hundreds of separate studies for four decades, an accelerating recent effort including 16 long-term studies is laying the basis for the development of new methods, with possible broad applicability, for predicting the effects of environmental change on the survival of organisms.

The common denominator on these and nearly all promising efforts is that their productivity has been hampered greatly by the lack of reasonable support. Levels of support are far below national standards. Scientists and staff often work around-the-clock to substitute for support. Immediate needs include two field aides (marine, Barro Colorado) and one marine research launch operator, for \$17,000 in salaries; partial make-up of travel shortages (\$3,000); rectifying a practically zero consulting and computations funding capacity (\$4,000); supply funding deficit of \$400 per scientist (\$4,000); essential equipment needs for balances, drying ovens, freezer, and one four-wheel drive research vehicle (\$6,000); for a total of three positions and \$34,000.

2. Facilities Operation Support (5 positions, \$64,000)

World-wide biology is being enriched importantly by a belated but increasing focus on the tropics. STRI provides a base of operations for tropical research unique in this hemisphere and is acting increasingly as a work-ground and interchange point for collaborators from around the world (e.g., over the last twelve months, 23 leading biologists from the U.S. and Europe conducted advanced seminars at STRI). The following table shows the increased demands on STRI operations.



This demand is greatly welcome and offers promise of concerted advances on urgent biological problems of the Seventies. The effect is that STRI is crammed literally to the rafters with staff, fellows, and visiting scientists. Immediate needs include a marine station chief (the burden for planning and coordinating the greatly increasing number of complex marine laboratory and field visits must fall on the scientists--an inefficient and very costly solution. The marine stations have immediate need for a counterpart to BCI's station manager), one marine station janitor (none now), one general maintenance laborer for BCI, one electrician (none now) for all facilities, one messenger (only one on board now), for \$25,000 in salaries; make-up of shortages in utilities, supplies and fuel (\$7,000); work bench construction, and equipment maintenance

contract support (\$3,000); partial replacement (20% of that needed) of ancient furnishings (e.g., main hall chairs on BCI were surplus 15 years ago), messenger vehicle, new and replacement air conditioners, mechanical maintenance tools (\$4,000); for a subtotal of five positions and \$39,000.

In addition, essential building repairs previously shown under the Restoration and Renovation appropriation must now be grouped here. Thirty-six structures with 69,760 square feet of space must be maintained. Repair budgets of \$25,000 over each of the past two years have let STRI narrowly keep pace with some of the most rudimentary of building needs, i.e., replacements of heavily used and rotting floors, completely depreciated air conditioners, etc. Although this level of funding will not permit any substantial projects of renovation, i.e., dock replacement, electrical wiring replacement on BCI, tramway replacement, it is absolutely essential to safeguard present housing space, laboratories, and the people using them. The \$25,000 requested includes \$14,000 in contract services, \$8,000 in supplies and materials, and \$3,000 in equipment. The total increase required for proper facilities operation support is, therefore, five positions and \$64,000.

3. Environment and Behavior (2 positions, \$44,000)

Additions to the STRI staff of a marine ecologist and a forest ecologist will permit progress in comprehending the relationships between ecology and behavior in these two realms. Current studies will incorporate research of wide ecosystem scope including analysis of processes such as energy flow, productivity, nutrient cycling, and food webs. The increase would enable group attacks on key questions and would contribute to the foundation of fundamental research on which to build productive collaboration with others on determining the biological costs of climatic and other physical environmental changes. In addition to fitting precisely within STRI's overall research plan, both scientists would assist in helping STRI to meet the increased calls for advanced training guidance in the subject fields. At the heart of STRI's success has been the slow but steady and deliberate assembly of an outstanding corps of young scientists. The addition of these two positions would allow a measured step of progress in servicing an area of growing need in biology. Salary needs are \$33,000; travel, households transportation, supplies, lab and office needs (\$11,000); for a total of two positions and \$44,000.

4. Administrative Support and Interagency Research (2 positions, \$34,000)

An example of interagency joint research interest is STRI's present contract with the Federal Water Quality Administration. FWOA is concerned over the effects of oil pollution on shoreline habitats. STRI, with its Galeta Point Atlantic field station and professional resources, is interested in analysis of the shoreline ecology and in changes upon it. The concerns merge under the contract to permit a study of the effects of oil pollution on a tropical shore, and natural corrective factors. Many other areas of STRI capability could be brought into mutually beneficial contract relationships with the needs of other agencies (e.g., natural controls of mosquitoes, models for crises resolution, special advanced training programs, etc.).

Proposal drafting, contracts negotiation and administration, however, require capabilities that the small hard-pressed administrative staff at STRI does not possess. The same sized work staff has handled a two-fold increase in workload only because of its devotion, energy, and efficiency. In addition to the several hundreds of research visitors per year, the administrative section now services a total of 72 full-time persons, including, on the permanent staff, ten scientists, three research aides, two librarians, three wildlife aides, and 21 facilities support personnel (game wardens, launch operators, kitchen crew, etc.), in addition to eight contract scientists, eight contract support staff, and eleven

full-year fellows. In many cases, clerical employees substitute as well as they are able for the present lack of middle management. Relief is urgently needed. Investment in an office chief and one technical typist (technical typing for the entire staff and fellows is in the hands of one person only) would be repaid many times over, and would permit STRI's small management corps to pursue a greatly increased opening of STRI's resources to cooperating agencies.

The two positions would cost \$21,000 in salaries. Administrative travel increases are necessary to permit continued progress in tying in STRI programs with those centered in Washington (\$3,000); transportation, utility and communications, rental, supply and office equipment shortages must be met (\$7,000); duplicating machinery rental contracts and administrative equipment service contract needs require increased funding (\$3,000); for a total of two positions and \$34,000.

RADIATION BIOLOGY LABORATORY

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>40</u>	<u>6</u>	<u>46</u>
11 Personnel Compensation.....	\$ 443,000	\$ 72,000	\$ 515,000
12 Personnel Benefits.....	34,000	6,000	40,000
21 Travel & Transp. of Persons	8,000	2,000	10,000
22 Transportation of Things			
23 Rent, Comm. & Utilities	306,000	2,000	308,000
24 Printing & Reproduction.....	3,000	1,000	4,000
25 Other Services	25,000	6,000	31,000
26 Supplies & Materials	39,000	4,000	43,000
31 Equipment	58,000	276,000	334,000
41 Grants			
TOTAL.....	<u>\$ 916,000</u>	<u>\$ 369,000</u>	<u>\$ 1,285,000</u>

Analysis of Total

Pay Increase	\$ 20,000	\$ 17,000	\$ 37,000
Program	\$896,000	\$352,000	\$1,248,000

Specification of Increase (Program):

Environmental Biology and Solar Radiation Monitoring (6 positions, \$352,000)

The requested increase will permit the reestablishment of Laboratory activity in the highest priority area of its operations-Environmental Biology. Facilities and controlled growing areas at the Mall location are being phased out; \$275,000 are requested for the completion and equipping of five environmentally controlled rooms at the new Rockville location. This amount will cover the shell installation, controls for light quality, intensity, duration, the relative humidity, gas content, and temperature equipment. Six positions are requested (\$61,000 personnel costs) cogent to the Environmental Biology Program, a radiation physicist, environmental physiologist, a laboratory technician, two aides, and a refrigeration mechanic. In addition, direct support funding (\$16,000) is sought to cover related program costs.

RADIATION BIOLOGY LABORATORY

1970 Actual.....\$ 676,000
1971 Estimate....\$ 916,000
1972 Estimate....\$1,285,000

From the initial charge that it be concerned with the effects on the sun's energy on earth's life, the program of the Radiation Biology Laboratory has been devoted to the study of the responses of living organisms to various qualities and intensities of radiant energy. The research of the Laboratory consists of three principal areas: 1) Regulatory Biology, 2) Environmental Biology, and, 3) Carbon-14 Dating.

Light has been recognized as the key controlling environmental factor for the development and growth of biological systems. The storage of solar radiation as chemical energy in photosynthesis is basic for all life on earth. However, the utilization of radiant energy and stored chemical energy is regulated by subtle changing signals of light quality, duration, and intensity. A primary objective of the Laboratory's efforts has always been to explain the influences of the various factors in the environment--light, temperature, humidity, and atmospheric content--on the growth and development cycles of plants and to characterize the mechanisms through which environmental signals eventually manifest their effects on the developmental processes in living organisms. This is accomplished by studying the problems in the Laboratory under controlled conditions using biochemical, biophysical, and physiological techniques and then verifying the importance of these processes in nature by monitoring the natural, dynamic environment. Such programs of research by their very nature are long-term and require the concerted team efforts of many scientific disciplines. (See the following newspaper extract).

From shortly after its inception in 1928 the Laboratory has occupied a position at or near the forefront of research on the effect of the spectral quality of visible light on plant growth and development. The existing experimental programs encompass a greater number of projects under study than in any other single laboratory in the country and perhaps in the world. The complexity of the problems studied is demonstrated by the number of disciplines encompassed within the program, which has a range through physiology, cytology, biochemistry, biophysics, physics, engineering, electron microscopy, and morphology. The Laboratory has been credited with major contributions in the field of photobiology.

The Laboratory has a phased plan of research development and for fiscal year 1972, an increase of \$352,000 is requested to correct shortages in the current Environmental Biology Research Program. The appended chart shows the past and current distribution of resources and indicates that the research program has remained relatively static in funding except for increases for legislated pay increases. An additional \$17,000 are requested for necessary pay increases.

Need for Increase

Shortages in Research Programs

In the area of Regulatory Biology, the research is primarily concerned with the photoregulatory mechanisms through which small and large changes in radiant energy trigger biochemical, physiological, and morphological changes

in living organisms. A major effort has been devoted to the isolation and physiochemical characterization of the photoreceptor "phytochrome", the pigment system responsible for regulating such diverse responses as seed germination, gross morphological development, and flowering.

Also under the program of the Radiation Biology Laboratory is a Carbon-14 Dating Unit that has a research function in addition to its operation as a service facility. The unit plays a significant role in the Institution's program of dating geological and archeological artifacts of cultural and scientific importance. Its research program includes efforts toward refinement of techniques and new instrumentation.

Although there are serious shortages in staffing for carrying on these programs, for maintenance of the building, for acquisition of sufficient laboratory furniture and adequate equipment to make the new laboratories functional at a reasonable level, and for the refrigeration capacity for providing controlled temperatures in laboratory areas, there is a critical and basic need for Environmental Biology staffing, and for establishment and equipping of environmentally controlled areas for growing plant material.

Environmental Biology and Solar Radiation Monitoring

This area of Radiation Biology Laboratory's activities is concerned with the development of instrumentation and data acquisition systems for continuously monitoring the visible solar spectrum at various stations at different latitudes. At present, two monitoring centers are operating in the Washington area, and one in Israel. Other stations are in the planning stage. Significant data have already been acquired demonstrating the presence and effects of pollutants in the atmosphere.

In conjunction with measuring the spectral quality and duration of sun and sky radiation incident to the earth's surface, studies are being carried on to correlate biological responses (such as flowering, fruiting, and other morphological characteristics) with daily and seasonal fluctuations in the color composition of sunlight. Greenhouse facilities and environmentally controlled growth rooms (until recently, located behind the Smithsonian Building) are used in the studies in determination of correlation between measured solar radiation changes and responses in plant development. A new greenhouse and environment chambers, interference filter monochromators, and other instruments have been designed and developed by the Laboratory.

When the Laboratory was relocated from the basement of the original Smithsonian Building to the facility in Rockville, there were no funds for completing the research facilities. The Environmental Biology program of the Laboratory is dependent upon controlling the major physical factors of the environment, maintaining some at constant levels and varying others to determine the comparative influence of each on plant growth. The influence of atmospheric pollutants can be analyzed under these controlled conditions, as well as influences of varying combinations of temperature, humidity, different wavelengths of light, and nutrition. Installation and equipping of the five environmental control rooms at the new Rockville location could not be undertaken. Facilities now at the Mall location are now being phased out to make room for other Smithsonian purposes. Each of the rooms projected, approximately 100 square feet of floor space, requires precision control of light quality, intensity, duration, relative humidity, gas content, and temperature. Current estimates come to approximately \$35,000 each for the shell of each room, including temperature control, humidity and gas exchange equipment, for a minimum total of \$175,000. The lighting units, capable of simulating subtle changes in spectral quality, as well as the natural photoperiod of daylight,

are presently estimated at \$20,000 each, for a total of \$100,000. The requested amount for the five environmental control rooms, with provision for the required lighting equipment, is \$275,000.

In addition, the most critically understaffed area in the Laboratory's research program is Environmental Biology, which consists of about one-third of the total program in work projected and in emphasis. The correlation of solar energy measurement data with biological growth and development is dependent upon the study of plant material grown under controlled conditions that are identical to those produced by the daily and seasonal fluctuations of the sun's light. The six major staff shortages in Environmental Biology research are a radiation physicist, an environmental physiologist, a laboratory technician, two laboratory aides and a refrigeration mechanic. The total sum requested for these positions is \$61,000. At the present time, the Director of the Laboratory is the only PhD-level scientist engaged in research in this program facet, and it can well be realized that administrative and other duties preclude a major part of his time being spent in directing and carrying on a research function. In five object categories (travel, rent and utilities, publication costs, contractual services, and supplies) a total of \$16,000 is requested to offset rising costs.

AIR POLLUTION DIMS SUNLIGHT HERE BY 16 PERCENT

By Thomas O'Toole

"Air pollution has reduced the amount of sunlight reaching Washington by 16 percent in the past half century."

"This dramatic change probably took place fairly recently. It was discovered when the Smithsonian Institution compared findings from the last two years with two similar studies of sunlight conducted 50 and 60 years ago."

"The decline could have some far-reaching effects, since it is the "quality" of sunlight that regulates the growth of plants and crops, controls the manner in which birds migrate and even dictates such things as the sex lives of some animals, like rodents and fowl."

"The Smithsonian has no direct evidence that air pollution has caused the decline in sunlight, but it has eliminated the weather as a possible cause and by doing so has concluded that it must be air pollution."

"The weather's not a factor since we've carefully compared sunlight readings on clear days," said Dr. William Klein, head of the Smithsonian Radiation Biology Laboratory, which directed the study. "The only thing that can change the amount of sunlight is the air, so it's got to be aerosols, dust particles, water vapor and hydrocarbons in the air that's doing it."

"The Smithsonian has taken readings of the sunlight reaching Washington from sunrise to sunset on almost every day since September, 1968. It missed about 20 days, either because its instruments needed maintenance or because the building where the instruments were housed needed renovating."

"The experiment has been conducted from the tower of the Smithsonian's administration building on the Mall, where instruments recorded the amount of sunlight striking the tower every three minutes. Instruments also measured the amount of light filling the sky from horizon to horizon."

"These readings were compared with readings from similar instruments put in the tower in 1909 by Dr. Charles Abbott, a Smithsonian physicist who later became the institution's fifth secretary."

Radiation Biology Laboratory:
Funding Distribution, Fiscal Years 1965 through 1971

(\$000's)

1,000 —

(* 1970 costs for six temporary employees;
1971 costs for two temporary and six
permanent employees)

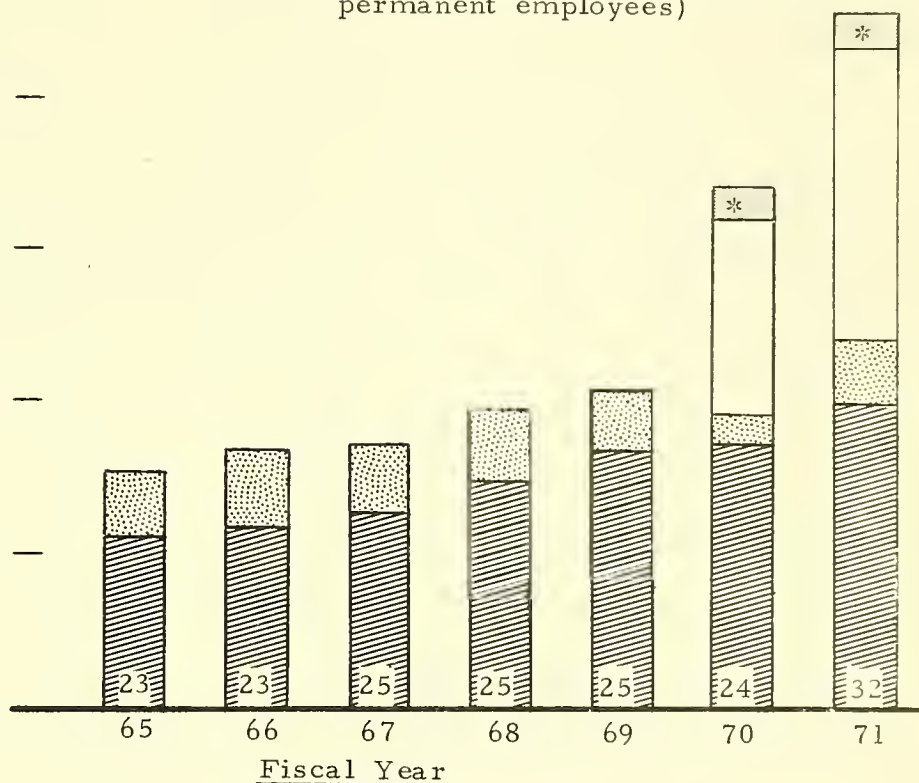
800 —

600 —

400 —

200 —

0



Salaries and benefits



No. scientific,
technical staff



Equipment, supplies, etc.



Building operations



Salaries and benefits
(building operation
staff)

Using the numbers of scientific and technical staff, and monies available for equipment, supplies and other support, the figure demonstrates that there has been no major increase in operational funds for the research program since 1965. The small annual increases from that date represent primarily salary adjustments and inflation. Although the total appropriation for 1970 and 1971 appears to have doubled over previous years, more than half represents costs associated with the operation of the new building. It should be noted that space, utilities and services were previously supplied from BMD budget. The increase in scientific staff for 1971 is primarily in non-professional technical and non-technical support.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

OFFICE OF ENVIRONMENTAL SCIENCES

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>34</u>	<u>8</u>	<u>42</u>
11 Personnel Compensation.....	\$ 503,000	\$ 79,000	\$ 582,000
12 Personnel Benefits.....	38,000	4,000	42,000
21 Travel & Transp. of Persons	6,000	6,000	12,000
22 Transportation of Things			
23 Rent, Comm. & Utilities	4,000	4,000	8,000
24 Printing & Reproduction.....			
25 Other Services	22,000	40,000	62,000
26 Supplies & Materials	5,000	60,000	65,000
31 Equipment	6,000	50,000	56,000
41 Grants			
TOTAL.....	<u>\$ 584,000</u>	<u>\$ 243,000</u>	<u>\$ 827,000</u>

Analysis of Total

Pay Increase	\$ 28,000	\$ 18,000	\$ 46,000
Program	\$556,000	\$225,000	\$781,000

Specification of Increase (Program):

Smithsonian Oceanographic Sorting Center (6 positions, \$81,000)

Emphasis in fiscal year 1972 will be on achieving urgently needed capabilities in Smithsonian Sorting Services. Several thousand samples of fresh-water organisms have been sent for sorting in connection with water quality standards. The International Decade of Ocean Exploration, the Cooperative Investigations of the Mediterranean, the International Studies of the Caribbean have regular requirements for marine sorting. The Sorting Center urgently needs four sorters, an assistant supervisor, and a registrar (\$45,000), and funds for operational support (\$36,000).

Chesapeake Bay Center for Environmental Studies (2 positions, \$144,000)

The establishment and utilization of natural areas has become very important to public and private interests in the United States and in the world. The development of principles for the evaluation of alternative land uses lags far behind the requirement for use of such concepts in decision-making. Through the Chesapeake Bay Center for Environmental Studies, the Smithsonian is developing a model watershed study of the Rhode River estuary. Together with the University of Maryland, Johns Hopkins University, Georgetown University, and several Maryland and U.S. agencies, we expect to establish rates and processes of environmental change which will be incorporated in land use management and contribute fundamental data important to the development of urban and suburban areas. To strengthen the services of the Chesapeake Bay Center, a botanist and a security officer are requested (\$20,000), and additional support funds for supplies, materials, and equipment (\$124,000).

OFFICE OF ENVIRONMENTAL SCIENCES

1970 Actual	\$565,000
1971 Estimate	\$584,000
1972 Estimate	\$827,000

The Office of Environmental Sciences was established in order to integrate the Smithsonian programs in ecology and oceanography and limnology, and to strengthen the Chesapeake Bay Center for Environmental Studies. In this establishment, it was recognized that there must be increased concern with the interface between land and water. Knowledge of land use practices as they affect waters, and of the water cycle as a vital contribution to land, becomes of first importance in environmental studies, especially of pollution.

During fiscal year 1971, a study was initiated of the environmental relationships of the Chesapeake Bay Center. Aimed at providing baseline information which could be used in planning, predicting, and evaluating the results of development of the megalopolis, this study will involve many public and private agencies and individuals in sociological, economic, and scientific investigations.

The ecology program has embarked on a series of studies designed to gain insights regarding the management of development projects. Guidelines are being developed to identify the ecological consequences of river basin development, highway construction, growth of cities, and establishment of large biological preserves. The oceanography and limnology program, working especially with offices of the U.S. Antarctic Research Program, the International Cooperative Investigations of the Mediterranean, the International Decade of Ocean Exploration, and other national and international programs, coordinates the participation of scientists of several Smithsonian bureaus and of scientists associated with the Smithsonian in exploration of the oceans. The Office also provides impartial sounding boards for public and agency examination of such issues as pollution in New York Harbor, underwater archeology, Chesapeake Bay research, and marine natural preserves. Through its sorting centers in Washington, D. C. and in Tunisia (the latter principally supported by the foreign currency program), the Office supplies marine biological and geological specimens and related data to scientists around the world.

A program increase of \$225,000 is requested for fiscal year 1972 primarily for the support of the Oceanographic Sorting Center and the Chesapeake Bay Center as national resources. An additional \$18,000 are requested for necessary pay increases.

Need for Increase

1. Smithsonian Oceanographic Sorting Center (6 positions, \$81,000)

The Sorting Center processes marine specimens from United States and international expeditions for use by more than 300 scientists from 27 countries in specimen-related research. The Center provides marine biological and geological identification services and operates as a national referral service for all kinds of specimen-based activities, from field collecting to the disposition of identified species in permanent repositories.

The Center has made concerted efforts to improve its productivity. An automatic data processing system for specimen records has been started. Many instruments and scientific devices have been acquired or fabricated to improve efficiency. When possible, items have been procured through government surplus sources to save funds.

Despite improved productivity, the Center is unable to meet the increasing demand from colleges, universities, and federal agencies for specimens. Backlogs of unsorted samples now exist for specimens gathered from the Great Lakes and several important oceanic expeditions. The backlog results primarily from the inability of the present staff to process and sort the more than 10,000 samples being received annually. Unless these samples are sorted soon, many will deteriorate to the point of being useless for research.

In order to alleviate this backlog, \$45,000 are requested for four sorter-technicians, an assistant supervisor, and a registrar. Support funds in the amount of \$36,000 also are requested for contract services, supplies, and equipment needed to sort, package, and distribute specimens, and for travel and rental of equipment.

2. Chesapeake Bay Center for Environmental Studies (2 positions, \$144,000)

The Chesapeake Bay Center is a 2,000 acre natural and semi-natural area located seven miles south of Annapolis, Maryland, about equidistant from Baltimore and Washington. It was established in 1966 and a formal open-ended consortium with Johns Hopkins University and the University of Maryland was created to promote a program of research and education designed to develop ecological knowledge with emphasis on populations, communities, and ecosystems. This program demands the preservation of the land in a natural state, the development of a model watershed research and management program, and the use of the Center as a focal point for educational activities.

A major difficulty that impedes the study of natural systems is the shortage of adequate field stations and research facilities. Ecology is an outdoor science. Although important studies have been done in the laboratory, with few exceptions these have been inspired by observations made in the field. The most effective starting point for the development of ecosystem science is the establishment of natural areas to be used for research and education, with a guarantee of administrative continuity so that long-range research programs can be initiated confidently. The fundamental importance of the Center is the fact that it constitutes the primary mechanism for both teaching and research on complex living systems.

Together with collaborating universities, federal and state agencies, the Center can be used for a model watershed program for the Rhode River. The Center has 12 miles of shoreline and occupies nearly one-half of the shoreline of the Rhode River estuary. Yet the Center has no resident capability for the study of this estuary. It is proposed that such a capability be established. A scientist would be employed and support provided for studies of the estuary. The monitoring of rates and processes of change in this environment is especially vital as the development of suburbs begins to encroach on the Rhode River watershed.

Data on land use history, ecosystem function, and socioeconomic trends and attitudes will be used in a way that will result in optimal wise use of the land and water resources of this small watershed and its adjacent estuary. This model community action program is being developed in conjunction with the Anne Arundel County Office of Planning and Zoning, the Maryland Department of Natural Resources, the Soil Conservation Service, the U.S. Geological Survey, the Department of Housing and Urban Development, and other agencies. A constructive interaction will be established with the people of the area. Such interaction will demonstrate land use planning that offers tangible environmental benefits while avoiding the undesirable elements of a rapidly urbanizing complex. The movement of fertilizers, herbicides, and pesticides, and the effects of soil erosion and estuarine sedimentation, as well as the role of marshes as filter mechanisms, and the influences of these phenomena on the land, living systems, and estuary are studies that may result in suitable control measures applicable to other areas.

The maintenance of the Center as large natural area serves educational purposes and contributes to the esthetic quality of the region. As the area between Washington and Baltimore becomes increasingly populous, the Center increases in importance as a training ground for pre and postdoctoral students, undergraduates, visiting scientists, and others. The use of the Center as a major interpretive facility for young people is rapidly increasing in volume and importance. A museum and nature trail, visual aids, lectures, and "in the field" presentations assist in instilling the individual ecological perspective necessary for our future existence.

For fiscal year 1972, funds are requested for a botanist to survey the vegetation of the watershed, and a security officer to protect the land and water areas (\$20,000). An additional amount of \$124,000 is requested for travel, utilities, services, supplies, and equipment in support of the watershed program and other community-related services of the Center.



SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

NATIONAL AIR AND SPACE MUSEUM

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>41</u>	<u>3</u>	<u>44</u>
11 Personnel Compensation.....	\$462,000	\$ 47,000	\$ 509,000
12 Personnel Benefits.....	37,000	4,000	41,000
21 Travel & Transp. of Persons	13,000	2,000	15,000
22 Transportation of Things	22,000	5,000	27,000
23 Rent, Comm. & Utilities	3,000	0	3,000
24 Printing & Reproduction.....	7,000	0	7,000
25 Other Services	43,000	20,000	63,000
26 Supplies & Materials	19,000	12,000	31,000
31 Equipment	20,000	15,000	35,000
41 Grants			
TOTAL.....	<u>\$ 626,000</u>	<u>\$ 105,000</u>	<u>\$ 731,000</u>

Analysis of Total

Pay Increase	\$22,000	\$15,000	\$37,000
Program	\$604,000	\$90,000	\$694,000

Specification of Increase (Program):

Preservation and Restoration of Collections and Exhibits Planning (3 positions
\$90,000)

The target year of 1976 has been selected for the opening of the new National Air and Space Museum building as an important contribution to the national celebration of the American Revolution Bicentennial. A request for planning and redesign funds for this building appears in the construction section of the Smithsonian's budget estimates. This lends impetus to what is already a major institutional need; that is, preserving and restoring our air and space collections. Most of these items are located at the Silver Hill, Maryland, storage facility. About 60 aircraft require conservation and restoration to prevent deterioration. An amount of \$81,000 is requested for three curatorial assistants, contractual restoration services, replacement parts and equipment, and related needs. Also requested are \$9,000 to initiate planning of new exhibits for the building.

NATIONAL AIR AND SPACE MUSEUM

1970 Actual.....\$486,000
1971 Estimate.....\$626,000
1972 Estimate.....\$731,000

By Act of August 12, 1946, the Congress established the National Air Museum as part of the Smithsonian Institution and later by Act of July 19, 1966, added the memorialization of space flight to its responsibility and changed its name to the National Air and Space Museum. The functions of the Museum are to memorialize the national development of aviation and space flight; collect, preserve, and display aeronautical and space flight equipment of historical interest and significance; and serve as a repository for documents pertaining to the development of aviation and space flight. The same Act of July 19, 1966, authorized and directed the Regents of the Smithsonian Institution to prepare plans and to construct a suitable building for the National Air and Space Museum. The target year of 1976 has been selected for the opening of this new building as an important part of the Smithsonian Institution's program for celebration of the American Revolution Bicentennial. A request for planning and redesign funds for this building appears in the construction section of the Smithsonian's budget estimates.

An additional \$90,000 are requested for the preservation and restoration of the Museum's collections and the initiation of exhibits planning. Funding of \$15,000 for necessary pay also is requested.

Need for Increase--The staff of the National Air and Space Museum in carrying out the Museum's functions has selectively acquired the world's most comprehensive collection of historically significant aircraft, spacecraft, engines, instruments, components, and accessories. At the same time there has been assembled a large and valuable collection of documents, photographs, drawings, and publications recording experimentation, research, and development of aircraft and spacecraft together with the history of the aerospace industry.

The museum exhibits a small quantity of historical aircraft, spacecraft, and memorabilia in a 1917 steel shed called the Air and Space Building and in the Arts and Industries Building which was built in 1879-81 for the United States National Museum. These temporary quarters are both inadequate and inappropriate for exhibit of the history and development of this country's aviation and spaceflight. Nevertheless these temporary displays are among the most popular at the Smithsonian museums. In fiscal year 1970 over two and one-half million visitors were counted entering the Arts and Industries Building.

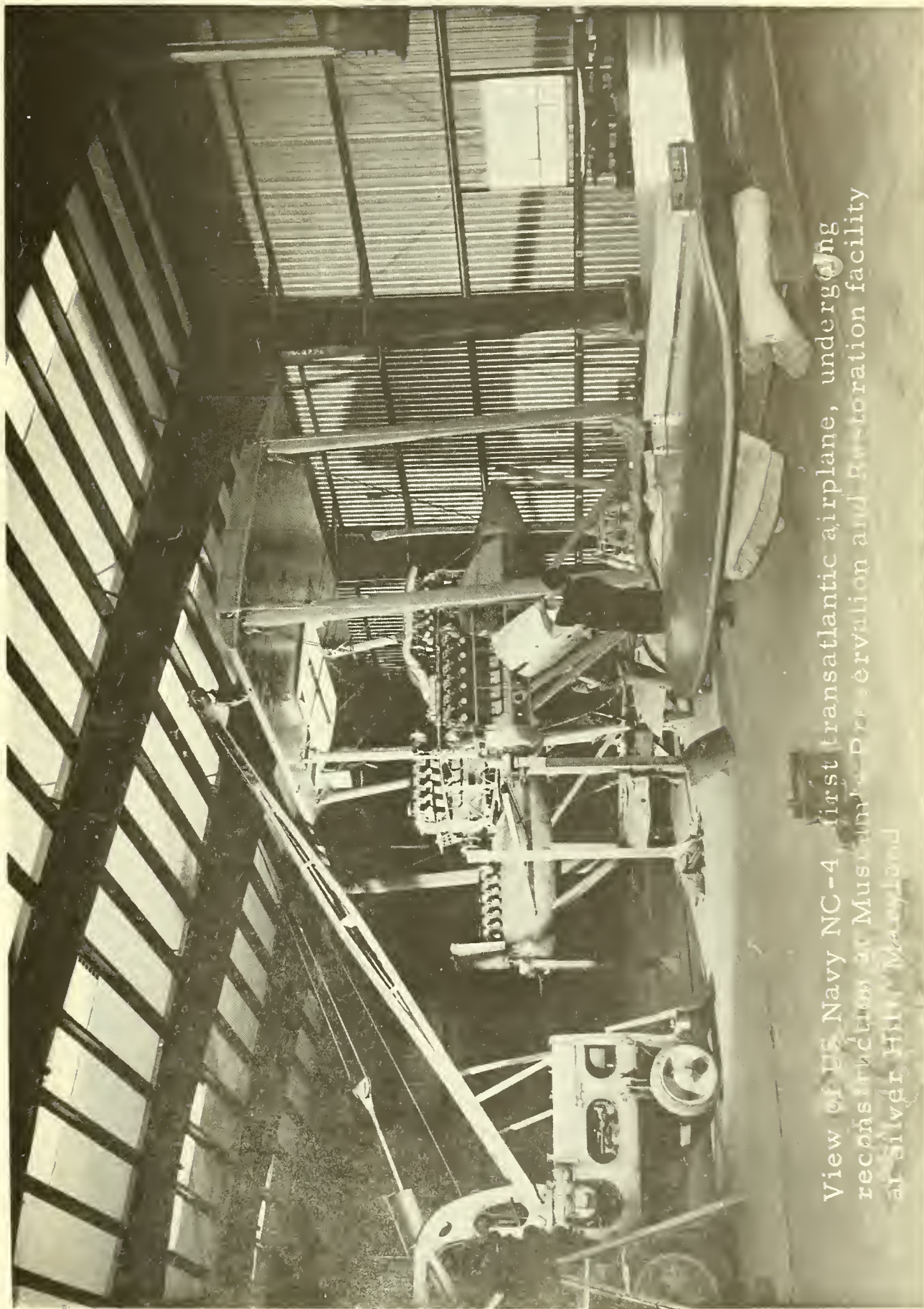
The Museum currently has on loan to other museums some 25 aircraft and 30 engines and propellers. Spacecraft and spacesuits are loaned to the U.S. Information Agency and U.S. Department of Commerce for display in U.S. overseas exhibitions, but the majority of most significant spacecraft are displayed in Washington and many locations throughout the United States.

Most of the aircraft, engines, and spacecraft are located at the Smithsonian storage facility at Silver Hill, Maryland. About 60 of the aircraft are unassembled and inadequately protected from deterioration. A program of conservation and restoration of these historic aircraft is being conducted. On following pages, are photographs showing the U.S. Navy NC-4, first transatlantic airplane, undergoing restoration and restored. The restoration of aircraft is slow and costly, however, and it is necessary to accelerate this program to arrest deterioration and prepare the collections to memorialize the nation's

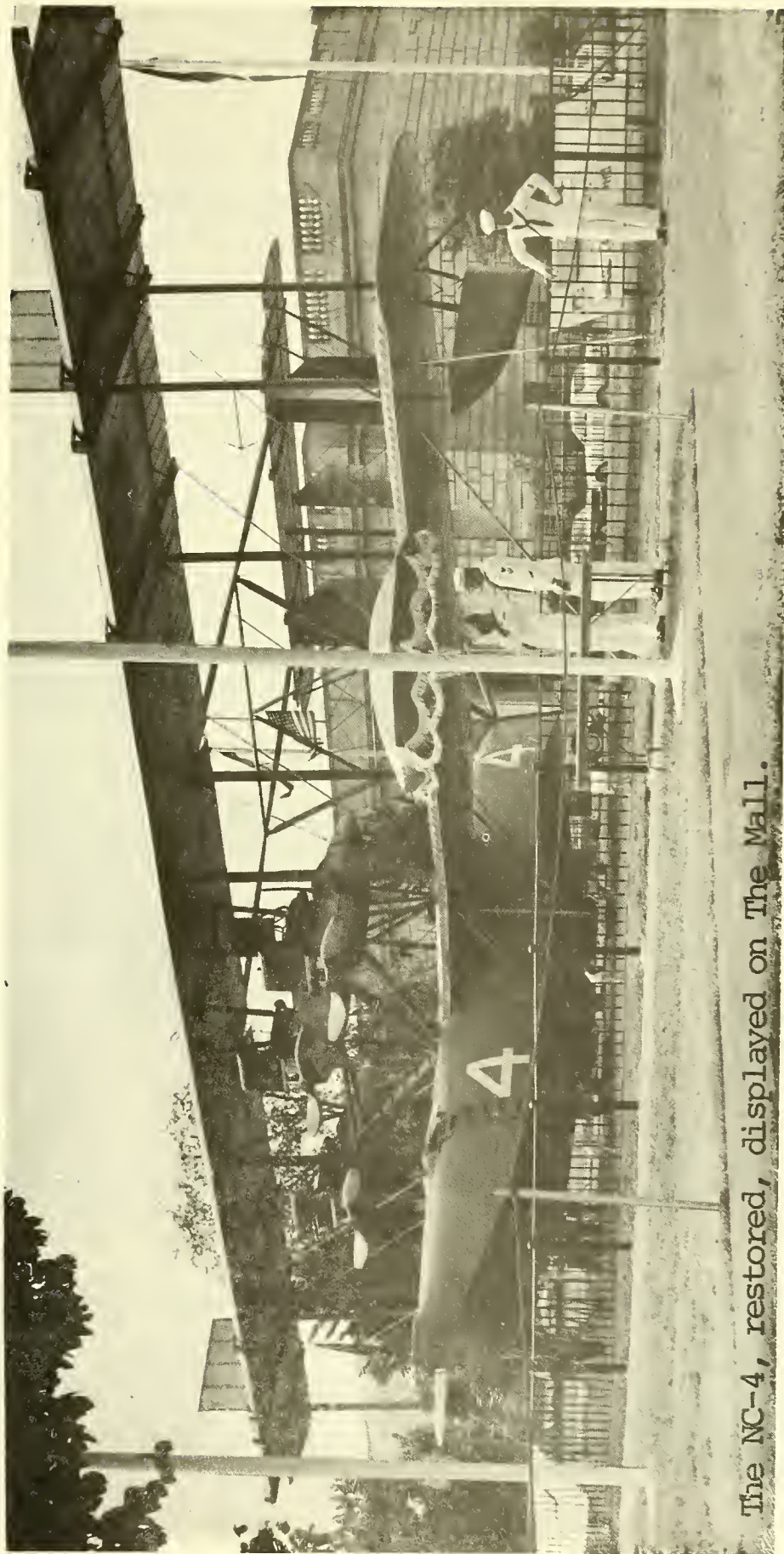
flight accomplishments in an effective and dignified manner. Among the first aircraft scheduled for restoration are the XC-35 (the first pressurized, high altitude airplane), the Douglas World Cruiser, and the Neiuport 83. In the case of spacecraft, as received from the National Aeronautics and Space Administration, refurbishment by replacement of missing instruments and sheathing with protective plastic is necessary prior to placing on exhibition.

For the essential program of preservation and restoration of aircraft and spacecraft collections an increase of \$81,000 is required. This will provide for three curatorial assistants for research supporting restoration of collections, the planning and production of new exhibits, and increased requirements for public services. Last year a series of new educational programs were initiated in cooperation with local high schools and limited tours at the Silver Hill facility commenced. It is desired to increase these and other services to the American public. This funding will also provide specialized maintenance and repair, replacement parts and equipment, contractual restoration services, and related travel and transportation.

For the research and planning of details for the new museum building, and development of new exhibit techniques which will be utilized in the new structure, an increase of \$9,000 is required.



View of US Navy NC-4, first transatlantic airplane, undergoing reconstruction at Museum's Preservation and Restoration facility at Silver Hill, Maryland



The NC-4, restored, displayed on The Mall.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

CENTER FOR THE STUDY OF MAN

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>7</u>	<u>3</u>	<u>10</u>
11 Personnel Compensation.....	\$ 71,000	\$ 22,000	\$ 93,000
12 Personnel Benefits.....	5,000	2,000	7,000
21 Travel & Transp. of Persons	10,000	5,000	15,000
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....			
25 Other Services	63,000	37,000	100,000
26 Supplies & Materials	1,000	0	1,000
31 Equipment	2,000	2,000	4,000
41 Grants			
TOTAL	<u>\$ 152,000</u>	<u>\$ 68,000</u>	<u>\$ 220,000</u>

Analysis of Total

Pay Increase	\$ 4,000	\$ 3,000	\$ 7,000
Program	\$148,000	\$65,000	\$213,000

Specification of Increase (Program):

Encyclopaedia of North American Indians (3 positions, \$48,000)

Planning and initial development of the 17 volume Encyclopaedia are proceeding smoothly. A distinguished group of anthropologists and historians have been chosen as volume editors. By May 1971, it is anticipated that writing assignments will be established with about 850 contributors. The first return of manuscripts is expected by August 1971 with all manuscripts received and revised by May 1974. A July 1976 publication date is planned as part of the American Revolution Bicentennial celebration. To meet a firmly identified growing workload, three additional personnel are requested (a copy editor, a research assistant, and a typist) and other funds for the expenses of volume editors and contributors--\$48,000 in total.

Anthropological Communications and Research Programs (\$17,000)

An additional \$17,000 are requested to fund additional small grants for urgent anthropology research in geographical areas that are undergoing rapid environmental change as a result of urbanization, improved communication, better transportation, or other factors. These funds would also be used to support a task force study of world population growth.

CENTER FOR THE STUDY OF MAN

1970 Actual	\$ 83,000
1971 Estimate	\$152,000
1972 Estimate	\$220,000

The Center for the Study of Man is presently concentrating its efforts in three general areas of program development: American Indian Program; International Anthropological Communications Program; and the Coordination of Research on Major World Problems. Under the American Indian Program, three interrelated activities can be identified:

- Development of the 17 volume Encyclopaedia of North American Indians (successor to the original Handbook) including appropriate American Indian scholarly input and involvement.
- Development of a system for providing scholarly educational materials concerning Indians to individuals, schools, and Indian communities; and helping to coordinate educational intercommunication among Indians themselves, and with scholars and appropriate governmental and private agencies.
- Development of a legal-historical research program on the North American Indian land base.

For fiscal year 1972, an increase of \$65,000 is requested for continued development of the Encyclopaedia of North American Indians and for the anthropological communications and research programs. An additional \$3,000 are requested for necessary pay for current staff.

Need for Increase

1. Encyclopaedia of North American Indians (3 positions, \$48,000)

The purpose of the Encyclopaedia, consisting of 17 volumes, is to summarize all that is known of the prehistory, history, and traditional and modern cultures of all the Indian groups north of Mexico, to bring up to date and replace the previous standard encyclopaedic work on this topic which was issued by the Smithsonian in 1907-1910. This will become the standard reference work on all aspects of North American Indian history and anthropology for students, teachers, authors, researchers, and administrators, both non-Indian and Indian, both U.S. and foreign. A list of the volume titles is shown on a following page.

Ever since its founding, the Smithsonian has conducted important research on American Indian history and cultures, and has been looked to as an important (often the most important) source of information on these topics. As a result, the resources of the Institution--scientific staff, manuscript and picture archives, library, and museum collections--are unexcelled anywhere as a basis for this project.

Planning for the Encyclopaedia of North American Indians has now been completed. A series of meetings have been held, first by an Advisory Committee to choose volume editors, and then by each volume editor to select authors for his particular volume. A distinguished group of anthropologists and historians, including two American Indians, have been chosen as volume editors. These volume editors come from a number of distinguished institutions including the University of Nevada (Dr. Warren D'Azevedo), University of Iowa (Dr. June Helm), Portland State University (Dr. Wayne Suttles), University of Oklahoma (Dr. William Bittle), University of Arizona (Dr. Frederick Hulse), Harvard University (Dr. Ives Goddard), University of Chicago (Dr. Raymond Fogelson),

University of California (Dr. Mary Haas and Dr. Robert Heizer), McMaster University (Dr. David Damas), Princeton University (Dr. Alfonso Ortiz), McGill University (Dr. Bruce Trigger), and the University of Saskatchewan (Professor D'Arcy McNickle). The Encyclopaedia office is functioning smoothly and everyone connected with the project has been cooperative and enthusiastic.

The timetable for this project is as follows:

May 1971--writing assignments given to approximately 850 contributors;
May 1972--completed manuscripts received;
May 1973--revised and reassigned manuscripts completed;
May 1974--submission of manuscripts for the 17 volumes to the printer;
July 1976--issuance of the Encyclopaedia as part of the American
Revolution Bicentennial celebration.

The requested additional funds will be used to hire three new personnel (a copy editor, a research assistant, and a secretary-typist) and to pay for the expenses of volume editors and contributors. It is anticipated that the first manuscripts will be arriving by August 1971 and that they will increase in number as the year progresses.

2. Anthropological Communications and Research Programs (\$17,000)

The remainder of the requested increase would go to support the International Anthropological Communications Program and the research program on topics relevant to the understanding of major world problems. For the former, \$5,000 are requested to be used mainly in support of the Urgent Anthropology Small Grants Program. The remaining funds (\$12,000) would be used to assemble a task force of human science specialists to begin a five-year research program on how different cultures manage their environment.

The Urgent Anthropology Small Grants Program has been meeting the needs of the scientific community by identifying, publicizing, and financing small grants for research in geographical areas that are undergoing rapid environmental change as a result of urbanization, improved communications, better transportation, and other factors. During fiscal year 1970, in collaboration with 40 scholars and nine institutions, nine grants with a value of \$7,600 were made. As an example of this program, during the past summer, a small grant of \$1,000 resulted in a study of the Ahashamen Indians of San Juan Capistrano. Twenty-five reels of taped materials were collected on the language and oral history of these people. In addition, a number of pictures were taken and a large number of field notes were recorded. Another small grant of \$1,000 has resulted in an unusual study of a Tibetan monastery which was recently built in Switzerland. For the first time, we have been able to record the actual construction of a Tibetan monastery, together with the accompanying ritual. It may never be possible to do this again.

The research program on management of the environment is a continuation of efforts to assemble "task forces" of human scientists from appropriate institutions throughout the world to work together on major world problems. This year the Center is studying and inventorying present knowledge about problems of world population growth with emphasis on discovering what an anthropological approach to this problem will reveal. Included in this effort are scientists, scholars, and persons involved in administration of programs (governmental and otherwise) concerned with this problem. Educational means (including museum exhibits, mass media communication, etc.) to provide information to the public, including governments and other appropriate organizations, are being established. It is anticipated that members of the "task force" will work together for a five-year period before publishing their final results.

Volumes of the Encyclopaedia of North American Indians

- I. Introduction
- II. Contemporary Affairs
- III. Environment, Origins, and Population
- IV. History of Indian-White Relations

Area Volumes:

- V. Arctic
- VI. Subarctic
- VII. Northwest Coast
- VIII. California
- IX. Southwest
- X. Basin-Plateau
- XI. Plains
- XII. Northeast
- XIII. Southeast
- XIV. Comparative Culture
- XV. Languages
- XVI. Biographical Dictionary
- XVII. General Index

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

CENTER FOR SHORT-LIVED PHENOMENA

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>1</u>	<u>3</u>	<u>4</u>
11 Personnel Compensation.....	\$ 14,000	\$ 26,000	\$ 40,000
12 Personnel Benefits.....	1,000	2,000	3,000
21 Travel & Transp. of Persons	1,000	2,000	3,000
22 Transportation of Things	0	1,000	1,000
23 Rent, Comm. & Utilities	9,000	26,000	35,000
24 Printing & Reproduction.....	5,000	14,000	19,000
25 Other Services	4,000	15,000	19,000
26 Supplies & Materials	3,000	3,000	6,000
31 Equipment		1,000	1,000
41 Grants			
TOTAL.....	<u>\$ 37,000</u>	<u>\$ 90,000</u>	<u>\$127,000</u>

Analysis of Total

Pay Increase	\$ 2,000	\$1,000	\$3,000
Program	\$35,000	\$89,000	\$124,000

Specification of Increase (Program):

World-Wide Natural Event Monitoring and Reporting (3 positions, \$89,000)

Over the past three years, the Center has reported over 320 ecological, geophysical, and astrophysical events occurring in 78 countries and all the world's oceans. Its reporting network has grown to 2,600 scientists and scientific field stations in 148 countries and territories. Despite an enthusiastic response from federal agencies and the international scientific community, outside financial support for regular, on-going operations is difficult to obtain. Special reporting projects are so funded and the Center has a subscription program which produces about \$25,000 a year. A program increase of \$89,000 is requested to find three additional positions (event research specialist in biology; an event information specialist, and an operations specialist for \$27,000) and to provide for communications, printing, computer services, and other operational costs (\$62,000).

CENTER FOR SHORT-LIVED PHENOMENA

1970 Actual..... \$11,000
1971 Estimate..... \$37,000
1972 Estimate.....\$127,000

The Center for Short-Lived Phenomena is an early alert system and clearinghouse for the reception and dissemination of information on short-lived natural events. The Center alerts scientists, agencies, and research institutions to major short-lived ecological, geophysical, and astrophysical events occurring anywhere in the world. It quickly communicates data and descriptive information on events such as large oil spills, major atmospheric and water pollution events, high biocide residue discoveries, massive fauna and flora mortalities, volcanic eruptions and major earthquakes, the birth of new islands, the fall of large fireballs and meteorites, sudden changes in biological and ecological systems such as animal migrations and colonizations, and any other natural or man-made phenomena that require rapid response from scientists in order that they may take advantage of research opportunities while environmental changes are occurring.

During the past three years the Center has reported over 320 short-lived events that occurred in 78 countries and all the world's oceans, including 143 earth science events, 102 biological and ecological events, 49 astrophysical events, and 8 urgent anthropological and archaeological events that led to 237 scientific field expeditions. The Center has issued over 1,000 event notification and information reports to thousands of research scientists and institutions, published 52 event reports, handled a communications volume of over half a million cable words and mail volume of 690,000 event notification and information cards. Charts on a following page show growth of the Center's activities.

An increase of \$90,000 is requested for the Center's basic operations.

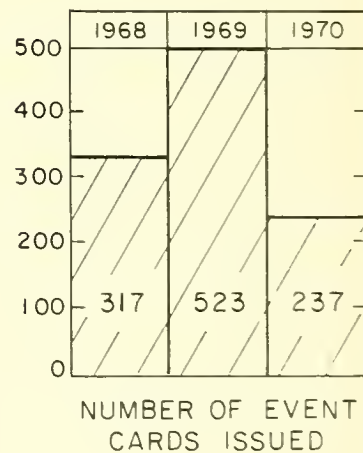
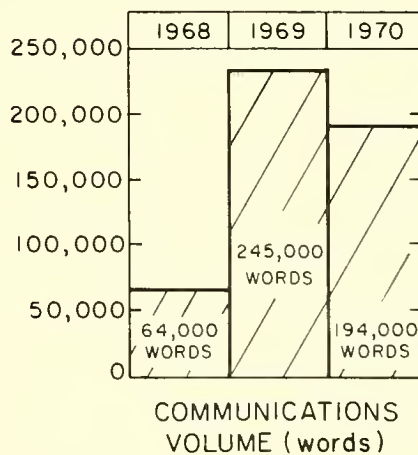
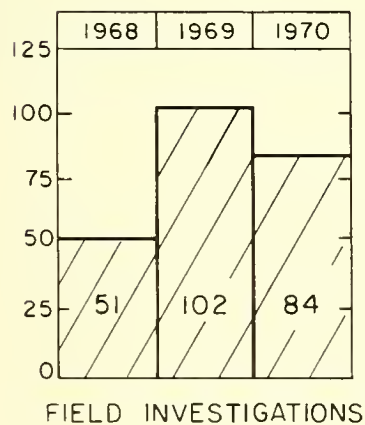
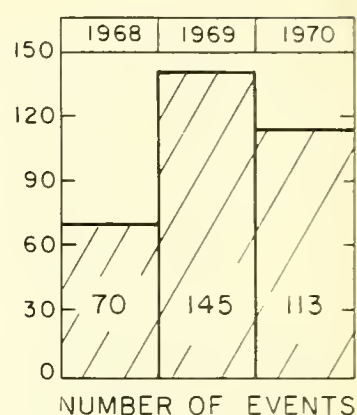
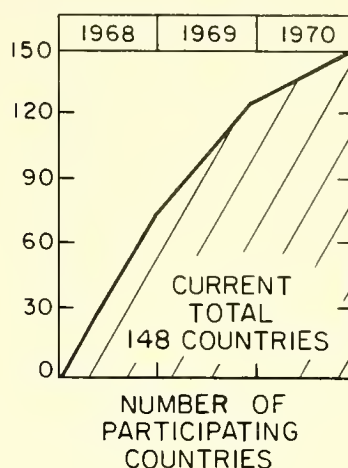
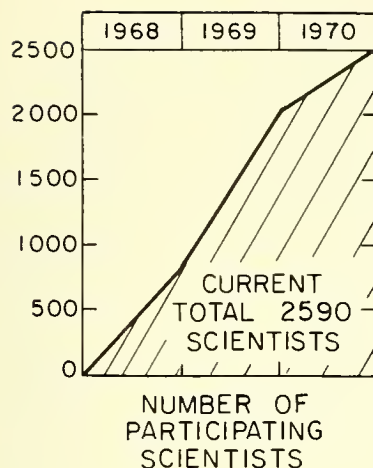
Need for Increase--The Center has had an overwhelming response from federal agencies and the international scientific community. At the urging of a number of agencies and international organizations, it has become involved increasingly in reporting significant environmental pollution events. Because of its comprehensive global communications system and its reporting network that has now grown to 2,600 scientists and scientific field stations in 148 countries and territories, the Center was able to report every major environmental pollution event, volcanic eruption, earthquake, oil spill, and meteorite fall that occurred on earth in 1970, usually within hours after the events occurred.

The Center has instituted many labor and cost-saving measures such as the development of automatic computer printouts of event notifications, but current staff and resources are severely limited. Its ability to cope with the demand for its services, particularly requests from federal agencies and international organizations for fast, qualitative information on environmental pollution events, is very inadequate. The Center has been successful in obtaining outside financial support from the Ford Foundation, from UNESCO, from NASA, and from the AEC for special projects dealing with global environmental monitoring and the transient lunar phenomena program. It has also instituted an event notification subscription program that now has over 600 subscribers and produces income of over \$25,000 per year, but the success of the Center's regular operations will depend heavily on the level of core federal funding that will be received.

The Center will begin no new activities in fiscal year 1971 and plans none for fiscal year 1972 that will use federal funds but requests that fiscal year 1972 federal support be provided for two types of current shortages: those resulting from the Center's increased commitments in environmental pollution event information communication, and those resulting from the loss of grant and contract support from NASA and NSF due to agency budget cuts.

An increase of three federal positions is requested: an event research specialist (biology) to handle a burgeoning volume of event research on ecological and environmental pollution events; an event information specialist to assist in the collection and dissemination of event information to 160 federal agencies and scientific research centers throughout the world; and an operations specialist to handle a continuously increasing communications and computations workload (\$28,000). In order to continue to operate the Center at its current level, the following increases in basic federal support for the Center also are requested: travel (\$2,000); transportation of things (\$1,000); rent, communications, and utilities (\$26,000); printing and reproduction (\$14,000); other services (computations and information systems support) (\$15,000); supplies and materials (\$3,000); and equipment (\$1,000). The total increase requested, \$90,000, will permit the Center to continue to operate at its current level of activity in fiscal year 1972.

GROWTH OF ACTIVITIES OF THE SMITHSONIAN CENTER FOR SHORT-LIVED PHENOMENA



SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

NATIONAL ZOOLOGICAL PARK

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>249</u>	<u>48</u>	<u>297</u>
11 Personnel Compensation.....	\$ 2,384,000	\$ 357,000	\$ 2,741,000
12 Personnel Benefits.....	208,000	43,000	251,000
21 Travel & Transp. of Persons	8,000	10,000	18,000
22 Transportation of Things	3,000	0	3,000
23 Rent, Comm. & Utilities	114,000	30,000	144,000
24 Printing & Reproduction.....	1,000	0	1,000
25 Other Services	42,000	23,000	65,000
26 Supplies & Materials	319,000	97,000	416,000
31 Equipment	71,000	95,000	166,000
41 Grants			
TOTAL.....	<u>\$ 3,150,000</u>	<u>\$ 655,000</u>	<u>\$ 3,805,000</u>

Analysis of Total

Pay Increase	\$ 155,000	\$ 70,000	\$ 225,000
Program	\$2,995,000	\$585,000	\$3,580,000

Specification of Increase (Program):

Office of Director (8 positions, \$135,000)

Improve public services; staffing the Hospital-Research Building; increased costs of operating items.

Operations and Maintenance Department (30 positions, \$293,000)

Accomplishment maintenance workload; increased costs of operating items; equipment replacement.

Department of Living Vertebrates (5 positions, \$72,000)

Accomplish research workload; acquisition of animals; animal food; increased costs of operating items.

Department of Scientific Research (1 position, \$31,000)

Accomplish research workload; temporary employees.

Animal Health Department (4 positions, \$54,000)

Improve medical treatment.

NATIONAL ZOOLOGICAL PARK

1970 Actual.....\$2,847,000 1/
1971 Estimate.....\$3,150,000
1972 Estimate.....\$3,805,000

The National Zoological Park was founded by Congress in 1889 for the "advancement of science and the instruction and recreation of the people." To accomplish this mission, the Zoo exhibits a broad zoological collection of animals from all parts of the world in natural surroundings; maintains an information and education program for the benefit of the visiting public from all over the United States; and promotes scientific research, including biomedical programs, for increased scientific knowledge and for the benefit of the animals so that visitors can enjoy them in prime health. To accomplish this mission, the Zoo is organized in five departments: Office of the Director; Operations and Maintenance; Living Vertebrates; Scientific Research; and Animal Health.

For fiscal year 1972, a program increase of \$585,000 is requested to staff and operate the new Hospital-Research Building and other facilities; to operate the new heating plant; to replace ground equipment items; to augment the travel, animal acquisition, and food funds; and to install a new communication system. An additional \$70,000 are required for necessary pay increases.

These increases are distributed in the following table. Specific details of organization, functions, and budget requirements are presented on the following pages.

(In thousands of dollars)	<u>1970</u>		<u>1971</u>		<u>1972</u>	
	<u>Pos.</u>	<u>Amount</u>	<u>Pos.</u>	<u>Amount</u>	<u>Pos.</u>	<u>Amount</u>
Office of Director.....	60	\$814	61	\$909	69	\$1,088
Operation and Maintenance.....	99	975	100	1,114	130	1,420
Living Vertebrates.....	77	874	77	962	82	1,043
Scientific Research.....	5	72	6	84	7	118
Animal Health.....	<u>5</u>	<u>67</u>	<u>5</u>	<u>81</u>	<u>9</u>	<u>136</u>
Total.....	246	\$2,802	249	\$3,150	297	\$3,805

The number of zoo visitors increases annually. In calendar year 1970, approximately 5,200,000 visited the Zoo. A significant number of these visitors are in organized school groups from the metropolitan area and more distant points. The Zoo is increasingly used as a teaching site by teachers of biology and other natural sciences. The increased visitor load increases requirements for patrols, trash clean-up, washroom sanitation, first aid, and other services.

Continued improvements have been made in the collection of animals, which is one of the world's largest. As the collection evolves, the zoo will present exhibits of greater visitor interest and, at the same time, give greater emphasis to species and groups which effectively demonstrate significant points of animals & adaptations and behavior. Greater emphasis will be given also to increasing zoo births by pairing unmated animals and maintaining breeding groups. Not only is this good conservation practice; it is essential in view of the increasing scarcity of many species and the high prices that must be paid to acquire them.

Construction and improvement programs have progressed with the following results. The east-west perimeter road, eliminating through traffic in the main section of the Park, was completed in June 1964. The incinerator for the

1/ Included in the District of Columbia budget.

sanitary disposal of trash and waste materials was completed in June 1964. In February 1965, the remodeling and renovation of the Bird House was accomplished. In June 1965, the new Great Flight Cage and two parking lots for 245 visitor cars were completed. A parking lot which accommodates 260 visitor cars and 24 buses was completed in October 1965. Construction of a trunk sewer to eliminate most of the pollution discharged into Rock Creek was completed in June 1967. The remaining discharge, chiefly from waterfowl ponds, was eliminated by construction funds appropriated in fiscal year 1968. The Deer Area was completed in November 1965. The Hardy Hoofed-Stock Area was completed in August 1966, and Delicate Hoofed-Stock buildings No. 1 and 2 were completed in January 1967. The construction of the new Hospital-Research Building, started in June 1968, was completed in January 1970. The old coal fired boilers were replaced with new gas fired units during the summer of 1970.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

NATIONAL ZOOLOGICAL PARK
Office of the Director

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>61</u>	<u>8</u>	<u>69</u>
11 Personnel Compensation.....	\$ 657,000	\$ 72,000	\$ 729,000
12 Personnel Benefits.....	56,000	21,000	77,000
21 Travel & Transp. of Persons	8,000	4,000	12,000
22 Transportation of Things	1,000	0	1,000
23 Rent, Comm. & Utilities	114,000	30,000	144,000
24 Printing & Reproduction.....	1,000	0	1,000
25 Other Services	28,000	18,000	46,000
26 Supplies & Materials	33,000	18,000	51,000
31 Equipment	11,000	16,000	27,000
41 Grants			
TOTAL.....	<u>\$ 909,000</u>	<u>\$ 179,000</u>	<u>\$ 1,088,000</u>

Analysis of Total

Pay Increase	\$ 45,000	\$ 44,000	\$ 89,000
Program	\$864,000	\$135,000	\$ 999,000

Specification of Increase (Program):

Improve the Services of the Director's Office (2 positions, \$38,000)

As the Zoo increases in popularity as a source of scientific information, the volume of correspondence has increased. Two secretarial positions and supplies and equipment are requested (\$16,000). Additional travel funds (\$4,000) are needed largely in connection with the animal acquisition program. Funds are also required to meet the rising costs of routine services, supplies, and equipment associated with Director's Office operations (\$18,000).

Staffing the Hospital-Research Building (3 positions, \$34,000)

The Hospital-Research Building was completed and occupied in January 1970; the Pathology Office was transferred to this building in September 1970. A histopathology technician and a secretary are needed for specific research projects (\$16,000). One police position is requested to enlarge the night shift for the protection of drugs and expensive medical equipment (\$9,000). Supplies and equipment, including books, are required for hospital operations (\$9,000).

Administrative Services (3 positions, \$63,000)

As Zoo programs develop, the Supply Section workload has expanded. Request is for two positions, supplies, and equipment to augment the staff of this section (\$14,000). One clerk-typist position and supplies and equipment are required for the protective service program to perform administrative tasks now done by officers who should be on patrol duties (\$8,000). An increase in utilities funding (\$30,000) is requested to operate the new heating plant and to meet the increased cost of operating the Hospital-Research Building. Funds (\$11,000) are requested to replace and expand the communications system on a rental basis.

National Zoological Park
Office of Director

The Office of the Director plans and directs all Zoo programs. It also coordinates the activities and functions of the Pathology Office and the Planning and Design Office; directs the protective service program; develops and maintains the Zoo's educational program; and furnishes general administrative services. The animal acquisition program is under the direction of this office. The Office of Pathology performs histopathologic and gross pathologic diagnosis of disease in the animal collection and education of biomedically aligned students and trainees. The Planning and Design Office coordinates all construction projects and prepare criteria and architectural design of major structures. The protective services program enforces laws and regulations for the protection and safety of visitors, animals, and Government property. The educational program is being implemented through informative labels, exhibits, lectures, guided tours, and cooperative programs with local school systems. Administrative services include personnel, budget, fiscal, supply, and procurement functions.

An increase of \$135,000 is requested to provide eight positions to meet the increases in workload in the Director's Office, Pathology Office, protective services program, and administrative services; to cover increased costs of travel, utilities, supplies, and equipment; and to install a new communication system. An additional funding of \$44,000 is sought for necessary pay purposes.

Need for Increase

1. Directors Office (2 positions \$38,000)

As the Zoo increases in popularity as a source of scientific information, the volume of correspondence (local, national, and international) has increased, causing a backlog of administrative requirements. To meet the increased volume of work in the Director's Office and the Assistant Director's Office, two secretarial positions are requested (\$16,000).

Additional funds are sought for travel, largely in connection with the animal acquisition program, and for services, supplies, and equipment associated with Director's Office operations. For the most part, these funds are required to meet rising costs (\$22,000).

2. Staffing the Hospital-Research Building (3 positions \$34,000)

The Hospital-Research Building was completed and occupied in January 1970. The Pathology Office was transferred to this building in September 1970. The plans for the coming year are to continue to improve the service to the Zoo and to undertake specific research projects by means of conventional pathologic techniques. The Zoo has the opportunity to offer outstanding research and training services. Space will be available for visiting scientists, undergraduate fellows, and trainees interested in the research potentialities of the pathology laboratory. The degree to which specific research can be accomplished will depend largely upon the availability of technical and clerical help. To expand this service, two positions, a secretary and a histopathology technician, are requested (\$16,000).

One police position is requested to enlarge the night shift for the protection of drugs and expensive medical equipment and for park security around the Hospital-Research complex, located in the wooded area of the Park (\$9,000).

Travel, supplies, and equipment, including books, are required to provide program support to the operations of the Hospital-Research Center (\$9,000).

3. Administrative Services (3 positions \$63,000)

As the number of personnel in the Zoo increases and programs expand, the workload in the supply section of the Administrative Service Division increases. For instance, the availability of funds for capital renovation and repairs to existing surroundings and buildings has increased the workload. An additional purchasing agent and a clerk typist are required (\$14,000).

One clerk typist position is needed for the protective service program to perform the administrative duties now accomplished by officers who should be on patrol duties. Forms that are required to be typed cover police activities, personnel manning, park safety, and requisitions for supplies and equipment (\$8,000).

During the summer of 1969, the first phase of conversion of the heating plant from coal to gas was accomplished. The complete conversion was accomplished in the summer of 1970. The cost for operating the Hospital-Research Building has exceeded estimates. Additional funds are required for utilities (\$30,000).

There are remote areas of the Park in which tradesmen, police, and professional staff must work. It is frequently important to communicate quickly with these people and telephones are not readily available. Funds are requested to replace and expand the Zoo's radio communication system on a rental basis (\$11,000).

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

NATIONAL ZOOLOGICAL PARK
Operations and Maintenance

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>100</u>	<u>30</u>	<u>130</u>
11 Personnel Compensation.....\$	870,000	\$ 185,000	\$ 1,055,000
12 Personnel Benefits.....	84,000	15,000	99,000
21 Travel & Transp. of Persons	0	1,000	1,000
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction			
25 Other Services	14,000	5,000	19,000
26 Supplies & Materials	122,000	49,000	171,000
31 Equipment	24,000	51,000	75,000
41 Grants			
TOTAL.....\$	<u>1,114,000</u>	<u>\$ 306,000</u>	<u>\$ 1,420,000</u>

Analysis of Total

Pay Increase	\$ 52,000	\$ 13,000	\$ 65,000
Program	\$1,062,000	\$293,000	\$1,355,000

Specification of Increase (Program):

Maintenance and Operations of the Physical Plant (30 positions, \$293,000)

General workload demands for maintenance and operations require staff and funding increases in several areas. For supervision and general operations of this department, an assistant buildings manager and a production control clerk and funds for work uniforms and safety supplies are needed (\$33,000). Delay in zoo reconstruction makes it necessary to prolong the life of existing facilities. Five crafts workers and maintenance supplies and equipment are needed (\$65,000). Tree and grounds maintenance over 156 acres, including newly developed areas, requires six additional grounds workers and replacement supplies (\$63,000). The installation of new technical control boilers and other heating and air-conditioning machinery requires six additional boiler plant operators for adequate maintenance of this expensive equipment (\$45,000). The requirement for personnel to operate auto equipment has increased beyond a workable schedule for pick-up and delivery services. Two additional auto equipment operator positions are requested. One junior mechanic position is requested to augment the present staff assigned to maintaining zoo vehicles (\$22,000).

As the visitors increase, the demand for laborer and custodial service also rises. Taking into consideration annual and sick leave and the 40-hour work-week requirement, the 17 available laborer positions and four custodial workers are not sufficient to maintain a seven-days-per-week schedule requirement. An increase of five laborer and three custodial positions and custodial supplies is requested (\$50,000). An increase is also requested in the equipment allotment to permit scheduled replacement of vehicles and scooters (\$15,000).

National Zoological Park
Operations and Maintenance Department

The Operations and Maintenance Department has responsibility for all plant maintenance and supporting services. These include:

- Operational services: automotive maintenance; operation of trucks and heavy equipment; trash collection; sweeping of streets and walks; snow removal; and janitorial services.
- Maintenance and construction: maintaining and repairing 15 major buildings and wide range of cages and other facilities. This unit also performs renovation and minor construction, and builds nest boxes, shipping crates, exhibits, and other needed items.
- Grounds: maintaining and improving the 156 acres of trees, lawns, shrubs, flower beds, and indoor plantings.
- Air-heating: maintaining all heating plants and air conditioning in the buildings throughout the Park.

An increase of \$293,000 is requested to provide thirty positions for workload increases in maintenance and operational services. An additional \$13,000 are requested for necessary pay increases.

Need for Increase

1. Operations and Maintenance Management (2 positions \$33,000)

A maintenance work order system to provide useful information on workbad and maintenance costs has been in operation for three years. This consists of a monthly summary report and a cumulative fiscal year report. Since there is no position available to perform the daily duties required to maintain these accounts and manpower statistics, the monthly report frequently falls 30 to 45 days behind reporting dates. This system provides manpower and material utilization reports and cost data necessary for developing systematic maintenance throughout the entire Zoo. It also provides vital information for budget requirements and projections. One production control clerk position is requested (\$7,000).

Funds are required to provide all wage-board employees in this department with work uniforms and safety supplies. There are 90 regular wage-board employees in need of instant recognition by other employees and the visiting public for security reasons. Also requested are travel funds for the O & M manager and for Zoo employees transporting animals (\$15,000).

One assistant building manager position is requested to assist the building and ground manager by performing routine estimating, inspections, and obtaining plans, bids, prices, etc., and to act in the absence of the manager (\$11,000).

2. Maintenance and Construction (5 positions \$65,000)

With the completion of the Great Flight Cage; Delecate and Hardy-Hoofed stock buildings, shelters, and areas; new roadways and parking lots; and the Hospital-Research building, the following workload has been added to the maintenance program since 1963:

--24 drains, 30 water outlets for hoses, 15 basins, 2 rest rooms, and 16 water troughs. The Hospital-Research building will have 27,000 feet of sanitation sewer, water, and vent pipes to maintain, 116 floor drains and sink waste, 8 rest rooms, 64 hot and cold water outlets, 3 disposals, 1 sterilizer, and 27 valves and controls.

--49,640 feet of fencing to be maintained.

--236 locks and 348 doors which require the repair of various type mechanisms.

--293,972 square feet of asphalt roadways and parking lots to be maintained.

The wear and deterioration of the old facilities from the action of time, elements, visitors, and animals creates a normal workload. New facilities, added to the preventive maintenance demands on the present maintenance staff, leaves many of the facilities in a state of disrepair and deterioration causing a backlog in the various trades. Only one additional electrician, one carpenter, and one steamfitter positions have been authorized for this program since 1963.

For instance, at present, there are one lead foreman, three pipefitters, and one junior pipefitter (including plumber conversions in the past 12 months) to maintain the pipes and equipment of the Zoo's heating, water, sewage, and drainage systems. These systems are located in and around 20 buildings in an area of approximately 100 acres. Due to the condition of 75 percent of these systems, emergency repairs seem to be the order of each day, creating a backlog of preventive maintenance. A backlog of 16,700 man-hours jeopardizes the safety and well being of the animals.

Two pipefitters, a carpenter, one asphalt worker, and one maintenance helper are requested with funds for building and maintenance supplies and equipment purchases on a planned replacement cycle (\$65,000).

3. Tree and Garden Maintenance (6 positions \$63,000)

There are approximately 12,000 trees in the Park. Using the International Shade Tree Evaluation Scale, the value of these trees is estimated to be \$6.5 million. There are five (including the supervisor) tree maintenance worker (climbers) positions available to prune and treat diseased trees, remove dead or hazardous trees, plant or replace trees, and feed and water trees located in public areas. There is only one grounds worker position available to assist in this work, which requires climbers to be used as ground workers. The tree section has a backlog of 24,000 man-hours of climbing work or 8-years of work with the present available positions. An addition of two grounds worker positions will increase the actual climbing hours per year and reduce this time to six years, permitting the tree section to start another cycle of preventive maintenance and insure the safety of visitors, employees, and animals (\$12,000).

Three additional grounds worker positions also are required to assist the Garden Section in maintaining the horticultural features in new areas created by the construction and improvement of the Zoo. The areas to be maintained are:

Hoofed Stock area.....	2.5 acres	Horticultural features to be pruned and sprayed.
Harvard Street Bridge area..	.5 acres	Lawn to be mowed, sodded, seeded, and fertilized.
Hospital-Research area.....	2.5 acres	Horticultural features and lawn to be maintained.

New areas and dry seasons have tripled the watering activity, adding 2,300 additional man-hours; an increase of 1,000 man-hours in pruning activities; and a minimum increase of 1,500 man-hours must be added to the weed spraying activity. Some flower beds will have to be eliminated in order to give proper maintenance to the remaining ones and to the turf and ornamental feeding (\$18,000).

One clerk-typist also is requested to perform the administrative duties of this division. At the present time, maintaining time cards, filing records, ordering supplies and equipment, typing reports and correspondence and maintaining a horticulture library consumes 75 percent of the chief of the division's time. Many of these duties fall days behind and correspondence goes unanswered because of lack of clerical personnel. A clerk would also allow the division chief to spend his time inspecting construction sites for damage to existing plants and trees; designing detailed landscape plans; estimating costs; and setting up work orders and training programs for the division (\$7,000).

Funds are sought for supplies and to replace the 40 foot skyworker. This piece of equipment is ten years old. A climber's life depends on the safety of this machine when operating the bucket 40-feet off the ground. The machine is checked by special mechanics of the District Highway Department every six months for efficiency and safety. Because of the lack of housing, the skyworker must be subjected to the elements, causing wear and deterioration. The new skyworker will reach 60 to 70 feet from the ground which will enable the climbers to eliminate a hazardous climb of 20 to 30 feet above the 40-foot bucket (\$26,000).

4. Air-heating (6 positions \$45,000)

The change from prior years of air-pollution and coal scoop engineering to a sophisticated anti-pollution and climate control system for the health and well-being of the animals involves equipment requiring constant surveillance and planned preventive maintenance. From simple operating boilers and equipment plus emergency maintenance, with preventive maintenance being performed during a few summer months, progress has been made to a system of weekly inspections with spot inspections when manpower is available. With emergency type maintenance a high factor, frequent and necessary inspections are sometimes omitted because of manpower shortages. A tight surveillance of operating conditions in buildings during all seasons is necessary to prevent over heating or extreme chilling that might cause the loss of valuable and/or irreplaceable animals. The workload is further increased by the addition of a boiler plant to operate the year around and the addition of large tonnage air conditioning for the summer months.

A comparison of manpower requirements of the present and proposed Boiler Plant operation is as follows:

	<u>Man-years Present</u>	<u>Man-years Proposed</u>
Supervisory.....	2.0	2.0
Main heating plant (three complete shifts)....	4.5	4.5
Roving watch, steam tunnel and buildings....		4.0
Hospital-Research Building (three shifts)....	4.5	4.5
Refrigeration and air conditioning mechanic..	1.0	2.0
Incinerator operator and trainee	1.0	2.0
Total	<u>13.0</u>	<u>19.0</u>

Due to the increased workload and the backlog of preventive maintenance, four boiler plant operators, one junior engineer, and a helper are requested to bring the manpower up to standards for the safety of the personnel and animal and maximum operating efficiency of the boiler plants and buildings (\$45,000).

5. Operational Services (11 positions \$87,000)

The motor pool is responsible for furnishing transportation and pickup and delivery service to all departments. It hauls ashes and debris to the Mount Vernon Boulevard Dump twice daily. Out of town trips (average one weekly) and trips to the three local airports (average four weekly) to pickup and deliver animals, require the services of an auto equipment operator. When these and other requests have first priority, the pickup and delivery services for the departments fall behind schedule. Two additional auto equipment operator positions are requested to aid in carrying out the work that is assigned to the motor pool (\$14,000).

At present there are one lead foreman, two auto mechanics, and one junior mechanic to maintain a fleet of 26 trucks, 3 station wagons, 4 jeep-type vehicles, 13 scooters, and 9 pieces of equipment. Some trucks are on the road seven days a week and others have been in service for ten years or more. One additional junior mechanic position is requested to augment the present staff assigned to maintaining all zoo vehicles (\$8,000).

An amount of \$11,000 is required to increase the vehicle replacement allotment. The cost of a truck or station wagon has increased 18 percent in the past two years. There are thirty vehicles in the Zoo fleet with an average age of 6 years. There are nine vehicles in the fleet that are ten years old or older. Replacement standards for trucks are 6 years or 50,000 miles for 1-ton or less; 7 years or 60,000 for 1 1/2 through 2 1/2 tons. Passenger cars may be replaced when they have been operated for 6 years or 60,000 miles whichever occurs first. The police vehicle must operate on a 24-hour, seven days a week basis and must remain mechanically safe for operators and passengers. This vehicle should be replaced every two to three years. This request will permit the replacement of 4 or 5 vehicles each year over the period of six years.

An amount of \$4,000 also is requested to replace three scooters used in police duties. Scooters have been invaluable in reducing the response time of patrolling officers to reach troubled or critical areas. Officers patrolling the parking areas in these vehicles appears to have a deterrent effect on the type of offenses generally committed (especially larcenies from autos).

The labor force is responsible for assisting mechanics, maintaining the fifteen major buildings, twelve public rest rooms, and sixteen employees' rest rooms in a clean, presentable, and sanitary condition, and removing trash left by visitors over the 156 acres of Park grounds. The walkways in the eight public buildings are scrubbed with detergents and disinfectant once a week and swept once a day. The assigned duties of the available four custodial workers are those of maintaining the public rest rooms in a clean and sanitary condition. Employees' rest rooms are cleaned only once a week. As the visitors increase, the demand for laborer and custodial services increases. Taking into consideration annual and sick leave and the 40-hour work-week requirement, the 17 available laborer positions and four custodial workers are not sufficient to maintain a seven-days-per-week schedule requirement. An increase of five laborer and three custodial positions and custodial supplies is requested to meet this schedule and to maintain efficiency in operations (\$50,000).



SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

NATIONAL ZOOLOGICAL PARK
Department of Living Vertebrates

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>77</u>	<u>5</u>	<u>82</u>
11 Personnel Compensation.....	\$ 720,000	\$ 45,000	\$ 765,000
12 Personnel Benefits.....	57,000	3,000	60,000
21 Travel & Transp. of Persons	0	2,000	2,000
22 Transportation of Things	2,000	0	2,000
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....			
25 Other Services			
26 Supplies & Materials	155,000	20,000	175,000
31 Equipment	28,000	11,000	39,000
41 Grants			
TOTAL.....	<u>\$962,000</u>	<u>\$81,000</u>	<u>\$ 1,043,000</u>

Analysis of Total

Pay Increase	\$ 49,000	\$ 9,000	\$ 58,000
Program	\$913,000	\$72,000	\$ 985,000

Specification of Increase (Program):

Improve Divisional Supervision and Assist in Research (5 positions, \$43,000)

With the expanded activities in research and conservation, it is apparent that a professional approach must be followed to apply the animal management techniques that are fast becoming available to the conservation-oriented zoological world. This will require the services of a trained biologist to supply the exotic animal management expertise, a secretary to assist the four zoologists, and three special keepers to accomplish the research and breeding efforts (\$43,000).

Acquisition of Animals and Increased Costs of Food and Sundry Supplies (\$29,000)

An increase in the animal acquisition fund (\$5,000) is needed to provide an adequate number of interesting and unusual specimens for a well-balanced and educational zoological collection. The present allotment for the acquisition of animals, which includes purchase prices and/or shipping charges, is \$25,000. An increase in the food allotment, sundry supplies, uniforms and equipment is requested to cover increased costs. Funds also are requested to provide for travel of five zoologists to attend annual meetings of their professional societies, visit other zoos, and collect native species of birds, mammals, and reptiles for exhibit.

National Zoological Park
Department of Living Vertebrates

The Department of Living Vertebrates is responsible for approximately 3,200 animals of over 1,100 species, representing one of the largest and most varied collections of exotic animals in existence. To support this collection, the Department conducts an animal care program involving feeding, cleaning of cages, and exhibition. Included in the animal care program are pest control efforts to eliminate insects and rodents and a commissary program for ordering, receiving, storing, preparing, and delivering animal food, as well as raising special food items. In addition to these major activities, the staff collaborates with the Animal Health Department, the Scientific Research Department, and the Pathology Office to improve the medical treatment of animals, collect medical data, evaluate medical programs, and develop, investigate, and support various research programs.

An increase of \$72,000 is requested to provide five positions to accomplish the research workload and to cover the rapidly rising costs of animals, animal food, sundry and uniform supplies, and equipment as well as to provide for travel of five professional staff members in this department to attend annual meetings of their professional societies. An additional increase of \$9,000 is sought for necessary pay increases.

Need for Increase--There are four zoologists who require secretarial assistance. The various headkeepers also are in need of clerical aid at various times. The services of other secretaries within the Park have been utilized when time permitted. This situation is often difficult and far from satisfactory for efficiency in over-all operations. One secretary position is requested (\$7,000).

One wildlife biologist position is requested to aid in divisional supervision of animal care. With the expanded activities in research and conservation, it is apparent that a professional approach must be followed to apply the animal management techniques that are fast becoming available to the conservation oriented zoological world. Trained biologists would supply the exotic animal management expertise not before available to this Zoo. In zoos, as in the cattle or poultry industry, there is a need for professionals trained in animal husbandry to apply scientific knowledge rather than tradition to such specialized areas as nutrition, propagation, and sanitation. The biologist would also serve important functions in keeper training, improved exhibition, and collection planning (\$12,000).

Three special keeper positions and funds for equipment are requested to assist the zoologists in research and breeding efforts. These consist of extensive incubation, hatching, and rearing programs and the collection of behavioral and natural history data on special animal groups. The efforts to breed rare and endangered species demand close supervision by a keeper specialist. The collection of data is accomplished through observations, instrumentation, weighing, measuring, and animal care. Due to the compelling duties for the routine care and protection of the animals by the animal keepers, there is no position available that can be assigned to this phase of the operations (\$24,000).

The animal acquisition program is aimed at providing an adequate number of interesting and unusual specimens for a well-balanced and educational zoological collection. The present allotment for the acquisition of animals, which includes purchase prices and/or shipping charges, is \$25,000. An increase of \$5,000 is requested. There has been no increase in these funds since 1965. Animal prices have risen rapidly in the past six years. In the

past, the Zoo has relied heavily on gifts and exchanges. It is rarely possible, however, to stipulate the species, ages, sex, and condition of gifts; and exchanges are dependent on what other zoos have in surplus. These two methods tend to yield an unbalanced collection. The Zoo's collection objectives can be fulfilled only by purchasing animals of selected species.

Additional funds are requested for the food allotment to meet steadily rising prices. Approximately \$138,000 are now available to purchase animal food. The Commissary makes every effort to obtain surplus food at reduced prices, but this is frequently of low quality. The replacement prices for sundry supplies and uniforms and equipment also have risen sharply. Funds are requested to cover the increased cost and usage of these items (\$23,000).

Funds also are needed to provide for travel of five zoologists to attend annual meetings of their professional societies, visit other zoos to become familiar with their operations and collections, and collect native species of birds, mammals, and reptiles for exhibit (\$1,000).

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

NATIONAL ZOOLOGICAL PARK
Scientific Research Department

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>6</u>	<u>1</u>	<u>7</u>
11 Personnel Compensation.....	\$ 73,000	\$ 21,000	\$ 94,000
12 Personnel Benefits.....	6,000	2,000	8,000
21 Travel & Transp. of Persons	0	1,000	1,000
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....			
25 Other Services			
26 Supplies & Materials	2,000	5,000	7,000
31 Equipment	3,000	5,000	8,000
41 Grants			
TOTAL.....	<u>\$ 84,000</u>	<u>\$ 34,000</u>	<u>\$ 118,000</u>

Analysis of Total

Pay Increase	\$ 5,000	\$ 3,000	\$ 8,000
Program	\$79,000	\$31,000	\$110,000

Specification of Increase (Program):

Improve Scientific Research Efforts and Care of Research Animals
(1 position, \$31,000)

The Hospital-Research Building was completed and occupied in January 1970. Request is for one reproduction physiologist position (\$17,000) to collect behavioral data, and treat the data in such a way that it will generate fruitful hypotheses for analyzing the physiological mechanisms underlying certain expressed behavior. Funds are requested to provide for three temporary employees (\$7,000) during the summer months to permit the regular employees to take leave. An increase in the supplies and equipment allotments is requested to cover increased costs (\$6,000). Funds also are requested to provide for travel of three scientists to attend annual meetings and seminars (\$1,000).

National Zoological Park
Scientific Research Department

The Scientific Research Department undertakes studies of animal behavior, reproduction, and nutrition. The Zoo collection is a major scientific resource. For this reason, facilities and assistance are often provided to scientists from federal agencies such as the National Institutes of Health as well as from universities. The Zoo's own scientific studies add to man's understanding of the living world. Investigations undertaken in the Zoo and in the field have yielded numerous scientific publications. The work of the Scientific Research Department results in improved care of animals in the collection, as reflected in their well-being and reproduction. This work is also of benefit to other zoos and animal collections. In addition, the Scientific Research Department is of assistance to other organizations, including foreign governments concerned with wildlife management and conservation. The Department provides training and research opportunities for graduate students.

An increase of \$31,000 is requested to provide one position to improve research efforts; provide for temporary employees; cover the increased costs of supplies and equipment; and to establish a travel allowance for three scientists. An additional \$3,000 are requested for necessary pay increases.

Need for Increase--The new Hospital-Research Building provides facilities for extensive research necessary for caring and rearing of animals in captivity. One reproduction physiologist position is requested to collect behavioral data, and treat the data in such a way that it will generate fruitful hypotheses for analyzing the physiological mechanisms underlying certain expressed behavior; to develop studies that are required to determine growth and the ontogenesis of behavior, especially with respect to sexual behavior; and to gain knowledge of hormonal treatments and their effects on animal behavior (\$17,000).

There are two animal keeper positions available to care for the animals under study seven-days-per-week. Funds are requested to provide for three temporary employees during the summer months to permit the regular employees to take leave. This is to assure that the best care is given to these animals (\$7,000).

Funds also are requested to provide for the increased cost and usage of research supplies and equipment and to establish a travel allowance for the three scientists to attend annual meetings and seminars (\$7,000).

National Zoological Park
Animal Health Department

The Animal Health Department is responsible for the maintenance of the health of the animal collection of 3,200 living specimens of 1,100 species. This requires: clinical treatment of illnesses and injuries; prophylactic procedures; using clinical pathological data to assist in diagnosis of diseases and formulation of effective treatment regimens; and collaboration in biomedical research directed toward a broader knowledge of disease processes in exotic animals and their treatment. The staff of the Animal Health Department consults and collaborates with investigators from governmental agencies and academic institutions in the solution of problems of mutual interest.

An increase of \$54,000 is requested to provide four positions to improve medical treatment and care for the hospitalized animals; to cover the increased costs of supplies; and to establish a travel allowance for three professional staff members. An additional \$1,000 are requested for necessary pay increases.

Need for Increase--In order that basic biomedical research devoted toward improvement of the care of collection animals, development of physiological norms, and more in-depth study of therapeutic regimens be broadened, three positions are requested: associate veterinarian, medical technologist, and a secretary (\$34,000).

There is one veterinarian position available to maintain an around the clock call schedule. An associate veterinarian will alleviate the necessity of one person being on duty 24-hours when there are emergencies. Other major problems encountered are a lack of time for study, literature search, or attendance at continuing education seminars. This is the area in which new advances in treatment regimens and medical techniques are disseminated and attendance is of inestimable value. The medical technologist will develop the physiological norms in all quarantined animals as well as studying the physiological changes in those animals that come into the Hospital as medical or surgical patients. There is also a necessity for extensive bacteriological culture examination of the necropsied animals. This will provide a broader knowledge of bacterial disease agents present in the National Zoological Park, and, through sensitivity testing, permit the more rapid establishment of prophylactic measures to protect the cagemates that have been exposed to the disease. Secretarial assistance is necessary to maintain the increased clerical workload on a current status as a direct result of changes being made in Hospital operations and medical record keeping.

The increase in animal holding space will permit the hospitalization of ill patients presently impossible in the existing quarters. By hospitalization and improved observation of these animals, it is reasonable to expect a higher percentage of cure. It will assure that proper medication at regular intervals will be administered and a much closer evaluation of the patients' progress will be made. Provision of adequate, centralized quarantine facilities will insure continuing observation of quarantined subjects and permit the use of laboratory studies not presently possible with the subjects scattered throughout the Zoo in substandard quarters and with sometimes very limited observation. This facility will also protect against the possibility of the introduction of diseases into the static animal collection. The institution of a nursery facility will centralize the handrearing of baby animals under stricter observation and supervision of nursery techniques. The present program of "farming out" baby animals to keepers, secretaries, and friends obviously must be stopped. With this centralized facility, particularly in the same physical location as the Scientific Research Department, a continuing study of behavioral traits of the

specimen during infancy, growth and growth-rate statistics will be provided. The one keeper position is not sufficient for a 7-day-per-week operation and care of hospitalized animals. An addition of one keeper position and supplies and equipment is requested (\$16,000).

An amount of \$2,000 is s required to meet the increased cost of medical supplies and \$2,000 to establish a travel allowance for the three professional staff members to attend annual veterinarian conferences and educational seminars.

HISTORY AND ART

The Smithsonian possesses an unequalled array of resources, both material and human, for the understanding and illumination of our country's history through its material culture, its technology, and its art. No other Institution has a greater and more exciting opportunity to demonstrate and celebrate what Americans--all Americans--have accomplished.

As the custodian of national collections comprising literally millions of historic objects and works of art, it is our responsibility to make sure that these collections are used as effectively as possible for the benefit of all. We must care for these collections, we must make them available to scholars both from our own staff and from the broader academic community, and we must use them intelligently and imaginatively to help tell the story of American civilization to our millions of visitors and, through publications and traveling exhibitions, to an even wider audience. It is also our responsibility to seek the continued growth of these national collections; as we are the beneficiaries of the foresight of past generations, so must we be the benefactors of future generations, passing on to them the fruits of our stewardship.

With one essential exception, the Joseph H. Hirshhorn Museum and Sculpture Garden, the budget requests in the area of history and art are modest, reflecting our determination to fulfill our obligations and to realize our opportunities as economically as possible. The increases requested for the History and Art activities amount to \$1,245,000, or 14 percent of the total Institutional requested increase.

Although many history and art bureaus of the Smithsonian have received no increases in operating funds during the past two or three years, and although inflation has caused many of them to suffer in effect a decrease in funds, we have sought insofar as possible, to meet our needs out of existing resources. To this end, we have undertaken to terminate some activities and to reduce others drastically--for example, the International Art Program, the Smithsonian Journal of History, and temporary exhibition programs in all our museums. We shall continue to scrutinize all our activities with a view to maintaining a strong sense of priorities. At the same time, with the enthusiastic cooperation of our museum and bureau directors, we have encouraged cooperative efforts among our history and art bureaus in the name of efficiency and economy; shared library and conservation facilities, for example, serve the National Collection of Fine Arts and the National Portrait Gallery better and more cheaply than would separate ones.

Despite these efforts, which will continue, certain real needs hamper the effective operation of many of our history and art bureaus and prevent us from deriving the full benefits from the investment that has been made in them. The requested increases that follow represent, in our judgment, the minimum amounts needed to partially correct the most pressing of these shortages.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

NATIONAL MUSEUM OF HISTORY AND TECHNOLOGY

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>158</u>	<u>-1</u>	<u>157</u>
11 Personnel Compensation.....	\$ 1,943,000	\$ 63,000	\$ 2,006,000
12 Personnel Benefits.....	154,000	5,000	159,000
21 Travel & Transp. of Persons	43,000	0	43,000
22 Transportation of Things			
23 Rent, Comm. & Utilities	4,000	10,000	14,000
24 Printing & Reproduction.....	3,000	5,000	8,000
25 Other Services	21,000	45,000	66,000
26 Supplies & Materials	10,000	22,000	32,000
31 Equipment	31,000	148,000	179,000
41 Grants			
TOTAL.....	<u>\$ 2,209,000</u>	<u>\$ 298,000</u>	<u>\$ 2,507,000</u>

Analysis of Total

Pay Increase	\$ 88,000	\$ 68,000	\$ 156,000
Program	\$2,121,000	\$230,000	\$2,351,000

Specification of Increase (Program):

Support for Planned Museum Programs (\$230,000)

The National Museum of History and Technology, a systematic general museum devoted to the historical and technological achievements of the Nation, now has attendance approaching 6,000,000 visitors a year. It has developed an explicit set of purposes and principles to guide its planning and its current activities. Specifically, these are:

- to widen, deepen, and enlarge the exhibits and the visitors' museum experience;
- to become a more important, more attractive, more lively, and more seminal center for scholarly study, interpretation, and reinterpretation of American civilization and the history of technology;
- to widen its reach to all ages and conditions, both in Washington and throughout the nation and the world;
- to make the Museum a place for emphasizing the positive, discovering the extent and the limits of our national achievements and the achievements of man; and
- to emphasize, dramatize, and interpret the relevance of past to present.

These purposes can be achieved with no immediate increase in personnel if certain urgent non-personnel shortages can be corrected. An increase of \$230,000 is requested for a wide range of essential supplies, services, and equipment needs.

NATIONAL MUSEUM OF HISTORY AND TECHNOLOGY

1970 Actual.....\$2,149,000
1971 Estimate.....\$2,209,000
1972 Estimate.....\$2,507,000

The National Museum of History and Technology, a systematic general museum devoted to the historical and technological achievements of the Nation, is the most successful and important institution of its kind in the United States. Since its opening in January 1964, it has been visited by more than 30,000,000 people. Attendance is approaching an annual rate of 6,000,000--the greatest in the world. Under its distinguished new director, Daniel J. Boorstin, the NMHT has developed an explicit set of purposes and principles to guide its planning and its current activities:

- I. To widen, deepen, and enlarge the exhibits and the visitors' museum experience.
 - A. Toward a more total and more vivid, a more personal, a more participatory and a more communal recapturing of man's experience.
 1. By including parts of man's experience until now neglected or ignored: food, shelter, and clothing; heating and cooling; modes of educating, self-educating, and informing.
 2. By employing new techniques and the most effective forms of older techniques: by making our exhibits more selective, our interpretation more widely intelligible, and drawing more freely on all techniques of photography, sound, and sensory stimulation to reinforce and vivify the impressions of objects; by directing visitors movement in parts of the museum (e.g., by corridors).
 - B. Toward a more total and more vivid and more personal and more communal recapturing of the kinds of men and women who have made America, and their relation to all men.
 1. By explicit demonstration of the origins, original experiences, ways of arriving and experiences after arrival, of the diverse strains of the American people.
 2. By explicit demonstration of the impact of American civilization on the world, the backwash of American peoples to their places of origin.
- II. To become a more important, more attractive, more lively, and more seminal center for scholarly study, interpretation, and reinterpretation of American civilization and the history of technology.
 - A. Toward attracting visiting scholars, immersing them in the concerns of the museum and drawing on their knowledge, imagination, and ideas for museum activities.
 1. By attracting the ablest and most imaginative, established scholars, and the most promising younger scholars: as consultants, part-time or visiting curators, or advisers on particular exhibits and projects; as research scholars: offering them improved and attractive facilities in library, research collections, offices, and secretarial assistance.
 2. By numerous, current, and monumental contributions to the scholarship of American civilization: as in the Smithsonian Encyclopaedia of American Life, pamphlets, and books with the widest reach.
- III. To widen our reach to all ages and conditions both in Washington and throughout the nation and the world.

- A. Toward a more effective, more widespread, more inclusive, and more continuous reach to press, radio, television: a stream of stories of the events in the Museum; planning of more and more newsworthy and widely-interesting interpretations of our activities.
 - B. Toward reaching all age groups and interest groups: preparation of interesting and understandable exhibits and programs for younger children, for visitors from abroad, and for the undereducated at home; interpretations of American history and technology more intelligible to nonexpert adults (special dramatic and other programs and a special area for younger children).
 - C. Toward a more effective connecting with holiday and festive occasions: celebration of national anniversaries, the birthdays of history-making Americans, and anniversaries in the history of the American standard of living and epochs in science and technology.
 - D. Toward a more effective tying of all events occurring in our museum to the large and explicit purposes of the National Museum of History and Technology.
 - E. Toward a more effective orientation and guiding of all visitors: by brochures, publications, orientation center at entrances, motion pictures, live guide services, informing of guards, etc.
- IV. To make the National Museum of History and Technology a place for emphasizing the positive, discovering the extent (as well as the limits) of our national achievements, and the achievements of man.
- A. To emphasize the greatness of individual man: by interpreting, dramatizing, and explaining the careers of history-making Americans: the discovery and rediscovery of American heroes.
 - B. To explore the epochs of great achievement, and the circumstances which helped make them possible: by exhibits on creative periods of American History and of the history of technology, and the social conditions which helped make these possible, e.g., in the exhibits, "What Makes a Creative Moment?"
 - C. To explore and remind Americans of their institutions--how they came into being and how they have changed: by a fuller exhibit of our political and social institutions, and institutions which have helped make the American standard of living (e.g., the businessman, newspapers, advertising, labor unions, public schools, universities, museums, etc.).
 - D. To help give meaning and content to national holidays (e.g., Thanksgiving, Fourth of July, Washington's Birthday, Memorial Day, etc.).
- V. To emphasize and dramatize and interpret the relevance of past to present.
- A. By current and changing programs of orientation.
 - B. By new programs of publication in print, on radio, television, etc.
 - C. By conferences and new exhibits and new kinds of museum experiences.

The director and staff of the Museum believe that these purposes can be achieved with no immediate increase in personnel, if certain urgent non-personnel shortages can be corrected. At present, the Museum has available only about five percent (some \$100,000) of its appropriation for support activities. An additional \$298,000 are requested for the following purposes:

Shortages by Category of Expense

11 & 12

Mandatory increases in pay.....\$68,000



Rent high-speed photocopying unit to replace outmoded machine \$10,000

Purchase photographs for research. Print exhibit catalogs 5,000

Contract for lectures by visiting scholars 5,000
 Training for existing professional and nonprofessional staff to
 increase competence and efficiency 3,000
 Purchase service contracts for maintenance of typewriters and
 dictating machines 2,000
 Contract with expert consultants for long-range planning of major
 programs and exhibits 15,000
 Contract with architectural restoration experts for reconstruction
 and restoration of period rooms now owned, but in storage 20,000

Purchase office supplies 5,000
 Purchase photographic supplies--film, flashbulbs, and chemicals 2,000
 Purchase exhibits maintenance supplies 15,000

Purchase office furniture and furnishings 10,000
 Purchase urgently needed storage cases for visible storage of
 collections in maximum security areas 20,000
 Purchase storage units for offices 4,000
 Replace worn-out typewriters (10 at \$700 each)=\$7,000
 Purchase 10 two-machine dictating units to increase
 efficiency in understaffed offices, totalling \$10,000 17,000
 Replace worn out photographic equipment and purchase additional
 laboratory cameras and apparatus 5,000
 Purchase specimens and objects for collections necessary to
 complete already constructed halls and period rooms which
 cannot be opened for lack of specimens 20,000
 Purchase specimens for completion of certain collections now
 on display and for research 25,000
 Purchase books and other reference materials for curators
 and technical manuals for specialists and technicians 15,000
 Purchase exhibits maintenance tools 5,000
 Purchase laboratory equipment 7,000
 Remodel certain offices and laboratories to alleviate crowded
 and unacceptable working conditions 20,000

Total \$298,000

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

NATIONAL COLLECTION OF FINE ARTS

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>70</u>	<u>2</u>	<u>72</u>
11 Personnel Compensation.....	\$ 643,000	\$ 51,000	\$ 694,000
12 Personnel Benefits.....	50,000	5,000	55,000
21 Travel & Transp. of Persons	31,000	0	31,000
22 Transportation of Things	30,000	0	30,000
23 Rent, Comm. & Utilities	14,000	0	14,000
24 Printing & Reproduction.....	1,000	0	1,000
25 Other Services	146,000	6,000	152,000
26 Supplies & Materials	25,000	7,000	32,000
31 Equipment	189,000	24,000	213,000
41 Grants	8,000	15,000	23,000
TOTAL.....	\$ <u>1,137,000</u>	\$ <u>108,000</u>	\$ <u>1,245,000</u>

Analysis of Total

Pay Increase	\$ 30,000	\$ 46,000	\$ 68,000
Program	\$1,107,000	\$ 62,000	\$1,177,000

Specification of Increase (Program):

Research, Exhibit, and Collections Management Support (2 positions, \$62,000)

In current and future years, the National Collection of Fine Arts expects to achieve most of its goals in research and public education in the field of American art by the judicious use of its professional staff talents and by redirecting the current level of operating funds. If this effort is to be successful, however, certain basic functions must be strengthened in order to provide a strong foundation for public service. For the budget year, these requirements fall into four areas. An amount of \$15,000 is required to fund additional research scholar grants in the study and interpretation of American art. A small increase in staff (a museum aid and a museum technician) and funds for services, supplies and equipment are needed to open and continue the new activities of the Renwick Gallery (\$25,000). In addition, the NCFA must build its funds (now about \$38,000) for the purchase of works of art in the face of rising costs and prospective donors increasing reluctance to donate. Fifteen thousand dollars additional are requested. And, lastly, \$7,000 are needed to reorganize the Museum's collections to protect them and make them more accessible to scholars and the public.

NATIONAL COLLECTION OF FINE ARTS

1970 Actual.....\$1,015,000
1971 Estimate.....\$1,137,000
1972 Estimate.....\$1,245,000

The National Collection of Fine Arts is the custodian of an ever increasing national heritage of valuable acquisitions and deposits of American Art both of the past and the present. Some 13,000 paintings, sculptures, and decorative objects are included in its exhibits and reference collections. To meet responsibilities assigned by law (20 U.S.C. 76c), the museum provide a repository for Government art; carries on an active program of conservation and conservation research; lends art to the White House and cabinet offices; promotes the public appreciation of art through publications and by permanent and special exhibits in its gallery, and by sponsoring traveling exhibits within the United States and abroad through the Smithsonian Institution Traveling Exhibition Service which circulates exhibitions to small and large institutions throughout the country.

The museum's expanding education program is being developed in close association with school curricula to provide material and study programs both in Washington and throughout the country. In addition, with its varied collections, library, photographs, and archives, the NCFA provides a research center for students and scholars devoted to the study of American art. The recent addition by the Smithsonian of the Archives of American Art, a rich repository of source information for research purposes, greatly enhances its overall capabilities in this area. The NCFA is responsible for the developing activities of the Renwick Gallery to be devoted to American arts and crafts design and shares photographic and conservation laboratories and library facilities with the National Portrait Gallery.

The requested program increase of \$62,000 will be directed at strengthening educational, scholarly, and curatorial support activities and preparing for the opening of the Renwick Gallery. An additional \$46,000 are requested for necessary pay for existing staff.

Need for Increase--The objective of the National Collection of Fine Arts' education program is to discover the way in which schools and museums can best work together to make real to children and adolescents the creative freedom and expressive satisfaction which comes from the serious study of works of art. The gallery's activities in this regard will be exportable. A series of traveling exhibitions that can be done inexpensively will be presented, and classroom materials will be made available throughout the country. Attention is being paid to practical exhibiting procedures (such as the Children's Gallery and new "Discover" gallery in NCFA) and school materials to be used in conjunction with the changing needs of area and national art curricula. In 1970, it is estimated that NCFA was able to accommodate about \$14,000 of this activity within its appropriation. In current and future years, the museum administration expects to achieve most of the new goals in education and research by the judicious use of NCFA professional staff talents and by redirecting the current level of operating funds. If success is to be realized, however, the collections and curatorial support functions, i. e., the basic housekeeping operations of the gallery which are currently underfunded, need reinforcement.

An amount of \$62,000 in new funds is needed for the following purposes: to supplement research scholar grants \$15,000; for two positions in the Renwick Gallery \$10,000; \$15,000, toward increased Renwick operations costs

related to the opening of the museum to the public; a \$15,000 increase in NCFA funds for purchases of art; and \$7,000 for the reorganization of the museum's archives and collection, making them available for research activities.

To provide for the continuation of the program of research scholars on a significant scale, \$15,000 should be directed toward the research scholars program in American art, for both graduate and post-doctoral scholars to encourage sound scholarship in this much neglected field. This will provide opportunities for scholars throughout the country to work on the rich collection of materials in Washington and allow the National Collection of Fine Arts to serve as a center for the study and reinterpretation of American art. Closely allied to the exhibition and publication programs, this activity has a significant impact on both the scholarly community and the general public.

The opening of the Renwick Gallery is to take place in fall 1971, and the development of a permanent museum staff to accommodate the new activities of this Gallery is of high priority. Since both the semi-permanent exhibit galleries and the large public opening will then be inaugurated, a museum technician and a museum aid along with materials and equipment needed in advance of the opening are requested (\$25,000). About \$65,000 are available for Renwick development in the NCFA appropriation for fiscal year 1971.

Within NCFA itself, the acquisition of works of art to supply some of the embarrassing gaps in the museum's collection has become increasingly difficult owing to rising prices and a growing reluctance on the part of donors to present significant works of art. If the collection is to be other than simply a fortuitous conglomerate, the museum's acquisition program must be made more active and selective. A \$15,000 addition to the present level of acquisition funds would be a modest start in this direction. Only about \$38,000 are available for art acquisitions in fiscal year 1971.

Seven thousand dollars is needed to facilitate the systematic management of the National Collection of Fine Art's extensive holdings, inherited from many sources over the past years. The rehabilitation of many important works, and the proper organization of the Collection's archives must move forward quickly if the Collection is to be properly safeguarded and available to scholars and the public.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

NATIONAL PORTRAIT GALLERY

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>37</u>	<u>1</u>	<u>38</u>
11 Personnel Compensation.....	\$ 403,000	\$ 54,000	\$ 457,000
12 Personnel Benefits.....	32,000	3,000	35,000
21 Travel & Transp. of Persons	15,000	1,000	16,000
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....	4,000	3,000	7,000
25 Other Services	177,000	7,000	184,000
26 Supplies & Materials	25,000	1,000	26,000
31 Equipment	175,000	2,000	177,000
41 Grants			
TOTAL.....	<u>\$ 831,000</u>	<u>\$ 71,000</u>	<u>\$ 902,000</u>

Analysis of Total

Pay Increase	\$ 20,000	\$21,000	\$ 41,000
Program	\$811,000	\$50,000	\$861,000

Specification of Increase (Program):

Public Education (1 position, \$50,000)

The National Portrait Gallery is a unique national museum of American history responsible for collecting, exhibiting, and studying portraiture of men and women who have contributed significantly to the formation and development of the United States. It has a responsibility to use its collections of paintings, sculptures, and other resources for public education. To do this, two areas of the Gallery's basic operations need strengthening in fiscal year 1972. The History Department has had a long existing need for a chief historian to take charge of biographical and other research on the collections to assure impeccable historical accuracy in exhibits labels and related materials for the public. This will cost \$25,000 including associated reference materials. Second, the Education Department needs \$12,000 to fund part-time temporary personnel to conduct teaching tours of the exhibits and to prepare teaching materials. Some 300 children each month receive tours, but the program is growing. An additional amount of \$13,000 is requested to prepare three special teaching exhibits of special interest to school groups and to prepare related printed materials for classroom use.

NATIONAL PORTRAIT GALLERY

1970 Actual	\$768,000
1971 Estimate	\$831,000
1972 Estimate	\$902,000

The National Portrait Gallery is a unique national museum of American history responsible for collecting, exhibiting, and studying portraiture in painting and sculpture of the men and women who have contributed significantly to the formation and development of the United States. Open to the public for only two years (since October 1968), the Gallery is still developing its staff and programs, particularly in the History and Education Departments, to meet public demands for its services.

The Gallery's current activities can be grouped into four major categories: (1) the care and expansion of the collection; (2) public education through programs with schools and through exhibition of the permanent collection and special loan exhibitions illustrating particular subject areas of American history and portraiture; (3) the research, publication, and national distribution of catalogues of these exhibitions, as well as other studies, both scholarly and popular in nature, related to the subject of American historical portraiture; and (4) the compilation of a definitive Catalogue of American Portraits to be a comprehensive data bank and national information service on American history and biography comprised of entries on all portraits of historically significant Americans.

An increase of \$50,000 in program funds is needed to support the activities of the History and Education Departments. An additional \$21,000 are requested for necessary pay for current staff.

Need for Increase

1. History Department (1 position, \$25,000)

The History Department requires a chief historian to be hired early in fiscal year 1972, culminating a two-year search for a prominent historian qualified in American history and art history (\$19,000). Basic operating support funds are needed for the chief historian's office to provide for travel, material services for office operations and personnel services by specialists in various aspects of American history and the public use of history collections, and for supplies, equipment, reference books, and materials for this new department (\$6,000). Total funding requested for this activity is \$25,000.

It is essential that a history museum have as its core a well researched collection. Initial activities of the chief historian will, therefore, involve upgrading and expanding the biographical research files on the portraits so that the historic contents of materials and exhibits for the public based on these individuals and their relations to historic events are of impeccable accuracy. At this point, only 1/10 of the Gallery's holdings of 500 portraits is thoroughly researched, and the one staff member assigned to biographical research pending arrival of the chief historian cannot keep current with new acquisitions, let alone cope with the bulk of the permanent collection.

Other major activities will be to study the permanent collection in terms of historical interpretation in its display arrangement, its labeling, and the content of printed materials distributed in the galleries, and to evaluate continually the historic content of future exhibitions being planned and researched by other members of the staff.

The History Department's efforts in both of these areas will immediately benefit the activities of the other major program to be strengthened in fiscal year 1972, the Education Department. This department is in more immediate contact with the public than any other, and it is upon its activities that the Gallery's educational services to schools, organized public groups, and individual visitors of all ages depend.

2. Education Department (\$25,000)

Most of the \$25,000 required to support a broad educational program beginning in fiscal year 1972 will provide part-time, temporary personnel to conduct teaching tours of the exhibits, to contact schools and other interested organizations, and to help research and write teaching materials based on the visual and historical content of special teaching exhibitions.

An average of 300 area school children each month are now receiving tours often tailored to their classroom needs. Many inner city teachers are discovering for the first time how the educational programs of this Gallery can make the study of American history more meaningful to their students. This use is expected to increase considerably next year, and the Gallery must provide a teaching staff to meet those demands.

The number of school and other public groups the Gallery can serve through tours is directly proportional to the numbers of trained volunteers and part-time paid teaching staff available to supplement the small permanent administrative and research staff of the education department (curator, secretary, and temporary researcher). These non-permanent staff visit schools to meet classes and discuss prospective visits with teachers, provide teaching materials based on the exhibits, conduct tours in the Museum tailored to the teacher's needs, and provide any desirable follow-up contact with the teacher and the class.

The core of this part-time teaching staff--comprised of persons with teaching experience, and graduate and undergraduate students--must be paid to assure that they will reliably meet the rigorous study requirements and demanding schedules of the educational program on a regular basis. Based on a projection of this year's experience using only available volunteers, the Gallery needs funds for the equivalent of two man-years of work (\$12,000). This will guarantee 80 hours of trained teaching staff each week. These paid staff will work with and be supplemented by approximately two dozen volunteers who give a few hours each week to the Gallery as their time allows.

In addition to educational activities based on portraits in the permanent collection and on major loan shows arranged twice yearly, one-room teaching exhibitions are produced by the Museum to focus in depth on one individual or topic of particular interest to school groups. These exhibits contain portraits, audio-visual materials, personal objects, and other historical information especially designed and labeled in a compact gallery area to provide an environment offering teachers or Gallery staff several possible directions for leading discussions and stimulating student learning. To provide two of these exhibits during the school year, at least one of which will study persons involved in the history of the District of Columbia, and another during this summer, funding of \$6,000 is requested.

Based on research and visual information gathered for the exhibits, the Gallery plans to produce classroom materials containing much more visual information than is normally found in available literature on the subjects. The writing and content will be aimed at the various student reading and comprehension levels. Teachers can use these materials to prepare students for the visit, to reinforce the visit afterward, and as a permanent resource after the exhibit is disassembled. For coordinating the curriculum research and writing of these

brochures and pamphlets for the teaching exhibits, the Gallery needs \$4,000 for temporary personnel to help the regular staff. For printing and reproducing these teaching materials to supplement the exhibit in the Gallery and to extend its use in the classroom \$3,000 are required.

Fiscal Year 1971 Activities of the National Portrait Gallery

Within the major program categories identified at the beginning of this justification, there are a number of recent developments and accomplishments. The NPG is expanding and upgrading its small permanent collection through acquisitions from commercial galleries and private individuals, as well as by gifts. In the past two years 106 portraits were added at a total cost \$391,640. The curatorial staff is preparing catalogs and planning exhibitions to be held this spring (portraits by American Revolutionary War period painter Henry Benbridge) and fall (portraits illustrating the history of the performing arts in America to coincide with the opening of the Kennedy Center). The Gallery's Fall 1970 show presented the life portraits of John Quincy Adams together with personal objects related to his life. Portraits for these shows are located and borrowed by the Gallery from museums and individuals in this country and abroad, a process often requiring two or more years advance research and planning by the Gallery staff.

Where no formal education program existed one year ago, the Gallery is training two dozen volunteer docents to conduct educational tours. Contacts are being made with metropolitan area schools and with organizations serving schools and teachers locally and nationally. To the extent limited resources can be temporarily borrowed from other programs, the Gallery has funded the research and production of experimental aids and one-room exhibits designed for use by tour leaders and teachers.

The Catalogue of American Portraits has standardized its computer entry forms and processes in cooperation with the Smithsonian's Information Systems Division and is entering information regularly obtained from correspondence and staff visits to nearby collections such as Mt. Vernon. The CAP handles continuing requests for portrait information from both scholars and the general public. Forty thousand portrait prints in the collection are being sorted and inventoried. Finally, 18,000 partial portrait entries gathered by researchers contracted between 1964 and 1967 are being definitively researched and processed into the data bank. In addition, the CAP is forming a roster of possible field researchers in various locales and gathering information on the logistics of collecting widely scattered portrait data.

Research is being performed on subjects related to American portraiture by two members of the staff. Two contract scholars are researching an exhibition catalog and exhibit on portraits of the American Negro to be held in spring 1972, and a separate publication on the same subject to be distributed nationally. The assembled papers and archival materials will remain with the research resources of the NPG.

The exhibits staff has continued to upgrade the appearance of the galleries and to provide for the display of the growing collection. A suite of first floor galleries was prepared for the John Quincy Adams exhibition designed as a versatile exhibit area which will be the location of all major temporary loan exhibitions in the future. Other projects are the formation of a new acquisition gallery area, the improvement of graphics to direct and inform visitors, the installation of a first-floor lounge area, and a redesign of the vestibule and foyer to be a more welcoming and informative entrance to the Gallery, including an orientation exhibit and film about the history of portraiture and how to look at portraits in the Gallery. The production shop and silk screen facilities have been improved to provide in-house capabilities for constructing cases, pedestals, posters, labels to reduce some of the costs of exhibition production and a reliance on contracted exhibit production services.

Summary and Future Goals

The additional \$50,000 requested here will enable the Gallery to take the next logical step in fulfilling the goals set forth by Congress when establishing the Gallery in 1962.

Prior to fiscal year 1971, the primary goal was establishment and management of the collection. With stress on developing an exhibits staff during the past year and plans for the History and Education Departments next year, the Gallery is focusing now on relating and exhibiting the collections to the public. It is in the public education category that the new program funds will enable expansion.

Continued basic staffing and program support in the coming years is necessary for the National Portrait Gallery to reach maturity as a fully operative national history museum and reference center. By the mid-1970's, when interest in American history will be heightened by activities commemorating the Bicentennial, it should be prepared to serve the public broadly through relevant exhibitions, scholarly and popular materials and programs, and through dissemination of information on historical portraiture from the computerized Catalogue of American Portraits.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

JOSEPH H. HIRSHHORN MUSEUM AND SCULPTURE GARDEN

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>18</u>	<u>3</u>	<u>21</u>
11 Personnel Compensation.....	\$ 174,000	\$ 72,000	\$ 246,000
12 Personnel Benefits.....	11,000	6,000	17,000
21 Travel & Transp. of Persons	6,000	3,000	9,000
22 Transportation of Things	3,000	0	3,000
23 Rent, Comm. & Utilities	40,000	5,000	45,000
24 Printing & Reproduction.....	2,000	2,000	4,000
25 Other Services	162,000	97,000	259,000
26 Supplies & Materials	9,000	16,000	25,000
31 Equipment	9,000	400,000	409,000
41 Grants			
TOTAL.....	<u>\$ 416,000</u>	<u>\$ 601,000</u>	<u>\$ 1,017,000</u>

Analysis of Total

Pay Increase	\$ 8,000	\$ 14,000	\$ 22,000
Program	\$408,000	\$587,000	\$ 995,000

Specification of Increase (Program):Meeting Target Date for Building Opening (3 positions, \$587,000)

The operating staff of the Joseph H. Hirshhorn Museum and Sculpture Garden will continue to be expanded. Three additional members are being sought in the budget year, a registrar, administrative assistant, and clerk typist (\$23,000) plus additional funds in other objects (\$33,000) and funds to annualize part-time positions authorized in 1971 (\$41,000). These funds will be added to the current budget and form the nucleus of the continuing budget for the Museum.

Additional funds (\$50,000) are requested to continue with the program of conservation and framing of the collection for its initial opening in the new gallery.

Funds for the design and production of storage screens (\$400,000) are being requested. Since this is a sizeable job it will be considerably cheaper to let the bid for the entire job at one time instead of doing the work in increments. These screens need to be placed on the top floor of the museum as soon as possible in order for the physical move of the collection to Washington to take place.

Funds are needed for the equipment necessary to set up three work rooms. (\$40,000). The carpentry, frame and paint shops have been chosen to be equipped first because they seem the most essential to the immediate operations of the building as construction work is completed. These shops will be useful as the collection is moved and uncrated and hung in storage. Immediate attention to small repairs will save wear and tear of having to repack and reship the works that might be in need of modest work.

JOSEPH H. HIRSHHORN MUSEUM AND SCULPTURE GARDEN

1970 Appropriation.....\$ 308,000
1971 Estimate.....\$ 416,000
1972 Estimate.....\$1,017,000

The Hirshhorn Museum, now under construction on the Mall, will house the magnificent gift to the nation of more than 7,000 paintings and sculptures. The Act of November 7, 1966, authorized construction of the Museum and designated the Mall site. Building construction began in March, 1970, and the estimated completion is October, 1972. All phases of work are presently geared to prepare for the opening of the Museum and to place it in operation.

An increase of \$587,000 for fiscal year 1972 will be used for acquiring equipment and furnishings to facilitate an early transfer of the collection to Washington as portions of the building become ready for outfitting and occupancy and for expanding the basic and continuing operations. The former item for equipment and furnishings consists of one-time, non-recurring costs, which are phased over two years. The attached table provides a detailed flow of projected operations for fiscal years 1972, 1973, and 1974, as related to the expected growth prior to and immediately following an anticipated public opening six to nine months following the completion of the building. An additional \$14,000 is sought for necessary pay purposes.

Need for Increase--In order to bring this major new Museum into existence, a dramatic acceleration in operating program activity must take place during the two and one-half year building construction period. This will require a very substantial increase in program funds over this period in order to meet the projected public opening date. Major additional funding requirements are in two categories: ongoing preparation of the collection, and the acquisition of furnishings and special equipment for the building.

Approximately twelve hundred choice paintings and pieces of sculpture are being selected from the more than 7,000 items in the collection for exhibit when the Museum opens. These paintings and pieces of sculpture must be examined, photographed, mounted, cleaned, and in some cases restored prior to exhibition. The total cost of this effort in fiscal year 1972, is estimated at \$200,000 for such contractual services.

Of these 1,200 items, 600 are paintings and 600 are sculptures. Based on a survey of the restoration and framing requirements of these items the following funding needs have been projected which total \$565,000. Some objects are included in two categories.

- 100 large paintings (5 to 15 feet) will need restoration at an average cost of \$1,000 (\$100,000) and 50 will require work at \$300 each (\$15,000).
- 350 small paintings will require restoration at prices ranging from \$250 to \$500 (\$150,000).
- 500 paintings must be framed at prices averaging \$200 for a total cost cost of \$100,000.
- 400 sculpture pieces, including about 150 which are classed as monumental, will require restoration at prices averaging \$500. Estimated total cost of the job is \$200,000.

Approximately 350 paintings have been restored, conserved, and framed during fiscal years 1969 and 1970, and are now completed for initial exhibition display. These include items that required both conservation and framing.

In fiscal year 1971 it is estimated that an additional 300 items will be completed, so that by the end of the fiscal year about 50 percent of the work for the opening will be completed.

The additional funds requested for conservation and framing in fiscal year 1972 (\$50,000) will allow for completion of nearly 90 percent of the total number of items planned for use in the opening exhibition. Fiscal year 1973 will be devoted to completing the remainder of the initial showing.

An increase in technical and support staff is required to prepare for the Museum's opening and subsequent exhibition and research programs. This staff must: negotiate with conservators and other contractors, and follow up on work in progress; conduct research and documentation for the opening exhibition as well as continue with the cataloging of the entire collection; and continue the Museum's present public services such as loans, photographic requests, and research queries. Three additional staff members are requested: registrar, administrative assistant, and clerk-typist (\$23,000), plus funds to annualize new positions authorized only part year in fiscal year 1971 (\$41,000).

An additional \$33,000 are requested for other contractual service costs related to the collections, the rental of working space and services (moving items in and out of storage for inspection, conservation, framing, etc), photography to document the collections for exhibits planning and research purposes. Professional visits to art museums and galleries for research will be necessary as well as other field trips.

Non-recurring Costs

Construction costs of \$16,000,000 (\$15,000,000 appropriated by Congress and a \$1,000,000 gift by Mr. Hirshhorn) will provide the Institution with the basic Museum building, including necessary utility equipment and connections. This amount does not permit the Museum to be completed to the point necessary for public opening or for conducting basic educational functions. It does not prepare the galleries or public areas, or furnish the administrative office space. To insure an opening to the public as soon as possible after completion of construction, it is essential that procurement and installation of furniture, furnishings, moveable equipment, and other items be provided as soon as possible. Approximately \$1,466,000 of furnishings and equipment not included in the original construction contracts (for furnishings and equipment) and necessary to prepare and make effective use of the laboratory, gallery and administrative space, have been identified as needed over the next two years. Funding for these items is being requested over two years, \$440,000 in fiscal year 1972, and \$1,026,000 in fiscal year 1973. Operating costs and non-recurring costs are identified in the following table.

<u>Operating Costs</u>	<u>FY 1971</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
Positions	18	21	45	60
Staff Costs (Including benefits)	\$185,000	\$263,000	\$494,000	\$688,000
Conservation and restoration	150,000	200,000	100,000	40,000
Supplies & Materials & Equipment	18,000	40,000	32,000	15,000
Other (Exhibits, planning, travel, rent, etc.)	63,000	74,000	193,000	135,000
Subtotal, regular operations	\$416,000	\$577,000	\$819,000	\$878,000

Non-recurring costs

Carpentry, frame, paint shops	40,000			
Storage screens	400,000			
Coatroom furnishings & area lights			8,000	
Gallery furnishings			210,000	
Lamps and partitions			32,000	
Fourth floor furnishings			205,000	
Photography lab			27,000	
Library shelving			50,000	
Registrars office and staff lunchroom			19,000	
Stone pedestals			95,000	
Security systems			50,000	
Exterior lighting			50,000	
Examination lab			38,000	
Conservation lab			65,000	
Auditorium furnishings			67,000	
Tour guides			60,000	
Sales room			50,000	
Subtotal, non-recurring costs		\$440,000	\$1,026,000	
TOTAL	\$416,000	\$1,017,000	\$1,845,000	\$878,000

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

FREER GALLERY OF ART

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>7</u>	<u>1</u>	<u>8</u>
11 Personnel Compensation.....	\$ 49,000	\$ 8,000	\$ 57,000
12 Personnel Benefits.....	4,000	1,000	5,000
21 Travel & Transp. of Persons			
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....			
25 Other Services			
26 Supplies & Materials	3,000	15,000	18,000
31 Equipment			
41 Grants			
TOTAL.....	<u>\$ 56,000</u>	<u>\$ 24,000</u>	<u>\$ 80,000</u>

Analysis of Total

Pay Increase	\$ 2,000	\$ 3,000	\$ 5,000
Program	\$54,000	\$21,000	\$75,000

Specification of Increase (Program):

Support of Research and Care of the Collections (1 position, \$21,000)

Freer endowment funds provide for the purchase of objects and for the development and study of the collections. Federal funds, in accordance with the Deed of Gift, are to be used for general support purposes. Funds are requested for a clerical position to assist research in Near Eastern Art (\$6,000) and for the purchase of storage equipment and related supplies (\$15,000).

FREER GALLERY OF ART

1970 Actual.....	\$45,000	<u>1/</u>
1971 Estimate.....	\$56,000	<u>1/</u>
1972 Estimate.....	\$80,000	<u>1/</u>

The Freer Gallery of Art houses one of the world's most distinguished collections of Oriental Art of over 10,000 objects. Including works of art from China, Japan, Korea, India, and the Near East, the collection covers paintings, sculptures, and other objects in stone, wood, lacquer, jade, pottery, porcelain, bronze, gold, and silver. Items not currently on exhibition and the library of 40,000 volumes are available and used extensively by the Gallery's staff and numerous visiting scholars and students from throughout the world. The two-fold program envisaged by the founder involves the continuing search for works of the highest quality that may be added to the collections and the continuing study of these works of art as keys to understanding the civilizations that produced them.

An appropriation increase of \$21,000 is requested to provide basic support to research, collections maintenance, and exhibition programs of the Gallery. Funds in the amount of \$3,000 are also requested for necessary pay for staff.

Need for Increase--Endowment funds provide for purchase of objects and for the development and study of the Freer collections. In accordance with the acceptance of the Deed of Gift, federal funds are to be provided and used for the upkeep, repair, guarding, heat, light, cleaning of building; repair and cleaning of collection; and recording, labeling, and moving of specimens and related services. Current federal employees are support staff. There has been a great increase in use made of Freer resources by the general public, scholars, and students; and inflation in the costs of supplies and equipment makes the current level of federal support chronically inadequate. It is our responsibility to correct this condition.

For fiscal year 1972, funds are requested to provide a clerical position for the newly-filled curator of Near Eastern Art to assist with a large backlog of accumulated work (\$6,000). An additional \$15,000 are requested for cabinets for the storage of Chinese and Japanese handscrolls and albums, and for miscellaneous office and other supplies.

1/ Excludes approximately \$300,000 in maintenance, operations, and protection support from the Buildings Management Department.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

ARCHIVES OF AMERICAN ART

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>0</u>	<u>11</u>	<u>11</u>
11 Personnel Compensation.....	\$ 0	\$ 145,000	\$ 145,000
12 Personnel Benefits.....	0	11,000	11,000
21 Travel & Transp. of Persons			
22 Transportation of Things			
23 Rent, Comm. & Utilities . . .	0	4,000	4,000
24 Printing & Reproduction.....			
25 Other Services	0	10,000	10,000
26 Supplies & Materials	0	3,000	3,000
31 Equipment	0	2,000	2,000
41 Grants			
TOTAL.....	<u>\$ 0</u>	<u>\$ 175,000</u>	<u>\$ 175,000</u>

Analysis of Total

Pay Increase	0	\$ 0	\$ 0
Program	0	\$175,000	\$175,000

Specification of Increase (Program):

Maintenance of Archives Holding (11 positions, \$175,000)

The Archives of American Art came to the Smithsonian Institution in May 1970. The several million documents in its collection constitute an invaluable aid to research and scholarship in the history of American visual arts from prior to the American Revolution to the present time. With the other resources of the National Collection of Fine Arts and the National Portrait Gallery, the Archives makes the Fine Arts and Portrait Galleries Building a major center for the study of American art. During the past year, several hundred researchers have used the Archives and a number of recent publications depended heavily on Archives documents. The \$175,000 requested for fiscal year 1972 will provide for personnel, space rental, contractual services (including microfilming), office supplies and equipment.

ARCHIVES OF AMERICAN ART

1970 Actual	\$ 55,000 ^{1/}
1971 Estimate	\$175,000 ^{1/}
1972 Estimate	\$175,000

The Archives of American Art, founded in Detroit in 1954 and a bureau of the Smithsonian Institution since May 1970, is committed to aiding research and scholarship in the history of the visual arts in this country from prior to the revolutionary war period to the present time. It acts to achieve this goal by acquiring, organizing, and preserving the primary documentation needed by historians--the correspondence, diaries, business papers, and photographs of painters, sculptors, critics, dealers, and collectors, and the formal records of galleries, museums, and art societies. These collections of paper are cataloged, microfilmed, and made available to scholars. A photograph of an item in the Archives holdings is shown on a following page.

The processing and chief reference center of the Archives is now located in space provided by the National Collection of Fine Arts and the National Portrait Gallery library. Added to the library, and to the archival material already possessed by these two museums, the Archives will make the old Patent Office building a major center for the study of American Art.

The organization expects to raise private funds amounting to about \$200,000 in fiscal year 1971. This income is used primarily to support Archives' activities outside Washington. It is hoped that this level will be maintained. The National Portrait Gallery and the National Collection of Fine Arts have helped to offset initial costs by providing facilities and earmarking some of their funds to supplement the Archives own resources. Because the Archives came to the Smithsonian after the fiscal year 1971 budget had been submitted, it was not possible to include in that budget a request for separate funds to enable the Institution to make full use of this great collection of materials. This year, \$175,000 are being requested to be appropriated for the AAA, an amount which reflects no increase over the estimated fiscal year 1971 level of funding shared by the National Collection of Fine Arts and the National Portrait Gallery.

During the past year the Archives has acquired over 100,000 individual items. Among the more important collections received were the papers of William Baziotes, Cecila Beaux, Karl Bitter, Herbert Ferber, Palmer Hayden, Ibram Lassaw, Guy Pene du Bois, and Ben Shahn. Of particular interest is a large collection of records accumulated by Charles Henry Hart, an authority on 18th and early 19th century portraiture.

The Archives' oral history program continued its activities with a series of tape recorded interviews with administrators and other figures in the New York art world. Among those people interviewed were Harvard Arnason, Ralph Colin, Lawrence Fleischman, Henry Geldzahler, Huntington Hartford, and Gordon Washburn.

Since the objective of the Archives is to serve scholarship by providing documentation to researchers, its achievement is measured by the effective use of Archives resources in the writing of exhibition catalogues, catalog raisonnés, articles, biographies, monographs. The Archives further approaches its goal by offering grants in aid, by publishing a quarterly Journal, and by disseminating information on its holdings to universities and museums.

^{1/} These amounts reflect shared costs by NCFA and NPG, and are included in the amounts shown for those galleries.

Research on the painter Stuart Davis, the Sculptor David Smith, the Black Mountain College Art Department, and the federal art programs of the 1930's are a few of the more important projects now under way. Among other recent publications which depended heavily on Archives documents are Barbara Novak, American Painting of the Nineteenth Century, N. Y., 1969; Marcia M. Mathews, Henry Ossawa Tanner, Chicago, 1969; William I. Homer, Robert Henri and his Circle, Ithaca, N. Y., 1969; and Sheldon Reich, John Marin; A Stylistic Analysis and Catalogue Raisonne, Tucson, 1970.

With the establishment of its office in Washington, D. C., the volume of use of Archives holdings has risen sharply owing to the need for documentation by the staffs of the National Collection of Fine Arts, the National Portrait Gallery, the National Gallery of Art, and student and faculty researchers at the University of Maryland and George Washington University. Since the Archives is still a recent arrival here, it anticipates a further increase in the use of its resources in the coming year.

Funding requested in the fiscal year 1972 budget will provide for administrative and curatorial personnel (\$156,000) and for space rental, contractual services (including microfilming), office supplies, and equipment (\$19,000).

London June 15. 1783.

Dear Sir

I am greatly Obliged to you for the friendly Letters by Capⁿ Falkner and M^r Vaurie, the afforded me much pleasure in the account of your honorable situation, as a man, and an Artist, and before I provide any farther with this letter, let me congratulate you and my Countrymen ⁱⁿ general, on the event of the Peace and the fortitude they have shown during the unhappy War. Their wisdom and unshaken perseverance, must enroll them for ever among the greatest characters of antiquity, and transmit that name which nothing but their ~~greatness~~ Virtues could have achieved.

You have given me great delight in saying you would by the next opportunity, send me a whole length portrait of that greatest of all Characters, General Washington. Whether the picture would meet with a sale here I cannot tell - but I am sure there are hundreds here who would

Page from letter from Benjamin West to Charles Willson Peale dated London, June 15, 1783, congratulating him "and my countrymen in general, on the event of the peace and the fortitude they have shown" and referring to "that greatest of all characters, General Washington." Both West and Peale were very important figures in American art.

I would greatly ^{be} obliged if you could send
Yours Obed^t Serv^t Ben^t West

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

NATIONAL ARMED FORCES MUSEUM ADVISORY BOARD

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>8</u>	<u>-2</u>	<u>6</u>
11 Personnel Compensation.....	\$111,000	\$ -8,000	\$103,000
12 Personnel Benefits.....	9,000	-1,000	8,000
21 Travel & Transp. of Persons	2,000	-1,000	1,000
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....			
25 Other Services	29,000	-22,000	7,000
26 Supplies & Materials	1,000		1,000
31 Equipment			
41 Grants			
TOTAL	<u>\$ 152,000</u>	<u>\$ -32,000</u>	<u>\$ 120,000</u>

Analysis of Total

Pay Increase	\$ 8,000	\$ 5,000	\$ 13,000
Program	\$144,000	\$-37,000	\$107,000

Specification of Increase (Program):

NATIONAL ARMED FORCES MUSEUM ADVISORY BOARD

1970 Actual	\$182,000
1971 Estimate	\$152,000
1972 Estimate	\$120,000

The National Armed Forces Museum Advisory Board advises and assists the Board of Regents of the Smithsonian Institution on matters related to the establishment of a national historical museum park to be known as Bicentennial Park and a study center to be known as the Dwight D. Eisenhower Institute for Historical Research. Preliminary approval has been obtained for two sites on the Potomac River, both already under federal ownership and within a short distance of downtown Washington: Fort Foote Park, in Prince George's County, Maryland, and Jones Point Park, on the southern edge of Alexandria, Virginia.

UNITED STATES NATIONAL MUSEUM

This group of activities includes a major segment of the conservation and preservation efforts of the Institution, the collections documentation function, the exhibits effort, and the leadership role of the Smithsonian in diffusing knowledge and training in these areas to the national museum community.

For fiscal year 1972, only necessary pay increases are being requested for the Office of Museum Programs, the Office of Exhibits, and small program amounts for important needs in the Conservation Analytical Laboratory and the Registrar's Office. A separate request for a major exhibition project is being requested in the special program's section, but these funds are nonrecurring in nature and are necessary to develop and improve the permanent educational displays. The increase requested for United States National Museum activities is \$183,000, or two percent of the total Institutional requested increase.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

OFFICE OF MUSEUM PROGRAMS

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>9</u>	<u>0</u>	<u>9</u>
11 Personnel Compensation.....	\$ 143,000	\$ 4,000	\$ 147,000
12 Personnel Benefits.....	11,000	0	11,000
21 Travel & Transp. of Persons	8,000	0	8,000
22 Transportation of Things	2,000	0	2,000
23 Rent, Comm. & Utilities	1,000	0	1,000
24 Printing & Reproduction.....			
25 Other Services	120,000	0	120,000
26 Supplies & Materials	1,000	0	1,000
31 Equipment	18,000	0	18,000
41 Grants			
TOTAL.....	<u>\$ 304,000</u>	<u>\$ 4,000</u>	<u>\$ 308,000</u>

Analysis of Total

Pay Increase	\$ 4,000	\$4,000	\$ 8,000
Program	\$300,000	0	\$300,000

Specification of Increase (Program):

Museum Services

This Office provides program planning for museum and exhibition activities, surveys visitor reactions to the Smithsonian's exhibits, and works with other museums and organizations on matters of mutual concern. No program fund increase for the operations of this Office is requested for fiscal year 1972.

UNITED STATES NATIONAL MUSEUM
OFFICE OF MUSEUM PROGRAMS

1970 Actual	\$233,000
1971 Estimate	\$304,000
1972 Estimate	\$308,000

The Office of Museum Programs provides program planning and review of the Smithsonian Institution's museum and exhibition activities with special emphasis on developing experimental and educational exhibits, surveying visitor reaction to the Institution's services, and providing advice and technical assistance to other museums. It works cooperatively with museum professionals and their associations and organizations to increase the effectiveness of museums in the performance of their scholarly and public education functions. The Office of the Registrar, the Conservation Analytical Laboratory, and the Office of Exhibits are under the general administration of this Office.

No program fund increase is sought for fiscal year 1972 for the operations of this Office. An amount of \$4,000 is requested for necessary pay purposes.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

OFFICE OF EXHIBITS

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>167</u>	<u>-3</u>	<u>164</u>
11 Personnel Compensation.....	\$1,936,000	\$62,000	\$1,998,000
12 Personnel Benefits.....	143,000	5,000	148,000
21 Travel & Transp. of Persons	10,000	0	10,000
22 Transportation of Things			
23 Rent, Comm. & Utilities	1,000	0	1,000
24 Printing & Reproduction.....	40,000	0	40,000
25 Other Services	64,000	0	64,000
26 Supplies & Materials	127,000	0	127,000
31 Equipment	40,000	0	40,000
41 Grants			
TOTAL.....	<u>\$2,361,000</u>	<u>\$67,000</u>	<u>\$2,428,000</u>

Analysis of Total

Pay Increase	\$ 98,000	\$67,000	\$ 175,000
Program	\$2,263,000	0	\$2,263,000

Specification of Increase (Program):

Maintenance of Current Exhibits Program

No program increase is sought for fiscal year 1972 for the Office of Exhibits as such. Its base resources are largely absorbed by the maintenance and upgrading of existing exhibits, the design of new permanent exhibits, and a program of changing special exhibits. A request for new nonrecurring funds for the construction and installation of a major permanent exhibition on the World of Living Things in the National Museum of Natural History is presented in the special programs section of this budget request.

UNITED STATES NATIONAL MUSEUM
OFFICE OF EXHIBITS

1970 Actual	\$2,354,000
1971 Estimate	\$2,361,000
1972 Estimate	\$2,428,000

The Office of Exhibits, in collaboration with museum scientists and historians, designs, prepares, and installs exhibitions in Smithsonian museums, and occasionally for the Smithsonian Institution Traveling Exhibition Service. Since its establishment in 1955, the Office has prepared over 3,500 permanent exhibit units primarily in the National Museum of Natural History and the National Museum of History and Technology, and has produced hundreds of special exhibits in art, history, and science. New techniques such as freeze-drying of animal and plant specimens and new methods of presentation, including audio-visual and visitor participation devices, are developed to enhance the visitor's learning experience. Many staff innovations have been copied around the world. By counseling visiting professionals and by training museum technicians from all points of the world, the Office has had a significant effect on museum installations in many countries.

No program fund increase is sought for fiscal year 1972 for the Office of Exhibits. The base appropriation is largely absorbed by maintenance and upgrading of existing exhibits, design of new exhibits, and a modest program of changing special exhibits. New permanent exhibits, space for which exists in present Smithsonian museums, will require new nonrecurring funds for construction and installation. A request for these funds is included in the special programs section of this budget request. An increase of \$67,000 is requested for necessary pay for the Office of Exhibits staff.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

CONSERVATION ANALYTICAL LABORATORY

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>11</u>	<u>3</u>	<u>14</u>
11 Personnel Compensation.....	\$ 113,000	\$ 26,000	\$ 139,000
12 Personnel Benefits.....	9,000	2,000	11,000
21 Travel & Transp. of Persons	5,000	0	5,000
22 Transportation of Things			
23 Rent, Comm. & Utilities	1,000	0	1,000
24 Printing & Reproduction.....	1,000	0	1,000
25 Other Services	7,000	0	7,000
26 Supplies & Materials	6,000	3,000	9,000
31 Equipment	12,000	24,000	36,000
41 Grants			
TOTAL.....	<u>\$ 154,000</u>	<u>\$ 55,000</u>	<u>\$ 209,000</u>

Analysis of Total

Pay Increase	\$ 6,000	\$ 5,000	\$ 11,000
Program	\$148,000	\$50,000	\$198,000

Specification of Increase (Program):

Protection, Conservation, and Analysis of the Collections (3 positions, \$50,000)

Activities of the Laboratory fall into two broad areas: conservation, including preventive and remedial measures, and analysis of the composition of objects in support of research. Increased funding is required for a small fumatorium chamber and a technician to cope with serious insect infestations in the History and Technology collections (\$24,000). Two additional conservators at a cost of \$14,000 are required to care for some 13 million non-biological objects (for instance, coins) in the collections. An Ebert spectrograph (\$12,000) for analysis purposes will double current output of existing staff.

UNITED STATES NATIONAL MUSEUM
CONSERVATION ANALYTICAL LABORATORY

1970 Actual.....\$134,000
1971 Estimate.....\$154,000
1972 Estimate.....\$209,000

The Conservation Analytical Laboratory was established in 1963 to serve the museums of the Smithsonian Institution. It ascertains and advises on the suitability of environmental conditions found in the buildings for objects displayed or in storage, and suggests remedial action if necessary. Advice is given to the curatorial units on conservation procedures for specific objects. Objects which present special problems or require more specialized equipment than is available in these units are treated in the laboratory.

Analysis of objects or their materials (e.g., pigments, fibers, alloys, or corrosion products) is done by advanced instrumentation to determine appropriate conservation procedures or to provide museum archaeologists and historians with basic research data concerned with dates, attribution, and ancient production methods.

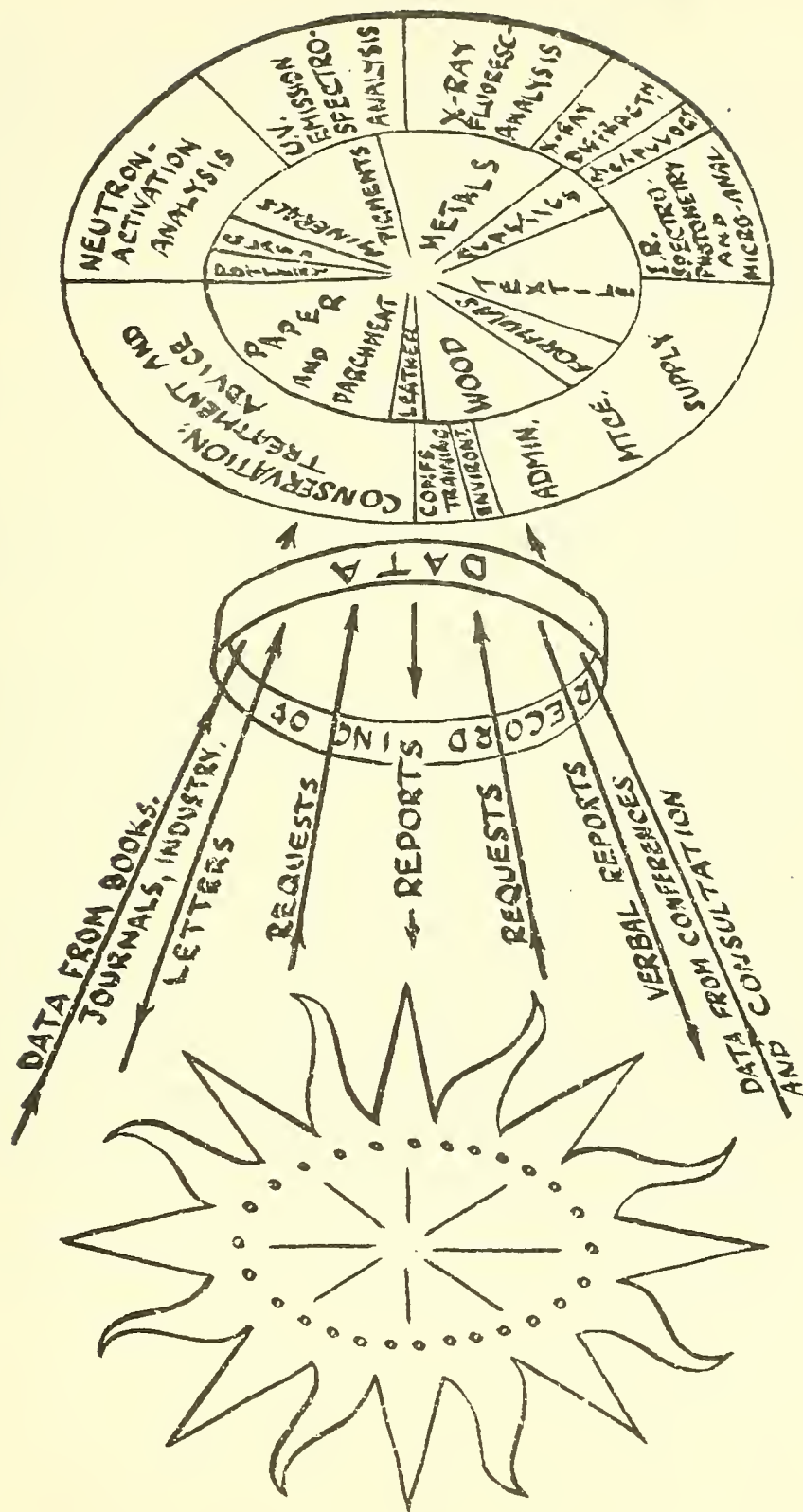
Current program shortages include the following for which a program increase of \$50,000 is requested. An additional \$5,000 are requested for necessary pay for current staff members.

Need for Increase--The lack of a fumatorium to sterilize all objects on entry into the History and Technology Building allows development of insect colonies within storage areas with consequent risk of serious and wide-spread loss of the collections. Over 30 reports of insect finds have been made in this one building in one year. Emergency actions taken on site to counter this risk are expensive in manpower, less than wholly effective, and inevitably add to the level of poison in the human environment. Funds are requested for a small fumatorium chamber (\$12,000) plus one technician to operate it (\$9,000) and to assist in sampling for analysis and supplies and materials (\$3,000).

Conservation activity falls ludicrously short of the need. With thirteen million non-biological objects in the Smithsonian collections, if only one percent of these is in need of attention, then it would require 32 man-years in order to devote 30 minutes to each. Thirty minutes is barely sufficient time to carry an object to and from this laboratory, without allowing time for any useful treatment. CAL at present has only three positions for conservators. Two additional conservators are requested (\$14,000).

Conservation activity requires supporting specialized analytical facilities. Some increase in output without increase in analytical staff or floor space can be achieved by introducing newly-available instrumentation. An Ebert spectrograph to supersede the laboratory's present instrumentation (obtained on surplus) will literally double output and will help to remove a bottleneck that is slowing conservation activity by existing staff (\$12,000).

The resources available to CAL in the fiscal year 1970 were used as shown in the accompanying diagram. This division of effort reflects needs expressed by curators that were satisfied to the maximum permitted by the available apparatus, funds, staff abilities, and space. In that year 148 requisitions (395 objects or samples) were accepted from 28 sources within the Smithsonian bureaus, and 140 requisitions (144 samples or objects) were completed, the balance being in progress at the end of the year (60 percent requisitioned treatment or advice, 40 percent analysis). In addition, training of CAL and other Smithsonian Institution personnel proceeded, national and international professional contacts were maintained, research papers published, and practical assistance given to other museums and local archaeological societies.



28 SOURCES WITHIN 11
SMITHSONIAN BUREAUS

PHOTOGRAPHY, DOCUMENTS,
OPTICAL COINCIDENCE INDEX

DISTRIBUTION
OF ACTIVITIES

ACTIVITIES OF THE CONSERVATION-ANALYTICAL LABORATORY, 1969-70



1871

1872

1873

1874

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

OFFICE OF THE REGISTRAR

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>29</u>	<u>1</u>	<u>30</u>
11 Personnel Compensation.....	\$ 223,000	\$ 12,000	\$ 235,000
12 Personnel Benefits.....	17,000	1,000	18,000
21 Travel & Transp. of Persons			
22 Transportation of Things	59,000	26,000	85,000
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....			
25 Other Services	0	16,000	16,000
26 Supplies & Materials	1,000	1,000	2,000
31 Equipment	1,000	1,000	2,000
41 Grants			
TOTAL	<u>\$ 301,000</u>	<u>\$ 57,000</u>	<u>\$ 358,000</u>

Analysis of Total

Pay Increase	\$ 8,000	\$ 7,000	\$ 15,000
Program	\$293,000	\$50,000	\$343,000

Specification of Increase (Program):

Protection of Accession Records and Shipping and Mail Room Requirements
(1 position, \$50,000)

Additional funding is requested for three important areas of the Registrar's operations. A records technician and funds for contractual microfilming services (\$22,000) are required to begin the job of duplicating and protecting some 1,800,000 documents dating from 1842 which record accessions to the National Museum of Natural History and the National Museum of History and Technology. An additional \$26,000 are required to bring the level of shipping funds closer to identified requirements for the transportation of exhibits, specimens, and field equipment. An amount of \$2,000 is needed for mail room supplies and equipment to meet a growing volume of mail.

UNITED STATES NATIONAL MUSEUM
OFFICE OF THE REGISTRAR

1970 Actual	\$327,000
1971 Estimate	\$301,000
1972 Estimate	\$358,000

The Office of the Registrar was established officially in 1881. It has responsibility for recording and safeguarding the documents pertaining to the receipt and legal ownership of the objects accessioned into the National Collections of the National Museum of Natural History and the National Museum of History and Technology. In addition, the office provides essential service to support all units of the Smithsonian through the management of the central mail and messenger service, the Smithsonian shipping office, U. S. Customs clearances, public inquiries for the museums, and official foreign travel documents such as passports, visas, and work permits.

Current program shortages occur in the preservation of records, shipping, and mail service for which an additional \$50,000 are requested. Also requested are \$7,000 for necessary pay purposes.

Need for Increase--A critical area requiring prompt attention is the microfilming of the valuable accession records which consist of original papers that basically document objects in the National Collections. These unique papers date from before the establishment of the Smithsonian, the earliest dated 1842, and have never been duplicated. Their loss by fire or other disaster would seriously affect the research value of the collections. A long-term project is proposed: first, to place the estimated 1,800,000 pieces on microfilm as a precautionary measure against loss, and second, to deacidify and restore selected early papers that are brittle, torn, and badly faded. A records technician is required to separate, coordinate, and safeguard the papers during microfilming and to reassemble them for refiling (\$6,000). Support in contractual services to commence the microfilming and complete one-fourth to one-third of the filming is estimated at \$16,000.

A primary responsibility of the Registrar's Office is the transportation of exhibits, specimens, and related research items for the museums, galleries, and laboratories. The requests for this service have been growing rapidly in light of expanding activities of program units. A recent analysis indicates that approximately \$102,000 are necessary to meet expected transportation costs, but only about \$59,000 are currently available. This deficit situation has been brought about over a period of years by continued growth in requests for services, the necessity of absorbing part of salary increases, and inflationary cost increases in other areas. An increase of \$26,000 is requested to meet a higher portion of identified requirements and offset inflationary pressures in the budget year.

Mail volume continues to grow as the public becomes more aware of the Institution's activities and services. An increase of \$2,000 for mail room supplies and equipment is requested.

PUBLIC SERVICE

The Institution has not allowed itself to rest with static presentations and exhibits of collections directed at only those persons with sufficient motivation, time, or money to visit its centrally located galleries and museums. In order to be successful in conveying the richness of the nation's heritage to a wider public, and to offer additional opportunities for appreciation of its growth and development, the Institution has sought to expand its public reach. It has achieved this in a variety of ways over the last several years.

The experimental development of a neighborhood museum in Anacostia has shown that museum operations may be carried out in the crucible of the inner city, that children may learn with delight and advantage, and that the residents of the area will treat with respect what they regard as their own center for learning and recreation. The story of the Anacostia Neighborhood Museum and its usefulness stands as one of the outstanding achievements of the Institution in recent years.

The activities of some of the other public service units have been no less important. There is the popular Folklife Festival on the Mall, sponsored annually by the Division of Performing Arts. The services of the Office of Public Affairs, which range through activities in the fields of information and public education, such as radio, television, documentary films, news releases, and guide pamphlets are especially valuable. The world-wide character of the programs of the Office of International Activities and the International Exchange Service serve to bring this nation closer to the ideal of a world community through research and the dissemination of knowledge.

The increase requested for the Public Service Activities amounts to \$118,000, or one percent of the total Institutional requested increase.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

ANACOSTIA NEIGHBORHOOD MUSEUM

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>11</u>	<u>4</u>	<u>15</u>
11 Personnel Compensation.....	\$ 106,000	\$ 36,000	\$ 142,000
12 Personnel Benefits.....	8,000	3,000	11,000
21 Travel & Transp. of Persons	3,000	1,000	4,000
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....			
25 Other Services	4,000	0	4,000
26 Supplies & Materials	4,000	6,000	10,000
31 Equipment	0	6,000	6,000
41 Grants			
TOTAL.....	<u>\$ 125,000</u>	<u>\$ 52,000</u>	<u>\$ 177,000</u>

Analysis of Total

Pay Increase	\$ 6,000	\$ 7,000	\$ 13,000
Program	\$119,000	\$45,000	\$164,000

Specification of Increase (Program):

Classroom and Workshop Activity and General Operations (4 positions, \$45,000)

In the three years of its operations the Anacostia Neighborhood Museum has entertained and instructed over 150,000 visitors and has offered a wide array of exhibits, classes, and youth programs. Although private gifts, donations, and grants for special programs and projects are coming to the Museum, such support for regular, ongoing operations and administration has virtually dried-up. Yet community demands for museum-related education services are increasing steadily. Although part-time and volunteer help from the community is used, two full-time instructors (\$13,000) are required to put class and workshop activities on a more regular basis. An assistant to the director (\$14,000) is needed to work with the community and other groups interested in setting up similar museums. A custodian (\$5,000) also is needed to help maintain the public and work areas of the Museum. Funds in the amount of \$13,000 are required for custodial, exhibit, and workshop supplies and equipment and for program related travel.

ANACOSTIA NEIGHBORHOOD MUSEUM

1970 Actual	\$124,000
1971 Estimate	\$125,000
1972 Estimate	\$177,000

The Anacostia Neighborhood Museum was established to reach out to new audiences who are unaware of museum resources, physically too far from them, or as inhabitants of low-income population density centers do not see the interest or relevance of museums. Starting in 1966, the Smithsonian sought out community reaction to the concept of a permanent neighborhood museum in the inner city. Reaction was most favorable and the desire for community involvement appeared strongest in Anacostia. The Museum was founded entirely by private donations and was opened in September 1967. Exhibits concentrated on visitor involvement and classes in sculpture, leathercraft, clay modeling, drawing, and painting have been held. A photograph of such a class appears on a following page. In subsequent months, the Museum, in close collaboration with its Neighborhood Advisory Council, began to present exhibits which the community requested, primarily in the field of Negro history. In each case, the exhibit served as a backdrop for school programs, lectures, and concerts. Three years later, the Museum has entertained and instructed over 150,000 visitors and offers a widening array of classes and youth programs. Anacostia has linked its activities directly to the needs of the community and has assured a fresh, nontraditional approach to the role of the museum.

In exhibits and related education programs, Anacostia is now concentrating on urban problems. A recent substantial combined grant from the Carnegie Corporation, the Cafritz Foundation, and the Department of Housing and Urban Development will permit the Museum to identify Anacostia's most pressing social and economic problems through community participation and translate these problems into exhibits with related educational activities. This effort should have a wide impact since to a large degree the problems of Anacostia are shared widely by other urban centers across the nation.

A program increase of \$45,000 is requested for classroom and workshop activity, overall program administration, and general costs of operation. An additional funding of \$7,000 is requested for necessary pay for current staff.

Need for Increase--Although private gifts, donations, and grants for special programs and projects continue to be made available to the Museum, no such funds are now being provided for regular on-going programs and administration. To illustrate this point, over \$100,000 in general purpose funds were received during 1967, 1968, and 1969; virtually none the past year. The increase provided in the fiscal year 1971 appropriation (\$35,000 of \$75,000 requested) met part of these costs. For instance, rental of the Museum building can now be paid with federal funds. This increase, however, could not fund the additional staff required for basic activities.

Community demands on the Museum for classes, workshops, and other museum-related education services have increased steadily since the Museum opened. Part-time and volunteer help from the community has been used, but two full-time instructors (\$13,000) are required to put the class and workshop activities on a more regular basis. An assistant to the director (\$14,000) is needed to work with the community and other groups interested in setting up similar museums. A custodian (\$5,000) also is needed to help maintain the public and work areas of the Museum. Funds in the amount of \$13,000 are required for custodial, exhibit, and workshop supplies and equipment and for program related travel.



Class in pottery at the Anacostia Neighborhood Museum.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

OFFICE OF INTERNATIONAL ACTIVITIES

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>8</u>	<u>1</u>	<u>9</u>
11 Personnel Compensation.....	\$ 112,000	\$ 12,000	\$ 124,000
12 Personnel Benefits.....	8,000	2,000	10,000
21 Travel & Transp. of Persons	4,000	9,000	13,000
22 Transportation of Things			
23 Rent, Comm. & Utilities	0	1,000	1,000
24 Printing & Reproduction.....			
25 Other Services			
26 Supplies & Materials	1,000	1,000	2,000
31 Equipment			
41 Grants			
TOTAL.....	<u>\$ 125,000</u>	<u>\$ 25,000</u>	<u>\$ 150,000</u>

Analysis of Total

Pay Increase	\$ 6,000	\$ 9,000	\$ 15,000
Program	\$119,000	\$16,000	\$135,000

Specification of Increase (Program):

Foreign Currency Program Administration (1 position, \$16,000)

A major role of the Office of International Activities is to administer the Foreign Currency Program which awards grants for research abroad to American institutions of higher learning. The program is now supporting 97 grants in biology, archeology, earth and space sciences, and museum programs in ten excess currency countries. Additional clerical help is imperative to help administer a growing number of grants. One clerk-typist is requested (\$5,000). An additional \$11,000 are requested, primarily for travel and related expenses of the Foreign Currency Program Advisory Councils that meet to select proposals for funding and review performance of work underway.

OFFICE OF INTERNATIONAL ACTIVITIES

1970 Actual	\$118,000
1971 Estimate	\$125,000
1972 Estimate	\$150,000

The Office of International Activities was established in 1965 to initiate, coordinate, and oversee Smithsonian interests abroad. In this capacity, it assists the Institution's scientific staff planning research overseas, briefs American diplomats on Smithsonian activities abroad, and maintains close contact with the foreign diplomatic missions in Washington. In addition, it briefs pertinent foreign visitors and administers training programs for foreign museum technicians at the Institution. The Office also serves as the Executive Agent of the Iran-U.S. Agreement signed in 1968 to foster scientific cooperation between the two countries.

Recently the Office has become increasingly involved in the worldwide environmental and conservation interests of the Institution. It has been concerned with conservation efforts on Dominica, Aldabra, and in Honduras as well as at the Smithsonian's own Chesapeake Bay Center. It was instrumental in bringing about a symposium on the endangered species of Hawaii. An environmental symposium to be held in India is now in the planning stage.

A major role of the Office is to administer the Smithsonian Foreign Currency Program which awards grants for research abroad to American institutions of higher learning as well as to Smithsonian scientists. Since 1965, over \$10.5 million worth of PL-480 "excess" currencies have been obligated to scientists working in the four basic fields of Smithsonian scientific competence: systematic and environmental biology, archaeology and related disciplines, earth and space sciences, and museum programs. The program is now supporting 97 projects operating in Ceylon, Egypt, Guinea, India, Israel, Morocco, Pakistan, Poland, Tunisia, and Yugoslavia. A symposium on Smithsonian projects in Ceylon was held there, and a follow-up meeting is planned for the present year.

An increase of \$16,000 is requested primarily for Foreign Currency Program administration. \$9,000 are required for necessary pay increases.

Need for Increase--In fiscal year 1972 the Office of International Activities will face a critical shortage of clerical personnel. With the continual growth of the responsibilities of the OIA and an ever increasing number of grants handled by the Foreign Currency Program, additional clerical help is imperative. Since the Office's establishment in 1965, its administrative staff has grown, but clerical positions have not increased. At present, six persons are employed in an administrative capacity while there are only two clerical positions. An additional clerk-typist is requested (\$5,000).

An additional \$11,000 are requested for travel and office maintenance expenses. Of this amount, \$7,000 are required for transportation and per diem expenses for members of the Foreign Currency Program Advisory Councils. Composed of prominent American scientists, these councils meet twice yearly to review proposals submitted to the Foreign Currency Program for possible funding. The remaining \$4,000 are needed for domestic travel and overseas travel-related expenses of the OIA staff and for office supplies and equipment.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

INTERNATIONAL EXCHANGE SERVICE

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>9</u>	<u>0</u>	<u>9</u>
11 Personnel Compensation.....	\$ 73,000	\$ 3,000	\$ 76,000
12 Personnel Benefits.....	5,000	0	5,000
21 Travel & Transp. of Persons			
22 Transportation of Things	38,000	13,000	51,000
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....			
25 Other Services			
26 Supplies & Materials	4,000	2,000	6,000
31 Equipment			
41 Grants			
TOTAL.....	<u>\$120,000</u>	<u>\$18,000</u>	<u>\$138,000</u>

Analysis of Total

Pay Increase	\$ 2,000	\$ 3,000	\$ 5,000
Program	\$118,000	\$15,000	\$133,000

Specification of Increase (Program):

Restoration of Exchange Services (\$15,000)

Official publications, such as the Federal Register and the Congressional Record, continue to be exchanged as required by law. A static appropriation and higher costs, however, have forced the Exchange Service to reduce substantially the exchange of library, university, and college publications. Additional funds in the amount of \$15,000 for shipping and supplies are requested to help restore the previous level of these important exchanges.

INTERNATIONAL EXCHANGE SERVICE

1970 Actual.....	\$118,000
1971 Estimate.....	\$120,000
1972 Estimate.....	\$138,000

Through the International Exchange Service, public and private institutions in the United States transmit their publications to other countries and receive publications from foreign institutions. Begun in 1849 as a exchange service between the Smithsonian and learned societies in foreign countries, the program was so successful that five years later it was expanded to other American libraries, scientific societies, and educational institutions. As a result of the Brussels Convention of 1886 and some 50 bilateral treaties, the Smithsonian was designated as the exchange bureau for official United States publications. Today many libraries in the United States are dependent upon the exchange program for their foreign publications.

An appropriation increase of \$15,000 is requested to help restore the level of exchange services. Funding of \$3,000 for necessary pay also is sought.

Need for Increase--In fiscal year 1967 over 1.5 million packages of publications were received from organizations in the United States for exchange with foreign libraries. By fiscal year 1971, as a result of a static appropriation, higher salary costs, and inflation in the costs of shipping and packaging supplies and equipment, the volume that could be shipped had dropped by about one-third. At present, the exchange of official publications (Federal Register, Congressional Record, etc.) is current as required by law. The exchange programs of colleges, universities, scientific societies, libraries, and medical and dental schools however, have had to be severely limited. Much of these materials are of great benefit to foreign libraries especially in the developing countries. Funds are requested for shipping (\$13,000) and packaging supplies (\$2,000).

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

DIVISION OF PERFORMING ARTS

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>7</u>	<u>0</u>	<u>7</u>
11 Personnel Compensation.....	\$ 110,000	\$ 6,000	\$ 116,000
12 Personnel Benefits.....	9,000	0	9,000
21 Travel & Transp. of Persons	21,000	0	21,000
22 Transportation of Things	6,000	0	6,000
23 Rent, Comm. & Utilities	7,000	0	7,000
24 Printing & Reproduction.....	4,000	0	4,000
25 Other Services	12,000	0	12,000
26 Supplies & Materials	14,000	0	14,000
31 Equipment	13,000	0	13,000
41 Grants			
TOTAL.....	<u>\$ 196,000</u>	<u>\$ 6,000</u>	<u>\$ 202,000</u>

Analysis of Total

Pay Increase	\$ 8,000	\$6,000	\$ 14,000
Program	\$188,000	0	\$188,000

Specification of Increase (Program):

Programs in American Cultural History

The Division of Performing Arts is responsible for programs dealing with America's cultural heritage particularly as it shows itself in theater, music, dance, and craft skills. Notable among its programs are the annual Festival of American Folklife and its participation in the annual American College Theater Festival. A program fund increase is not being sought for fiscal year 1972.

DIVISION OF PERFORMING ARTS

1970 Actual	\$226,000
1971 Estimate	\$196,000
1972 Estimate	\$202,000

The Division of Performing Arts is responsible for programs dealing with our national aesthetic expressions, particularly as they evidence themselves in oral, music, or dance forms. By staging such events as the annual Festival of American Folklife, which in 1970 drew more than 750,000 persons to the Mall over a five-day period, this Division undertakes to extend and further enliven the Smithsonian's educational services to the public.

At the Festival, more than 350 Indians, cheesemakers, barrelmakers, jellymakers, distillers, wood carvers, basketmakers, jazz musicians, folk singers, gospel groups, and musicians from many regions of the United States demonstrated the survival of American folklife in performances which reminded visitors of their still-flourishing cultural heritage.

Programs in jazz and modern dance reflect contributions to world culture which are widely recognized as particularly American in origin and style. Programs in contemporary and period music, theatre, and dance provide understanding of the creative view of the present and past.

The Division offers a variety of Touring Performances such as theatre, musical concerts, puppet theatre, the American Folklife Company, and lectures which are available to other museums, universities, and cultural centers throughout the United States. It also sponsors, with the American Educational Theater Association and the John F. Kennedy Center for the Performing Arts, the annual American College Theater Festival.

No program fund increase is sought for fiscal year 1972. An additional amount of \$6,000 is requested for necessary pay for current staff.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

OFFICE OF PUBLIC AFFAIRS

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>12</u>	<u>0</u>	<u>12</u>
11 Personnel Compensation.....	\$ 206,000	\$ 16,000	\$ 222,000
12 Personnel Benefits.....	17,000	1,000	18,000
21 Travel & Transp. of Persons			
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....	10,000	0	10,000
25 Other Services	2,000	0	2,000
26 Supplies & Materials	6,000	0	6,000
31 Equipment			
41 Grants			
TOTAL.....	<u>\$ 241,000</u>	<u>\$ 17,000</u>	<u>\$ 258,000</u>

Analysis of Total

Pay Increase	\$ 12,000	\$17,000	\$ 29,000
Program	\$229,000	0	\$229,000

Specification of Increase (Program):

Orientation, Information, and Public Education

This Office provides visitor and public orientation, information, and education services. No program fund increase is requested for fiscal year 1972.

OFFICE OF PUBLIC AFFAIRS

1970 Actual \$277,000
1971 Estimate \$241,000
1972 Estimate \$258,000

This Office is responsible for serving visitors to the Smithsonian and the public at large through a range of activities in the fields of orientation, information, and public education--radio, television, documentary films, news releases, guide pamphlets, tours, automatic telephone information services, publications, and other programs. Included in its presentations are the Free Film Theater, the Torch newspaper, the Smithsonian Calendar of Events, and "Radio Smithsonian" now being heard over 60 stations.

No program fund increase is sought for fiscal year 1972. An amount of \$17,000 for necessary pay for the current staff is requested.

SMITHSONIAN INSTITUTION SPECIAL PROGRAMS

This group of activities is considered to be of particular importance in implementing desired growth in the Institution's activities over the next several years. Some supplement program activities of the museums and galleries. For instance, opportunities are provided for outstanding pre-and post-doctoral investigators from across the nation to be selected for work under the supervision of the Institution's professional staff. Education services are provided by means of popular museum tours for school children and other education services. Other special programs provide the basis on which the Institution affects dramatic changes in its exhibits and research efforts. The exhibits program request is geared to produce one major exhibit on the World of Living Things in the Natural History Museum, while the Bicentennial of the American Revolution request will continue the Institution's efforts to celebrate and portray the first two-hundred years of American history and what they may mean for the future. The environmental science program request speaks to the second year of a coordinated Institutional effort to shed light on ecological problems in the nation, and the research awards request will enhance the Institution's ability to fund especially meritorious work of its professionals. The National Museum Act request is directed at strengthening the nation's museums by means of training and improved conservation, cataloging, and exhibits techniques. The increase being requested for these programs is \$1,926,000 and constitutes 22 percent of the total Institutional requested increase.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

BICENTENNIAL OF THE AMERICAN REVOLUTION

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>2</u>	<u>0</u>	<u>2</u>
11 Personnel Compensation.....	\$ 21,000	\$ 0	\$ 21,000
12 Personnel Benefits.....	2,000	0	2,000
21 Travel & Transp. of Persons			
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....	377,000	0	377,000
25 Other Services			
26 Supplies & Materials			
31 Equipment			
41 Grants			
TOTAL.....	<u>\$ 400,000</u>	<u>\$ 0</u>	<u>\$ 400,000</u>

Analysis of Total

Pay Increase	0	0	0
Program	\$400,000	0	\$400,000

Specification of Increase (Program):

Smithsonian Bicentennial Activities

The Bicentennial of the American Revolution offers the Smithsonian Institution a unique opportunity and an urgent duty. We must use our vast resources, and enlist the resources of others, to help rediscover and illuminate our national achievements. The theme of the Smithsonian's Bicentennial celebration is the American Experience; its purpose will be, in President Nixon's words, "...a new understanding of our heritage."

The Smithsonian program of Bicentennial activities is in addition to, and beyond, the Institution's normal level of day-to-day operation. It is designed to be complete in itself, to be terminal in nature, and to avoid permanent commitment of personnel and other additions to the appropriations base.

During the next several years, the greater part of the Institution's Bicentennial efforts will necessarily be devoted to the research, collection, and planning which are called for to arrive at the Institution-wide, coordinated events surrounding 1976. Preliminary work will result in some visible results such as individual exhibitions, seminars, and publications. But in general, the nature of the entire undertaking is such that the budget projection shows a steady progress from "behind the scenes" activities toward translation into public exhibitions, performances, and a series of major publications, as we approach 1976.

No program increase is requested for fiscal year 1972.

AMERICAN REVOLUTION BICENTENNIAL PROGRAM

1970 Actual	\$	0
1971 Estimate	\$	400,000
1972 Estimate	\$	400,000

The Bicentennial of the American Revolution offers the Smithsonian Institution a unique opportunity and an urgent duty. We must use our vast resources, and enlist the resources of others, to help rediscover and illuminate our national achievements. The theme of the Smithsonian's Bicentennial celebration is the American Experience; its purpose will be, in President Nixon's words, "...a new understanding of our heritage."

For this effort, the Smithsonian Institution is providentially well prepared. It is a remarkably comprehensive group of enterprises surveying every aspect of man's life and work--his social, political, and military institutions; his fine arts, his applied arts, his performing arts; his use of natural resources; and his adventures of exploration on this planet and into outer space. The Smithsonian Institution has a long and rich tradition of free interchange of ideas with the world of learning. It has been a center for the study of resources, natural and human, of the whole continent. The Smithsonian, as the repository for myriad objects sacred to our history and illustrative of the American Experience since the beginning, is preeminent among the museums of the world and second to none in the number of its visitors.

The Smithsonian program of Bicentennial activities is in addition to, and beyond, the Institution's normal level of day-to-day operation. It is designed to be complete in itself, to be terminal in nature, and to avoid permanent commitment of personnel and other additions to the appropriations base. The request for fiscal year 1972, \$400,000, and projected future funding is shown in Table I.

During the next several years, the greater part of the Institution's Bicentennial efforts will necessarily be devoted to the research, collecting, and planning which are called for to arrive at the Institution-wide, coordinated events surrounding 1976. Preliminary work will result in some visible results such as individual exhibitions, seminars, and publications. But in general, the nature of the entire undertaking is such that the budget projection shows a steady progress from "behind the scenes" activities toward translation into public exhibitions, performances, and a series of major publications, as we approach 1976.

The Smithsonian's Bicentennial activities are designed to be interrelated and mutually reinforcing, but for budgetary purposes they can be viewed under three headings: Exhibitions and Performances; Research and Publications; and National Programs.

Exhibitions and Performances

In the Nation's Capital, the Smithsonian offers a uniquely effective and appropriate site for dramatizing and interpreting the American Experience. Now some 13 million people each year visit the Smithsonian museums in Washington. By 1976 this figure is likely to reach 20 million, and interest in the Bicentennial may well bring the number to 30 million. The Smithsonian will provide these visitors with an appropriate and dramatic exposition. In January 1976 each of the Smithsonian's ten museums plans to open a major exhibiton commemorating the Bicentennial, the first occasion when so many of the Institution's resources will be devoted to a single theme. At the same time, a guide will be published showing the coherence of the Smithsonian's many activities in exploring and illustrating the American Experience.

The visitor to the Mall will have an unparalleled opportunity to participate in a sequence of varied and informative experiences. He will explore American history and see the expression of the American spirit through two centuries and across a wide range of subject matter.

At the National Museum of Natural History, he will see the look and sense the feeling of the land and its original inhabitants at the time the first Europeans arrived, and he will see what happened to these people and the effects wrought upon the land over the centuries.

At the Arts and Industries Building, he will see the way Americans saw themselves, their past and future, at the time of the 1876 Philadelphia Centennial. In this building, constructed originally to house materials that had been assembled and displayed at the Philadelphia Centennial, the same objects will be used to recapture the optimistic mood in which Americans celebrated this midpoint in our history.

In the National Air and Space Museum, the visitor will see an exhibition of what is perhaps America's greatest technological achievement, the conquest of outer space, and of the nation's future in the Space Age.

Special exhibitions at the National Museum of History and Technology will present the cultural, industrial, and political development of the United States. Examples of these are the Corridors of American Experience, a series of "time corridors" designed to enable the visitor to experience daily living at specific times in America's past. A "time machine", to be developed in the current year and tested on the public in fiscal year 1972, will transport the visitor by novel means of surveying the intervening experience.

The Price of Independence will present the risks and the opportunities of independence for the American colonists: the risks of sea trade, of potential civil war, the fear of defeat and the human and fiscal costs of war, supplemented by the problems which would result from the loss of trade with England. The second part will depict the new opportunities--political, economic, intellectual--to be found in independence. A newly designed computerized game will allow the museum visitor to select one of several roles (such as that of a Boston merchant, a Philadelphia laborer, or a Southern planter) and test his decisions against the actual facts of history in the period 1770-1820. In this way, he can relive the risks and opportunities of the Revolutionary Era. (A significant number of innovative display techniques, using new technology, will be developed. These technical advances will be made available to museums and display designers throughout the country.)

Other major activities will include an unprecedentedly comprehensive exhibit of portraits and associated objects of Americans of the Revolutionary Era, and a year-long festival of American traditional and ethnic performing arts and handcrafts (the "Grassroots American Culture Program").

Research and Publications

We believe that the commemorative activities associated with the Bicentennial should improve our understanding of ourselves and make a lasting contribution to human knowledge. When the performances have ended and the exhibitions have closed, something of use to Americans during the third century of our national life should remain.

As an important part of the Bicentennial program of the Smithsonian, we propose to undertake a number of inventories of national cultural resources. These will range from an Inventory of American Paintings, to a Survey of Ethnic and Regional Cultural Forms. During fiscal year 1971, the scope and techniques

of these surveys will be specified and refined, with a particular view to coordinating the activities of the scholars, students, conservationists, and photographers who will participate in them. Every effort will be made to enlist the support and cooperation of regional and local groups in this enterprise. We expect that the actual compiling of the inventories will begin in fiscal year 1972.

The first result of these inventories will be apparent in our own Bicentennial exhibits and performances, as for the first time we will be able to draw upon the entire range of America's cultural resources. The same will hold true at the regional and local level, as our efforts make people more aware of the richness and importance of their own traditions.

Equally important, however, is our plan to preserve this information in permanent form for scholars and for the public. We intend to sponsor, or to arrange for the publication of, scholarly catalogues, documentary histories, recordings and films; other data not appropriate for such publications will be retained in archival form or in computer banks for the use of future generations. We believe that these Smithsonian Bicentennial Inventories will reveal as never before the full scope of our cultural achievements during the first two centuries of our history.

During the years between now and 1976, we will also be engaged in research of a narrower kind, focused directly upon the topics of our special Bicentennial exhibits. Projects of this sort will include research on all the portraits of George Washington, on the life of a New England seaport in the mid-18th century, on the life of a midwestern town in the mid-19th century, and on the contributions of various ethnic groups to American civilization. Here, too, we intend that the fruits of this research shall be made available to the public in permanent form, drawing upon our exhibits for illustrative material.

National Programs

We share the conviction of President Nixon and the American Revolution Bicentennial Commission that "the commemoration be national in scope, seeking to involve every state, city and community." For our part, we are determined that each of our Bicentennial activities, in addition to drawing upon and reflecting the entire nation, shall also bring benefits to as many areas and people as possible.

Concretely, this means that in the conception and design of all our Bicentennial exhibits and performances, we will bear in mind the need to create counterparts that can travel throughout the country during the Bicentennial Era. Drawing upon the experience and capabilities of our Traveling Exhibition Service, and upon the talents and imagination of our Office of Exhibits, we intend to offer to American museums, schools, historical societies, and other organizations a rich selection of exhibitions and performances related to our general theme, The American Experience.

Table I
Bicentennial Activities and Budget Forecast
(in thousands of dollars)

	1971	1972	1973	1974	1975	1976	1977	1978
Exhibitions and performances ..	\$130	\$130	\$350	\$ 425	\$ 525	\$ 825	\$ 400	\$ 50
Research and publications....	200	200	250	350	400	200	75	50
National programs.....	50	50	100	200	300	400	700	100
Administration ..	20	20	25	25	25	25	25	25
Total	\$400	\$400	\$725	\$1,000	\$1,250	\$1,450	\$1,200	\$225



SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

ENVIRONMENTAL SCIENCE PROGRAM

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>3</u>	<u>5</u>	<u>8</u>
11 Personnel Compensation.....	\$ 27,000	\$ 69,000	\$ 96,000
12 Personnel Benefits.....	2,000	6,000	8,000
21 Travel & Transp. of Persons	10,000	30,000	40,000
22 Transportation of Things			
23 Rent, Comm. & Utilities ...			
24 Printing & Reproduction.....			
25 Other Services	61,000	70,000	131,000
26 Supplies & Materials	10,000	20,000	30,000
31 Equipment	40,000	30,000	70,000
41 Grants			
TOTAL.....	<u>\$ 150,000</u>	<u>\$ 225,000</u>	<u>\$ 375,000</u>

Analysis of Total

Pay Increase			
Program	\$150,000	\$225,000	\$375,000

Specification of Increase (Program):

Continued Development of Institutional Program (5 positions, \$225,000)

In fiscal year 1971, Congress authorized \$150,000 to enable the Institution to muster its varied resources and expertise in basic ecological research toward the objective of developing biological and physical data which will permit the Nation to evaluate and ultimately predict the consequences of changes to the environment. This approach is essential to making the best decisions possible for rational and productive management of the environment. In the past many ecological changes have been attributed to man's influence because of ignorance of fluctuations in natural cycles; an ignorance which has often led to counterproductive measures in dealing with environmental problems. The fiscal year 1971 amount is being directed toward three activities: (1) the organization of an interdisciplinary program and establishment of a continuing mechanism for its operation; (2) the selection of sites of highest priority for study; and (3) the implementation of interrelated studies at these sites.

In fiscal year 1972 the Smithsonian Institution is requesting an additional \$225,000 to carry out its environmental program. This consists of a long term study of a marine shallow-water system and that of a tropical forest. A study of these two systems is given a high priority by the Smithsonian and is consistent with the recommendations of the International Biological Program. In so doing, the Institution is following the intent of Congress as expressed in Public Law 91-438. A total of five scientific specialists will be appointed on a short term basis to provide specialized expertise as required (\$75,000) and provide related support funding of \$150,000.

ENVIRONMENTAL SCIENCES PROGRAM

1970 Actual	0
1971 Estimate	\$150,000
1972 Estimate	\$375,000

The Smithsonian Institution has unique capabilities including experienced personnel, the largest collections of plants and animals in the world, with detailed distribution and abundance data required, as a basis for any effective global environmental monitoring system. The Smithsonian has the capability to measure natural and man-induced variation in the characteristics of solar radiation reaching the earth and the causes of such variations. The Institution is studying, as a function of time, various biological correlates. These studies are facilitated because it has permanent and protected field-research sites in both temperate and tropical zones. In addition the Smithsonian enjoys particularly favorable relations with its scientific colleagues and institutions in virtually every country of the world.

Environmental Science Program activity during fiscal year 1971 is limited to such priority items as monitoring rates of biological and physical change and using plants and animals as benchmarks and bioindicators in the establishment of environmental standards. The major objectives of the fiscal year 1972 program, for which a funding of \$375,000 is requested, are to study selected tropical and temperate areas to understand all the factors contributing to the fluctuations in populations. This will be done in the following manner:

- a. by monitoring and evaluating the physical and chemical environments of selected study sites.
- b. by studying the biology and quantitative distribution of principal organisms at these sites.
- c. by studying the inter-relationships of the environment with these organisms and man.

Need for Increase--With its commitments to: identification and assessment of the components of man's natural surroundings and of his cultural development; monitoring of change for predictive purposes; and education at all levels of public interest, the Institution will concentrate on two subprograms during fiscal year 1972.

- A long term comparative study of shallow water marine environments at those sites selected for continuing study \$155,000
- Establishment of benchmarks in terrestrial environments at the selected sites. \$70,000

This plan of work is given high priority by the Smithsonian and is consistent with the recommendations of the International Biological Program and with Public Law 91-438.

1. Shallow Water Marine Environments (3 positions, \$155,000)

Drastic, ecological changes are occurring in many tropical and temperate shallow water areas throughout the world. Some scientists attribute these changes to man's interference with the natural environment but others caution that they may be wholly natural. Should the changes be natural, efforts to reverse or halt their effects may do more harm to the world's biological systems than permitting them to proceed without alteration. An evaluation of the origin of these changes cannot be made without a thorough understanding of the fluctuations and ecology of the organisms involved.

Although many scientists throughout the world are studying the animals and plants in the near-shore, marine environment, these studies are fragmented and are made independently of each other. A coordinated study in selected areas susceptible to detailed examination is essential for an understanding of the immense biological complexity and structural variety involved. The information and methodology developed from such studies will have application to more extensive environments, leading eventually to an understanding of the problems as broad as whole continental regions. All researchers will apply their particular expertise to the primary site(s), but some investigators will need to make complementary studies elsewhere to validate their primary-site data.

The development of this baseline information and its correlation with data already available in the National Collections, accumulated over many years, will enable the scientific community to identify and design solutions for the environmental problems that grow increasingly critical.

The professional staff of the several Smithsonian science bureaus (National Museum of Natural History, Smithsonian Tropical Research Institute, Radiation Biology Laboratory, Chesapeake Bay Center for Environmental Studies, National Zoological Park, and Smithsonian Astrophysical Observatory) will perform the bulk of these studies, in collaboration with highly qualified scientists drawn from other institutions on short-term appointments to provide specialized expertise as required. The populations of marine species and their ecology will be determined and monitored for long periods.

For this portion of the program, an additional \$155,000 is requested to fill on a term basis, three positions (\$39,000) and to provide necessary supplies, equipment, and materials to undertake the studies (\$116,000).

2. Terrestrial Environments (2 positions, \$70,000)

The last large land area available for occupation and development by man lies in the tropical zones of the world. In the New World tropics, destruction of the land is rampant and ecological data that would permit intelligent management is non-existent. It is important that these problems be attacked now, before rapidly expanding populations, industrialization, and urbanization remove all options presently available. Therefore, the first phase in this necessarily long term research project will be directed to a study of the New World tropics, with comparative studies being made in temperate zones and in tropical areas of the Old World to validate the conclusions drawn. This approach will greatly expand the value and increase the usefulness of the environmental data acquired in each of the phases of the project.

Historically, there has been a long-standing scientific interest in the Smithsonian Institution concerning tropical plants and animals and their interrelationships. The millions of documented specimens in the National Collections, the resources of the Smithsonian Tropical Research Institute, and the associated scientific expertise that has been developed in the Smithsonian Institution constitute a unique national resource. It will be used fully in this integrated environmental subprogram to obtain information essential to the development of plans for the most effective long-term utilization of the land.

Studies of variations in physical factors such as solar radiation, rainfall, temperature, and nutrients will be correlated with fluctuation in biological systems such as primary productivity (plant growth), secondary productivity (amount and rates of consumption of plants by animals), and nutrient cycling (decomposition of organic matter and soil production).

Studies of soil organisms, of vertebrate animals, insects, and of plant life will be conducted in coordination with monitoring of natural light quantitatively and qualitatively, of rainfall, temperature, animal behavior, and seasonal fluctuations in populations of both plants and animals. What will be sought is a number of reliable biological indicators that will provide a maximum amount of information about the structure and function of the terrestrial environments.

For this portion of the program an additional \$70,000 is requested to fill on a term basis, two positions (\$36,000) and to provide necessary supplies, equipment and materials to undertake the investigations (\$34,000).

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

MAJOR EXHIBITIONS PROGRAM

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>0</u>	<u>0</u>	<u>0</u>
11 Personnel Compensation.....\$		\$	\$
12 Personnel Benefits.....			
21 Travel & Transp. of Persons 0		5,000	5,000
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction..... 0		30,000	30,000
25 Other Services 0		300,000	300,000
26 Supplies & Materials 0		60,000	60,000
31 Equipment 0		130,000	130,000
41 Grants			
TOTAL.....\$ 0		\$ 525,000	\$ 525,000

Analysis of Total

Pay Increase	0	0	0
Program	0	\$525,000	\$525,000

Specification of Increase (Program):

World of Living Things (\$525,000)

The Smithsonian has designed a major exhibition on the interrelated laws of nature. The purpose of this exhibition, called the World of Living Things, is to educate and stimulate the public on the balance of the natural environment, and action that must be taken to insure a livable environment on earth. Space for this exhibition now exists in the Natural History Building which will have some 4 million visitors a year. Plans for this exhibition have been completed. The Institution however, does not have the funds for its production and installation. An amount of \$775,000 will be required, of which \$525,000 are requested in fiscal year 1972. The exhibition will be completed in 18 months after the initial appropriation of funds.

MAJOR EXHIBITIONS PROGRAM
WORLD OF LIVING THINGS

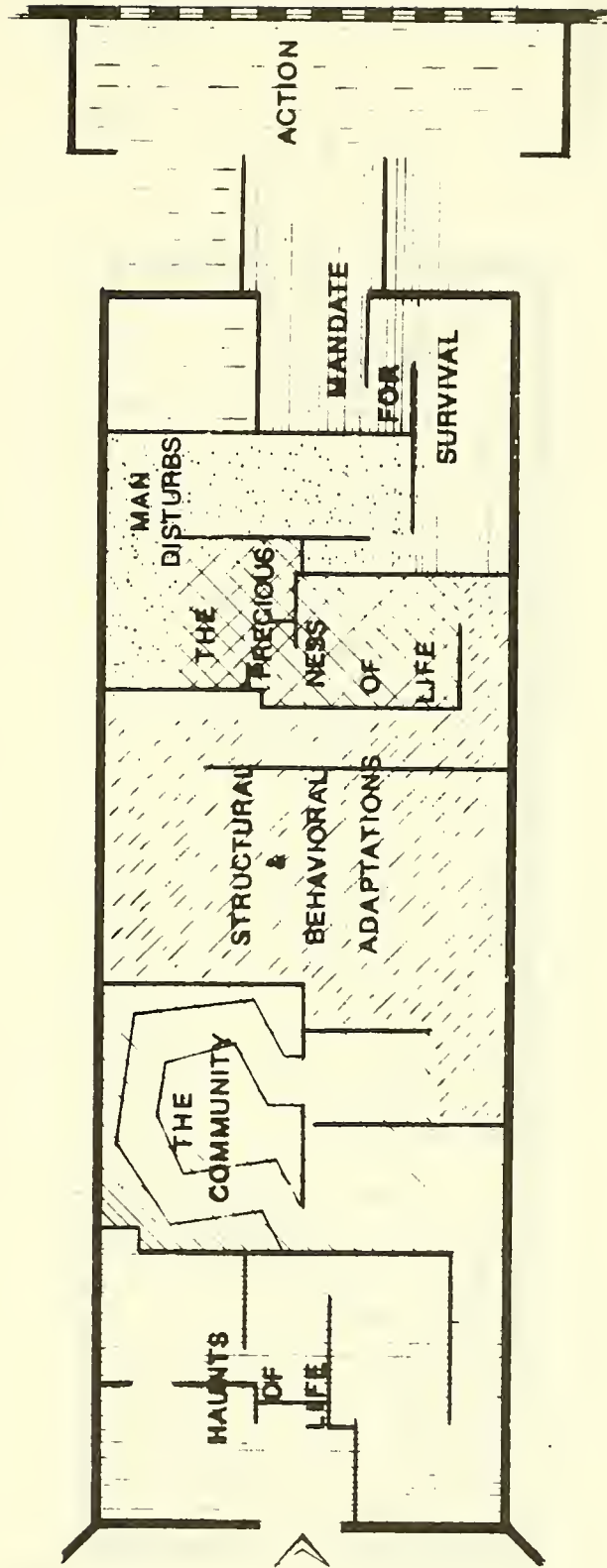
1970 Actual.....\$0
1971 Estimate.....\$0
1972 Estimate.....\$525,000

A major exhibition on the interrelated "laws of nature" is designed which will include both an introduction to ecology and the exposition of worldwide environmental balances and imbalances. Issues and options will be presented to the visitor with the opportunity for him to react to them and to see and consider the consequences of his choices. Plans and sketches of this exhibition are shown on following pages.

Three years of development have been devoted to the planning of this exhibition. Science writer Peter Farb, working with Smithsonian scientists and exhibition and communication specialists, has produced the specifications for a significant educational exhibition. The objective is to stimulate the hundreds of thousands of visitors to the Museum of Natural History to participate in conservation programs and to inform them how to express and act upon their concern. About 4,000,000 visitors a year will view this exhibition. It will continue with changes for years of current usefulness.

The exhibit will combine modern methods of communication through exhibits and the authority of the Museum's scholarly scientists. It will be designed for experimentation, testing, and development of its effectiveness as its use is observed. It will have the flexibility to be up-dated as environmental sciences evolve. It will have both present and future values in the critical effort to insure a livable environment on earth. It will put the most significant of the Museum's vast collection resources in the service of ideas explaining a vital problem of our times.

Space for this exhibition now is available in the Natural History Building in a central location immediately off the Rotunda and extending to the Constitution Avenue side of the building. For the production of the exhibition \$525,000 will be required in fiscal year 1972 and \$250,000 in fiscal year 1973. The exhibition will be completed in 18 months after the initial appropriation of funds. The \$525,000 required in fiscal year 1972 will be used as follows: travel (\$5,000), printing and reproduction including descriptive labels and related educational materials associated with the exhibition (\$30,000), other services (\$300,000), supplies (\$60,000), and equipment (\$130,000).



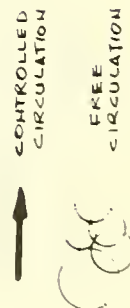
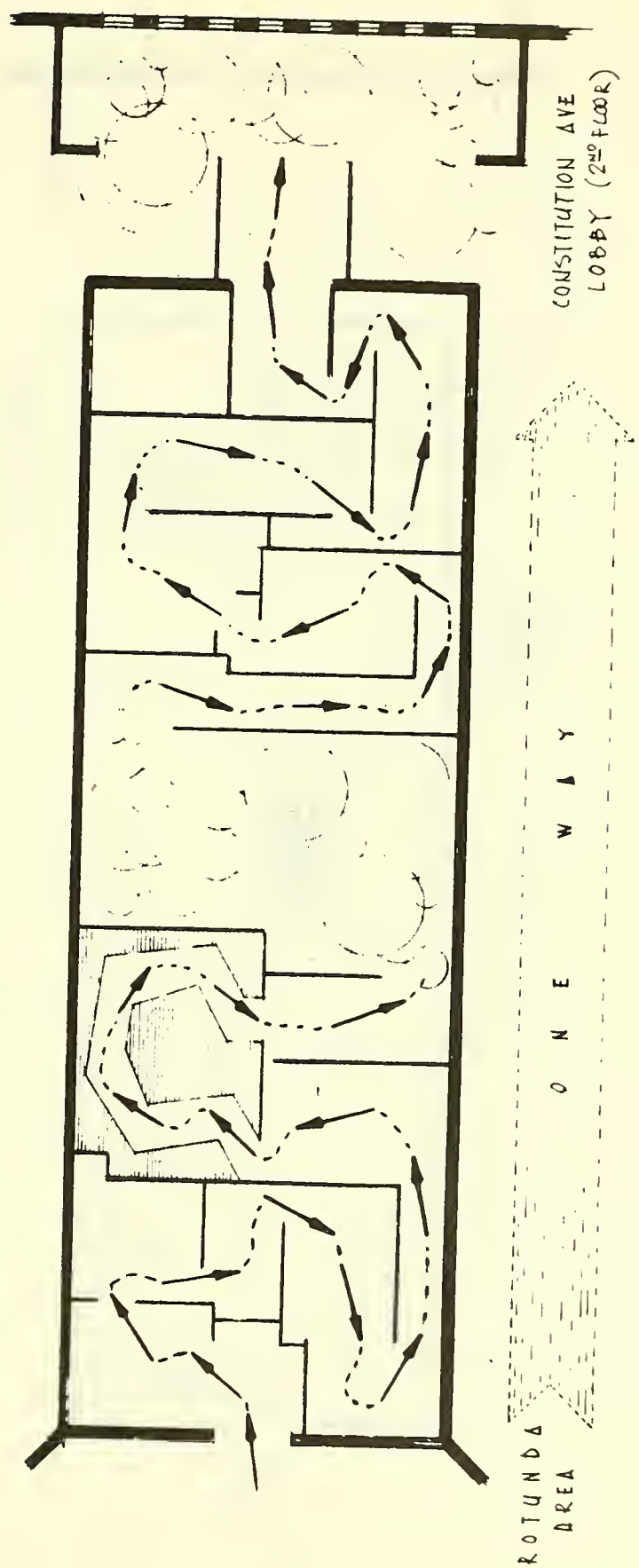
World of Living Things

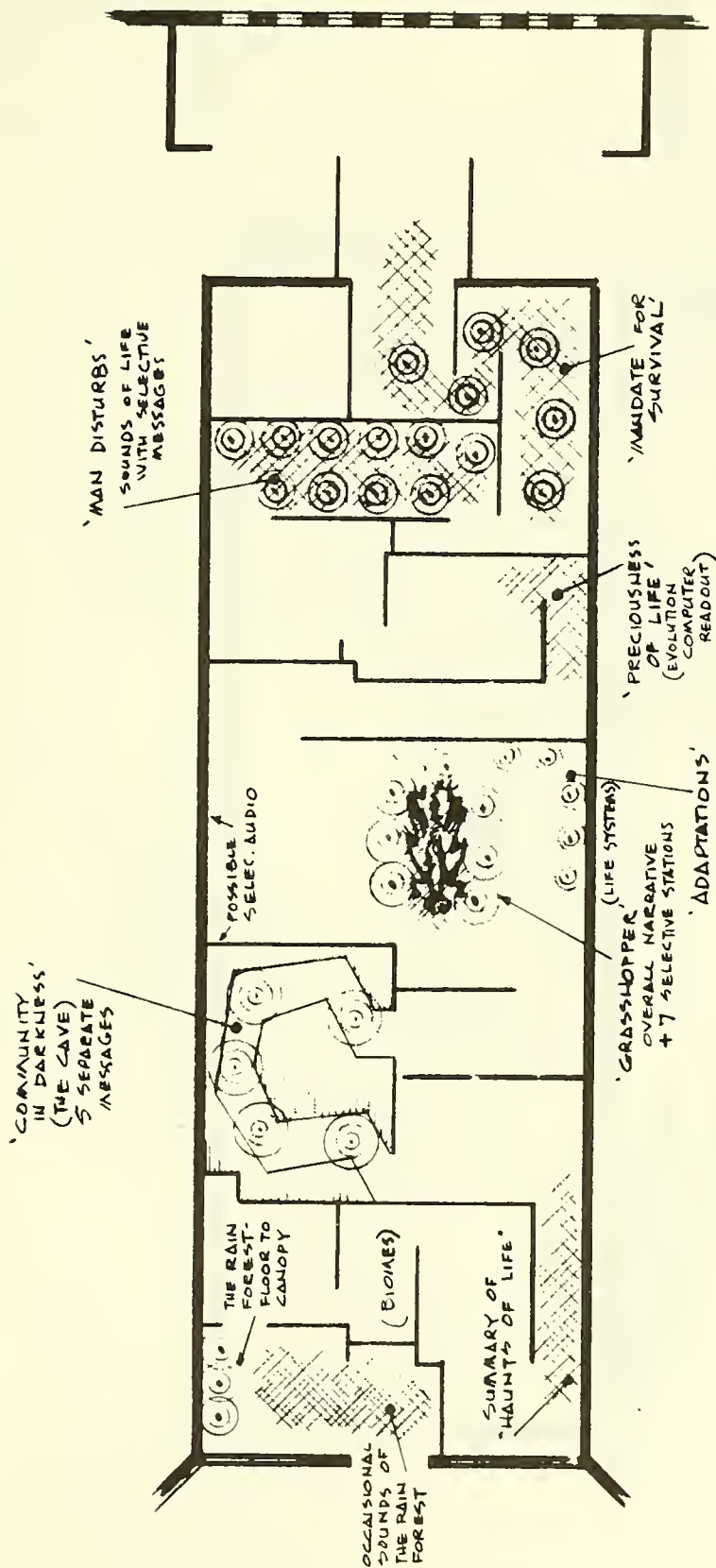
HALL 10

World of Living Things

FLOW PATTERN

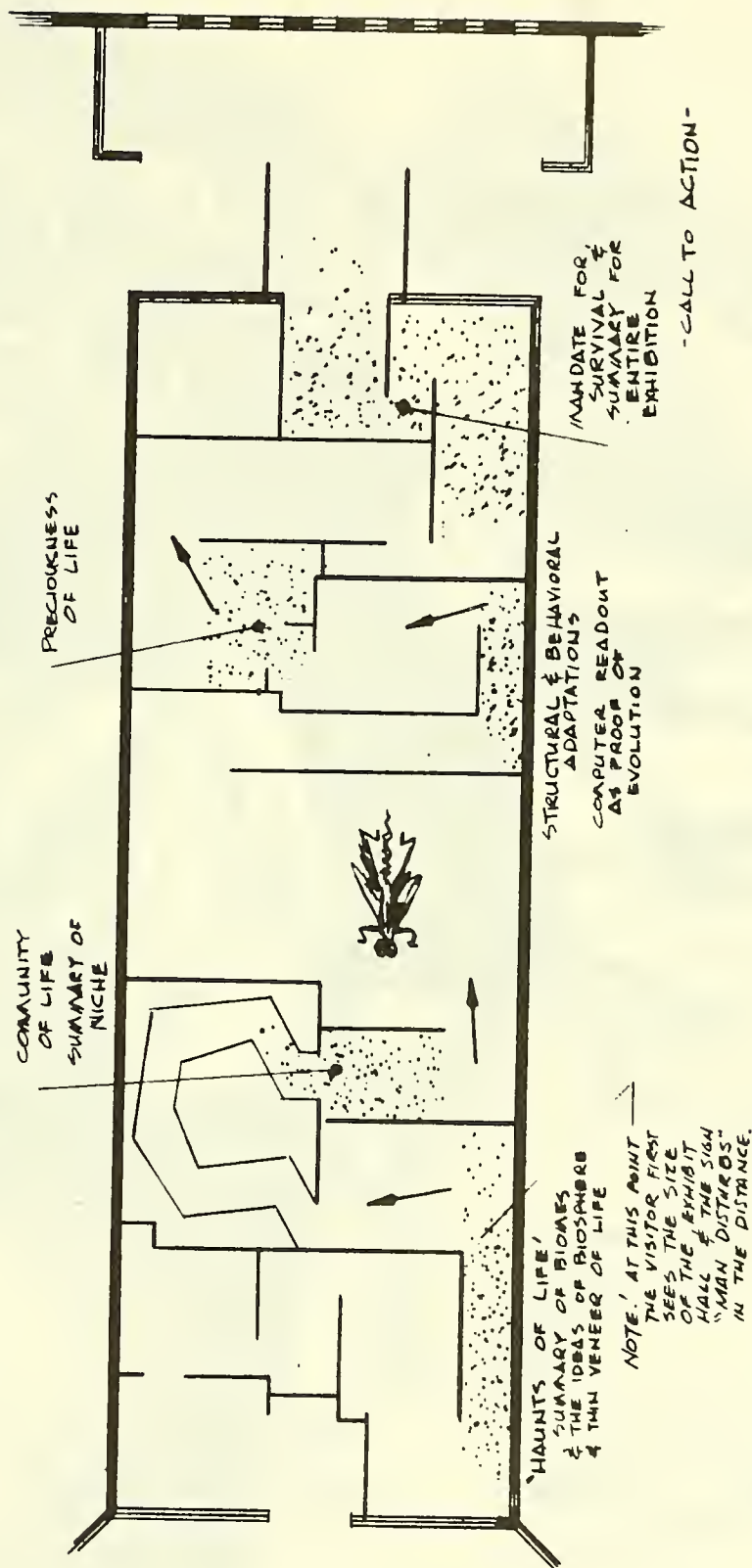
HALL 10





World of Living Things

AUDIO HALL 10

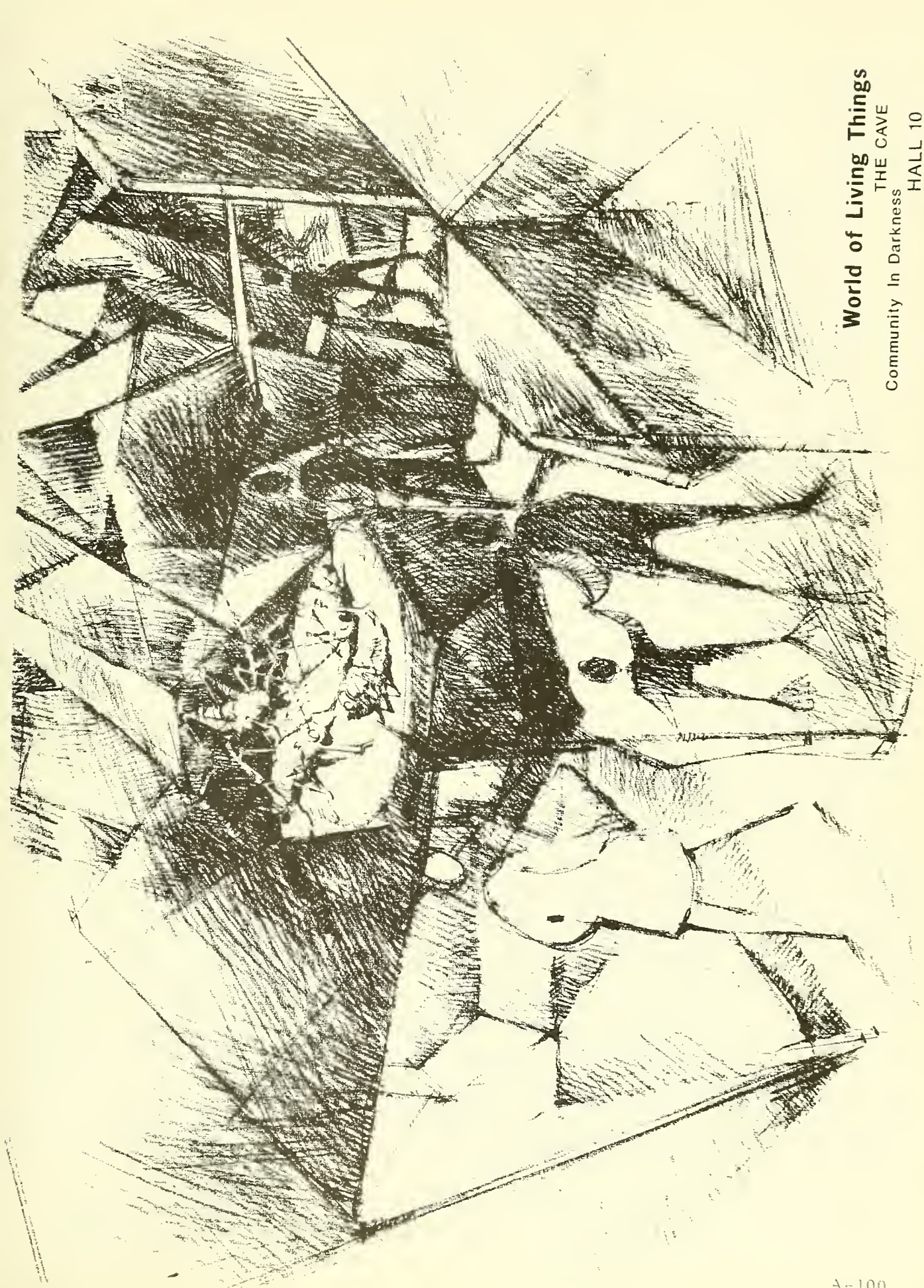


World of Living Things

SUMMARY AREAS

HALL 10

World of Living Things
THE CAVE
Community In Darkness
HALL 10



SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

NATIONAL MUSEUM ACT PROGRAM

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>0</u>	<u>3</u>	<u>3</u>
11 Personnel Compensation.....	\$0	\$ 25,000	\$ 25,000
12 Personnel Benefits.....	0	2,000	2,000
21 Travel & Transp. of Persons	0	20,000	20,000
22 Transportation of Things	0	18,000	18,000
23 Rent, Comm. & Utilities	0	15,000	15,000
24 Printing & Reproduction.....	0	75,000	75,000
25 Other Services	0	820,000	820,000
26 Supplies & Materials	0	10,000	10,000
31 Equipment	0	15,000	15,000
41 Grants			
TOTAL.....	<u>\$0</u>	<u>\$ 1,000,000</u>	<u>\$ 1,000,000</u>

Analysis of Total

Pay Increase	0	0	0
Program	0	\$1,000,000	\$1,000,000

Specification of Increase (Program):

Support of the Educational and Cultural Resources of the Nation's
Museums (3 positions, \$1,000,000)

The Nation's museums are in trouble. Thirty years ago their attendance totaled 50 million annual visits. Today it probably approaches 300 million visitors. Their financial resources have been strained to the breaking point. Many of these museums no longer can preserve and exhibit their national treasures of works of art, historic objects, and scientific collections without substantial national aid. Yet times call for a sharp increase in the educational and cultural opportunities which these museums are uniquely equipped to provide. Public Law 91-629 approved December 31, 1970, reauthorized appropriations for the National Museum Act through fiscal year 1974 and funding of \$1,000,000 to the Smithsonian Institution each year. This funding is requested for fiscal year 1972 which will be used approximately as follows: studies of museum cataloging and data access (\$240,000); studies of museum laboratory centers to provide conservation and other services (\$130,000); training of museum personnel (\$300,000); research in museum exhibits and other communications (\$150,000); preparation of manuals and other materials on museum techniques (\$75,000); and for program planning and administration (\$105,000).

NATIONAL MUSEUM ACT

1970 Actual.....\$0 1/
1971 Estimate.....\$0 1/
1972 Estimate.....\$1,000,000

Public Law 91-629 approved December 31, 1970, reauthorized appropriations for the National Museum Act through fiscal year 1974 and funding of \$1,000,000 each year to the Smithsonian Institution of which \$100,000 each would be provided to the National Endowment for the Arts and to the National Endowment for the Humanities to assist their related museum assistance activities.

An appropriation of \$1,000,000 is requested for the purposes of the National Museum Act in support of the Nation's museums.

Need for Increase--The justification for the programs authorized by the National Museum Act is found in the following extracts from America's Museums: The Belmont Report:¹

This is a report on a priceless national treasure--the works of art, the historic objects and the scientific collections in the custody of America's museums. In scope and magnitude this treasure is unmatched by that of any other nation, and it has enriched the minds and lives of countless Americans. Once lost, it can never be replaced.

Today the institutions which have this treasure in their custody are in serious trouble. The totally unpredicted popular success of American museums has strained their financial resources to the breaking-point, has compelled them to deny service to much of the public and will require many of them, unless help comes, to close their doors. Museums have arrived at the point where they can no longer preserve and exhibit the national treasure without substantial national aid.

* * * * *

Thirty years ago America's museums reported that their attendance totaled 50 million visits a year. Today the total is known to be in excess of 200 million and probably approaches 300 million. Museum attendance has increased much faster than has the population of the United States. The increase has been so rapid, and has reached such a level, that museums now have to turn down requests for service. Yet the times call for a sharp increase in the educational and cultural opportunities which museums are uniquely equipped to provide.

* * * * *

Museums base their request to the Federal Government for support on the following grounds:

(1) Museums provide educational and cultural services which no other institutions in the nation either do or can provide.

1/ Approximately \$70,000 over the two year period was appropriated to the Office of the Director General of Museums for activities related to the National Museum Act.

2/ America's Museums: The Belmont Report; a report to the Federal Council on the Arts and Humanities by a special committee of the American Association of Museums: published by the American Association of Museums, Washington, 1969.

(2) A number of museums provide nationwide service on funds which are disproportionately local in origin.

(3) Though museums cooperate in anti-poverty and other Federal programs, they have not received appropriate reimbursement for this service from the Federal Government.

(4) Though the resources of museums are made available to schools, colleges, universities and individual scholars for research that is financed by the Federal Government, the Government has not helped museums meet the costs incidental to such service.

(5) The collections, facilities and staffs of museums produce research which the Government uses and the value of which is recognized by Federal departments and agencies. Increased Federal support for such research is in the national interest.

(6) The Federal Government has an obligation, as yet unmet, to assist in preserving, maintaining and wisely utilizing the national treasure in museums on behalf of all the American people. This report does not suggest that the Federal Government assume dominant responsibility for the financial support of America's museums, but it does suggest that the time has come for the Government to assume a partnership role.

The report lists ten major needs of museums as deserving priority, and divides them into two groups.

The first group includes needs which bear on the ability of museums to reach more people. These needs concern:

Nationwide services financed largely out of local funds;

Services provided by museums for the Federal Government without appropriate reimbursement;

Rehabilitation, expansion, modernization of museum buildings, equipment and exhibits to meet present and future public demands;

The training of professional and technical personnel required by museums;

Research by museums on ways of improving the quality and usefulness of museum services for the educational system and for the general public;

Expansion of traveling exhibits to reach people who do not have ready access to museums;

Increased use of mass media, including television, to make the resources of museums available to more people.

The second group of needs relates more particularly to essential internal functions of museums. These needs concern:

The financing of basic research in museums and the share of the responsibility to be borne by the museums and by the Government;

Special research into methods of conserving for posterity the art, history and science collections in museums, and provision for laboratory facilities, equipment and staff for such research;

An inquiry to determine the specifications of a computer network which would provide a modern method of storing and retrieving information on museum collections, which now are vast.

To meet these ten priority needs, museums are already devoting as much of their financial resources as they possibly can. They cannot begin to make a dent in these needs, however, without the help of the Federal Government.

While it is not possible at this time to state with precision how large a Federal contribution is required, preliminary estimates put it somewhere between \$35 million and \$60 million for the first year. At present, Federal grants of all kinds to museums (apart from the appropriations to The Smithsonian Institution) total only a fraction of \$35 million, and most are limited to scientific research of special interest to government departments and agencies.

The Committee on Museum Needs believes that the existing machinery of the Federal Government can go a considerable distance in meeting the priority needs of museums, if funds are appropriated and if certain amendments to statutes already on the books are made. Accordingly, the Committee submits the following recommendations:

That the National Museum Act be funded with an appropriation of at least \$1 million for the first year;

That grants to museums from Federal Departments and agencies already concerned with museums be sharply increased;

That the Federal Government, as a matter of basic policy, recognize museums as educational institutions, working in formal affiliation with elementary, secondary, undergraduate and graduate level institutions;

That the Federal Council on the Arts and the Humanities, in furtherance of the above basic policy, be asked to study the problems of museums further and to make recommendations with reference to existing legislation to the end that the Federal Government may meet its obligations to museums;

That this report be published for the information and use of all those concerned about the future of museums.

* * * * *

Once the Federal Government decides as a matter of policy to provide financial support for museums as it does for other educational institutions, what government machinery does it use? What agency or agencies can most logically and efficiently implement the policy?

For years museums naturally have had a close working relationship with the Smithsonian Institution. The Smithsonian, however, has not been a channel for massive Federal funds. Such Federal grants as have been made have come mainly from the National Science Foundation and from certain other discipline-oriented departments or agencies. The Office of Education also has been involved through its support of schools and other educational institutions. Increasingly the National Endowments for the Arts and Humanities have become concerned with the problems and needs of museums, but they have yet to receive funds commensurate with the needs.

While it is true that museums are mentioned along with other educational institutions in some existing legislation, the mention has gone almost unnoticed. As a practical matter it is extraordinarily difficult for a museum to obtain any of the benefits of Federal legislation enacted in the interests of educational institutions.

* * * * *

For the present this report suggests that the existing machinery of the Federal Government be employed to meet the urgent needs of museums. There is already on the books a National Museum Act. There are several Federal Departments and agencies which can allocate funds to museums. There are other departments and agencies which could make funds available to museums if existing legislation were amended.

* * * * *

Consider first the Smithsonian and the National Museum Act. Within the Smithsonian the United States National Museum is the unit entirely oriented towards cooperation with other museums and their associations. Its purpose is to work cooperatively with museum professionals in the United States and abroad to increase the effectiveness of museums in the performance of their scholarly and public functions.

The Smithsonian has not, however, had massive funds or grants to distribute to museums for facilities or acquisitions or for the support of continuing museum programs. Whether or not it might be assigned such responsibilities in the future, it is clear that a number of the needs relating to museums, as museums, can be addressed immediately under the National Museum Act.

This is said because there are other services to museums which the Smithsonian has long performed and which might well be expanded. Long before there was a National Museum Act the Smithsonian was supporting service programs responsive to wide museum needs. Joseph Henry, the first Secretary, organized the international exchange of information and publications between institutions and museum professionals. He gave grants for field work to non-Smithsonian anthropologists and published the works of others. Successive administrations have continued the Smithsonian's concern with broad museum problems.

* * * * *

The National Museum Act confirms the tradition of museum services performed by the Smithsonian and names the National Museum to carry them on with the cooperation of the museums of the country. To date the Congress has not made appropriations to implement the Act. An appropriation of at least \$1 million for the first year is essential. When an appropriation is made available, as the authors of this report

urge, the American Association of Museums and its member institutions can make more rapid progress in establishing museum standards and methods of accreditation, can aid experiments with museum consortiums and mutual assistance projects, and can help museums evaluate and improve the educational value of their programs.

* * * * *

In conclusion, the Committee on Museum Needs submits the following recommendations:

That the National Museum Act be funded with an appropriation of at least \$1 million for the first year;

That grants to museums from Federal departments and agencies already concerned with museums be sharply increased, specifically the National Endowment for the Arts, the National Endowment for the Humanities, the U. S. Office of Education, and the National Science Foundation;

That the Federal Government, as a matter of basic policy, recognize museums as educational institutions, working in formal affiliation with elementary, secondary, graduate and undergraduate level institutions;

That the Federal Council on the Arts and the Humanities, in furtherance of the above basic policy, be asked to study the problems of museums further and to make recommendations with reference to existing legislation to the end that the Federal Government may meet its obligations to museums;

That this report be published for the information and use of all those concerned about the future of museums.

The funds requested for Museum Act programs are to meet the demonstrated needs of America's museums--not those of the Smithsonian Institution. The urgency of the needs is known by the Smithsonian from daily experience in responding to requests for aid and advice. The urgency has been repeatedly confirmed in discussions with the Director of the American Association of Museums representing the museum profession. An advisory committee of museum professionals selected in collaboration with the American Association of Museums will recommend procedures and policy for carrying out the high priority programs to which these estimates are addressed. Examples of the needs are suggested by the following program areas.

Studies have begun on the development of programs and technology to catalog museum holdings in science, history, and art on a national level. All require more funds to continue the studies and to start the cataloging in coordinated and compatible systems. Museum professionals and the scientists, historians, and other scholars who use museum collections in their research are

much concerned with the need to make the museum collections more accessible through more comprehensive cataloging. All are concerned that the systems determined upon will be adaptable to computer storage compatible with systems used in all parts of the United States and other countries and that the computer program will be responsive to the needs of students, scholars, writers, and administrators, and be equally usable for those concerned with the circulation of collections and the production of traveling exhibitions.

To provide support for studies of computer cataloging and data access conducted by consortiums of museums and museum associations there will be required in fiscal year 1972, in other services..... \$240,000

To meet a number of the described needs of museums for conservation, for exhibitions, for museum-school materials, for television and radio productions based on collections and activities, it has been proposed that museum laboratory centers be established in various locations throughout the United States. These laboratory centers would be supervised and supported in part by groups of museums or by regional conferences of museums to provide services and work on a cost-sharing basis. To determine the feasibility of such laboratory centers including the volume and nature of the support available and the volume and kinds of services museums would require from them, a study would be organized and supervised by the American Association of Museums. To support the study and to conduct pilot tests of services to museums there is required in other services \$30,000 for the study and \$100,000 for pilot tests..... \$130,000

The most frequently expressed need of America's museums is for trained personnel at both the professional curatorial level and the museum technician grade. Three categories of training require funding. One includes the several varieties of combined museum-university courses for graduate students preparing to enter museum work in curatorial positions in science, art, or history. Another category of training is required for upgrading the skills of museum career personnel already serving in curatorial positions in smaller museums who would be brought up-to-date on the latest doctrines and techniques of museum work through work training in more advanced museums. The third category is for the work training of museum technicians in science, history, or art, and in conservation, exhibition, museum education, and in the management of museum collections and library and archival resources.

Training in these categories and subjects will vary in time from 3 to 12 months with an estimated average cost of \$6,000 a trainee including the support of the trainee and the expenses of the museums and universities providing the training. To train in fiscal year 1972, 50 trainees will require in other services.....\$300,000

Systematic and imaginative research is required to improve the performance of museums. Inquiry is needed into means to improve the public visitors' museum experience, to make exhibits more effective in communicating with the viewer, to enable museums to be of greater use to schools, colleges, and universities, to make museum resources available to disadvantaged people and communities, and to experiment, develop, test, and evaluate all of the museum's varied functions. To support and accelerate research in museum opportunities and practices in cooperation with museums, and their associations, there is required \$150,000 for other services for five research programs.....\$150,000

A great need exists for manuals of instruction on the design and preparation of exhibits, on conservation of museum objects, on museum lighting, on museum education, on museum security, and on museum administration. The opportunity to publish manuals will stimulate experts in the field to contribute manuscripts based on their experience and knowledge. The research and surveys proposed will produce much of value for printing and distribution. For the printing and reproduction of manuals, photo essays, film strips, and other materials requires in fiscal year 1972 \$75,000

For the administration of the program, a program manager, a secretary-stenographer, and a clerk-typist are required, estimated to cost in salaries and benefits\$27,000

An advisory committee will be formed with the advice of museum directors and museum associations to advise on the programs to be funded.

To support the staff and the advisory committee, it is estimated that there will be required in fiscal year 1972, for travel \$20,000; for transportation of goods \$18,000; for communications and data processing \$15,000; for supplies \$10,000; and for equipment \$15,000 \$78,000

Total	<hr/> \$1,000,000
-------	-------------------

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

ACADEMIC AND EDUCATIONAL PROGRAMS

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	20	3	23
11 Personnel Compensation.....	\$ 181,000	\$ 26,000	\$ 207,000
12 Personnel Benefits.....	14,000	1,000	15,000
21 Travel & Transp. of Persons	10,000	4,000	14,000
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....			
25 Other Services	387,000	88,000	475,000
26 Supplies & Materials	3,000	2,000	5,000
31 Equipment	4,000	5,000	9,000
41 Grants			
TOTAL.....	\$ 599,000	\$ 126,000	\$ 725,000

Analysis of Total

Pay Increase	\$12,000	\$11,000	\$23,000
Program	\$587,000	\$115,000	\$702,000

Specification of Increase (Program):

Graduate Studies (\$55,000)

Federal facilities developed for reference and research should serve the universities as auxiliary resources for the advanced training of students and faculty. To strengthen the Institution's graduate studies program, an increase of \$24,000 is requested to support one postdoctoral appointment in environmental sciences, and one in systematic biology; \$11,000 are requested for two pre-doctoral stipends in American history and art; and \$20,000 are sought for the purpose of creating internship appointments for graduate students to work in specialties recommended by their faculty advisors.

Elementary and Secondary Education (3 positions, \$60,000)

Within the present funding levels, the Institution is able to fill only a small fraction of the existing demand for elementary and secondary educational services. The Institution is currently scheduling tours for serving about 100,000 school children in grades 1-12; or one tour per child for about one seventh of the metropolitan area enrollment. This is less than adequate. A planned expansion in this activity has been developed, and to achieve the projected levels, an additional \$60,000 are being requested this year. By 1974, the Institution hopes to be able to accommodate the equivalent of about 250,000 children per school year with at least one scheduled tour. The requested increase would allow extending the services now provided to two new areas, the American Indian, and Technology (2 positions, \$17,000), one additional tour scheduler (\$6,000), three new museum educational traineeships (\$16,000), and additional support costs associated with this expansion (\$21,000).

ACADEMIC AND EDUCATIONAL PROGRAMS

1970 Actual	\$572,000
1971 Estimate	\$599,000
1972 Estimate	\$725,000

A major Smithsonian objective is to make its learning resources available to the formal educational community and to the general public. At the higher education level, the Institution develops and coordinates fellowship programs through a variety of cooperative agreements with the nation's universities. The program promotes research opportunities and advanced study training for doctoral candidates and postdoctoral investigators. Seminars in various curatorial and disciplinary areas are conducted which are central to the interests of the students and the Smithsonian's research efforts. Formal educational activities below the university level are also a responsibility of this program. These include the popular escorted tours for schools, the preparation of teaching guides, lectures, and audio-visual materials. Public use of the educational facilities of the Institution is growing rapidly at all levels of training. The Smithsonian is considered a significant supplementary educational resource by colleges and universities and by elementary and secondary school systems.

A program increase of \$126,000 is requested, including \$55,000 for higher education and research training in four areas, and \$60,000 for expansion of the elementary and secondary educational program. Also requested are \$11,000 for necessary pay increases.

Need for Increase

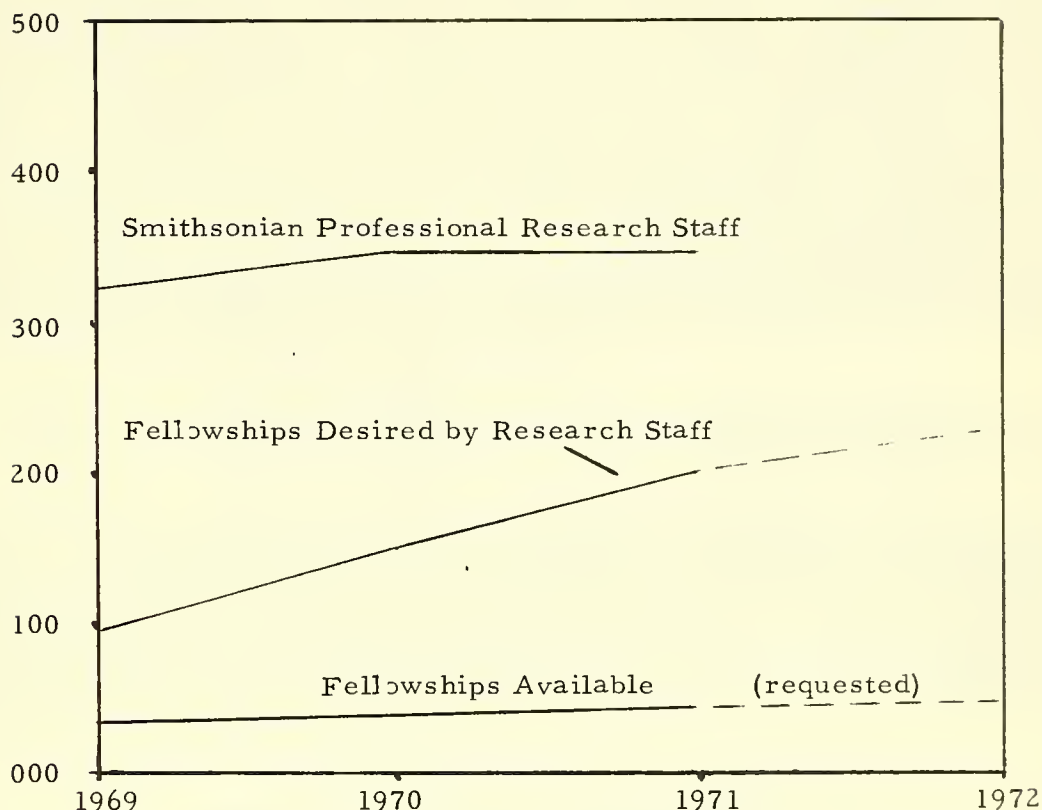
1. Graduate Studies (\$55,000)

The Institution's capacity to supervise visiting investigators has greatly increased since 1967, but the number of stipends available has remained about the same (see Figure 1). With present funds, only 20 Ph.D. candidates can be supported each year, so that the average staff member can expect to supervise a dissertation only once in 17 years. Only 19 postdoctoral appointees can now be supported each year. Stipends for these appointments are allocated in accordance with scholarly discipline. There are only five for 98 Institutional systematic biologists, only two for 28 Institutional specialists in the environmental sciences, and similar shortages through nine areas of study. A list of investigators currently at the Institution is shown on a following page.

Since 1967 the Smithsonian has perfected the administrative procedures necessary for this program and demonstrated that visitors may receive worthwhile training as they complete research projects of high intrinsic worth. As a guarantee of cooperation between the Smithsonian and other research establishments and a contribution to quality training in scarce specialties, the higher education program should be expanded to serve at least twice as many Ph.D. candidates and postdoctoral investigators for a professional staff of the present size (345) and be expanded proportionately with each increase in number of professional staff thereafter. A survey of staff interest has established a willingness to accommodate many more investigators than present funding allows. Consistently more highly meritorious applications for stipends have been received than could be awarded. The Institution has determined that the deficiency to be corrected is \$300,000 per year. This shortage, which has come into existence over the past four years, should be eliminated as rapidly as possible. The first installment on this shortage is sought for fiscal year 1972 in the amount of \$55,000 for stipends; \$24,000 are requested to support one additional postdoctoral investigator in environmental sciences and one in systematic biology; \$11,000 are requested for two additional predoctoral stipends in American history and art. The sum of \$20,000 is requested for internship appointments for graduate students to become associated with the activities and resources of the Smithsonian in

Figure 1

SMITHSONIAN INSTITUTION
Growth in Fellowships Desired By and Available To
Professional Research Staff
Fiscal Years 1969-71, and Estimated Fiscal Year 1972



specialties recommended by faculty advisors in their home institutions. Summer appointments, once supported by private funds, have been discontinued in recent years, and the lack of opportunities for students at earlier stages of their graduate training is keenly felt. The Institution receives many requests to cooperate with university departments which share its interests. It is proposed to develop a system of "cooperative fellowships" whereby each participating university contributes to the student's expenses while at the Smithsonian. The George Washington University has created a "Smithsonian Fellowship" in American Studies, and other universities have indicated a desire to follow suit in this and other fields. The annual cost per student is estimated to be \$2,000. The introduction of a principal of cost-sharing will be a further guarantee of the cooperative character of Smithsonian programs in higher education.

2. Elementary and Secondary Education (3 positions, \$60,000)

Against a background of deepening public concern about the quality of classroom experience, the Institution acknowledges a heavy obligation to draw upon its unconventional information resources to enrich education. As a result of a concentrated effort to increase the use of its exhibit spaces, the number of visits by school classes and teachers escorted by volunteer docents has more than doubled in the two years since 1968. This required the addition of a scheduling

staff and a three-fold increase in the number of volunteer docents. A number of different arrangements are being tried to associate intermediate-level education staff with curators in the bureaus to draw upon the Institution's resources of subject matter in the preparation of tours.

In areas where educational staff and interested curators are lacking, tours cannot be offered. This is the case in technology in the National Museum of History and Technology, biological topics at the National Zoological Park, and oceanography at the National Museum of Natural History. Based upon existing subject matter competence, using tour subjects already developed, the Institution expects in fiscal year 1971 to accomodate a total of 100,000 visits by school children.¹ However, the Institution is capable of serving a much larger children's audience, and the demand is present. The capacity of major exhibit spaces would be over 400 class visits per week (330,000 school children annually) if new subject matter tours could be developed. With the addition of three schedulers, and six staff associates in education over the next three years, the Institution could move from the 1970 actual level of 80 tours per week (about 65,000 annual visits) to over 300 per week (250,000 annual visits) by 1973-74.² Figures 2, 3, and 4 present some historical information on these tours.

¹ Figures are based on an approximate twenty-eight week Smithsonian school tour schedule.

² In terms of the Institution's current funding capability, for every child (grade 1 - 12) taking only one of the scheduled tours during the school year, there are five or six that are not being accommodated at all. Elementary and secondary enrollment in the metropolitan area for the current year is about 650,000. Even if the Institution were presently operating its school tours at the projected 1973-74 level of 300 tours per week, only about 38 percent of the area's youthful audience would be served--with but one visit.

Figure 2 -- Growth of subject matter tours and trained volunteers

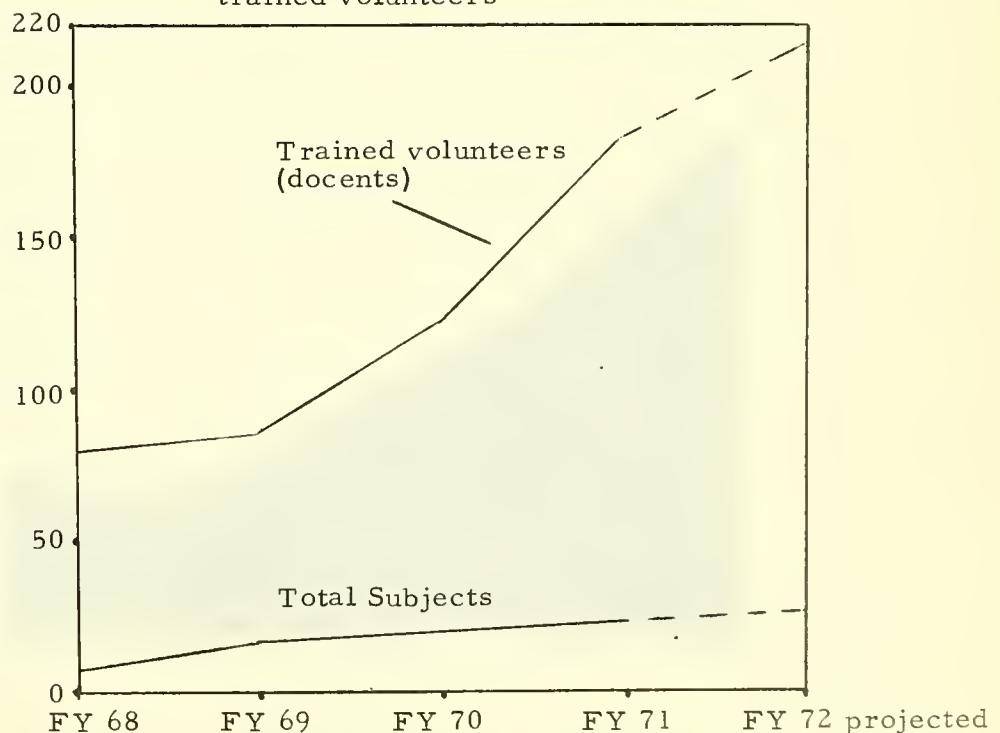


Figure 3 --Number of students serviced by elementary and secondary school tours.

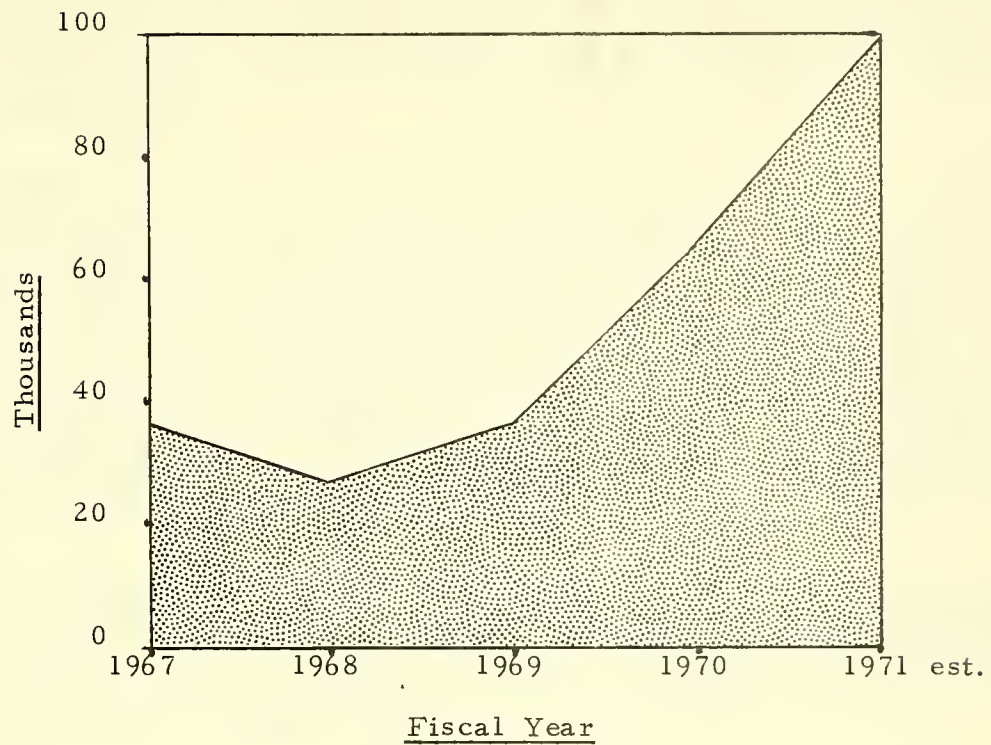
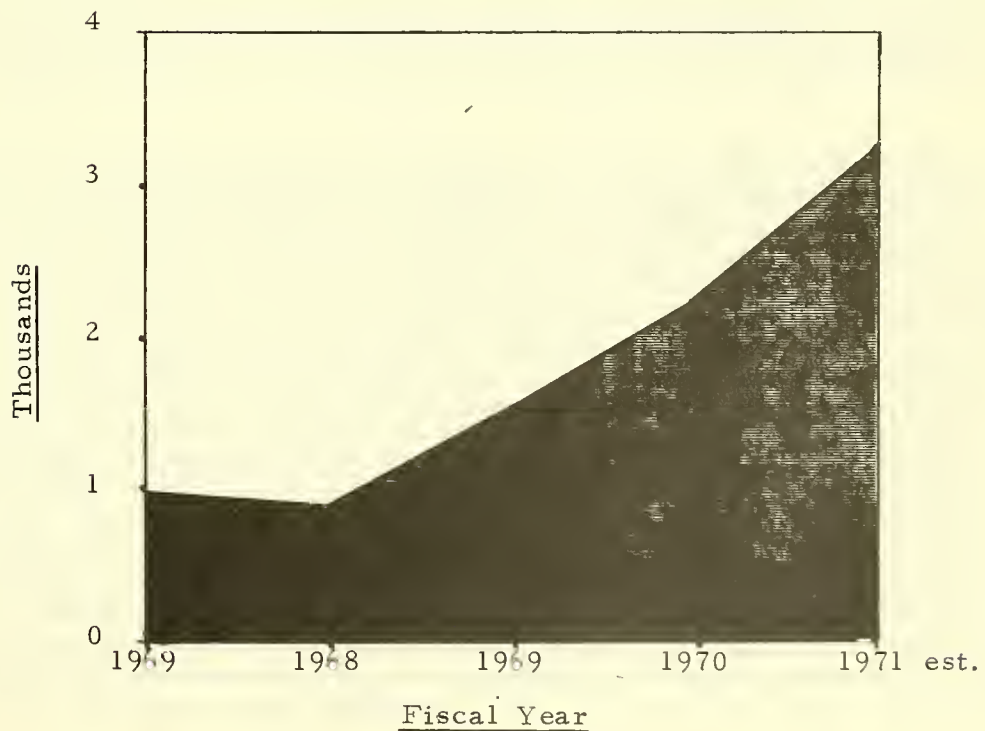


Figure 4 --Number of elementary and secondary school tours provided.



To implement this plan, the Institution requests an increase of \$60,000 in fiscal year 1972 and an approximate like amount in each of the following two years in order to add one scheduler each year, and broaden the range of education staff subject matter by two fields per year (for fiscal year 1972, the new fields would be the American Indian, and Technology). This amount would also support three additional traineeships in museum education and provide funds for direct program costs other than salaries.

It would be difficult to establish an accurate dollar value for the efficient paraprofessional museum teaching services rendered by a corps of some 150 volunteer docents who conducted school tours for 67,650 boys and girls in grades kindergarten through 12 during school year 1969-1970. However, the influence of the professionally competent staff associate whose duties include (1) development of teaching curricula in pertinent subject areas, (2) establishing useful relationships with curators for the purpose of utilizing the Institution's research and collections resources (3) supporting pre-service and in-service training of docents, and (4) continual monitoring of these volunteers to ensure quality control is directly responsible for a personnel multiplier effect which makes the program possible over such a broad range. Each new staff associate would have responsibility for a projected dozen additional docents in new content areas.

The additional tour scheduler will be necessary to accommodate the steadily increasing workload handled by the School Tours Unit as it manages the logistics of matching requests by the nation's schools with appropriate personnel and material resources in the Smithsonian's several museums. The burden of this unit often extends well beyond requests for tours into inquiries for other educational services to school children.

Funds requested for direct program costs are necessary to provide funds for a total operational force of 170 professional and volunteer staff, all of whom have duties which place them in a direct service relationship with the public. Increased demand for external educational services require additional money to support the program of teacher education, docent training, dissemination of information to schools and other museums, and development of audio-visual materials and other teaching aids for enrichment of tours. The Smithsonian considers the utilization of the full range and depth of potential subjects by schools and by visiting classes as being of even greater importance than the attainment of a numerical goal.

The potential importance of museums and other community resources for education in the arts has long been established. The Smithsonian recently completed for the National Science Foundation an assessment of a similar potential in the sciences. Thus, the attainment of full capacity in the use of such a major community resource is a matter of national interest. The attainment of full capacity for class visits within the Smithsonian complex would be a landmark for other efforts underway everywhere in the Nation to draw upon community resources outside the schools for educational purposes. Both the National Portrait Gallery and the National Collection of Fine Arts have undertaken very worthwhile experimental programs in elementary and secondary education. Other new efforts are being planned for the National Museum of Natural History, the National Museum of History and Technology, National Air and Space Museum, and the National Zoological Park. If the novel subject matter of these museums and their non-didactic open qualities finds counterparts in the classroom, museums such as those of the Smithsonian will have performed a distinctive service to education. The Smithsonian program could serve as a benchmark for reference by other metropolitan school systems and museums, a welcome contribution in a frontier area of educational program development where standards for measurement have not yet come widely into use.

The requested \$60,000 would be distributed as follows: two new staff associate positions in anthropology and technology (\$17,000); one additional scheduler (\$6,000); three new traineeships in museum education (\$16,000); and other program support costs (\$21,000).

Name & University	Research Title
PROGRAM IN EVOLUTIONARY AND SYSTEMATIC BIOLOGY:	
<u>O. Sylvester Adegoke</u> U. of Calif., Berkeley	Tertiary paleontology of southern Nigeria and ecology and distribution of living Foraminifera in the Gulf of Guinea
<u>Arnfried Antonius</u> U. of Vienna, Austria	Occurrence and distribution of stony corals in Venezuelan waters
<u>James A. Doyle</u> Harvard U.	Studies on angiosperm pollen and megafossils of the Potomac Group (Cretaceous) of Maryland and Virginia
<u>Miloslav Kovanda</u> Charles U., Prague	Preparation of a monographic electronic data bank of Campanula section Heterophylla
<u>Jerry A. Powell</u> (partial support) U. of Calif., Berkeley	Biosystematic study of Neotropical Sparganothidini (Lepidoptera: Tortricidae)
<u>Kenneth A. Beem</u> U. of Cincinnati	Choctawhatchee Formation of northwestern Florida
<u>David R. Budge</u> U. of Calif., Berkeley	Study of late Ordovician and Silurian rocks and contained coral fauna in eastern Great Basin
<u>Theodore Gary Gautier</u> U. of Kansas	Cryptosome Bryozoa from Permian (Leonardian) of the Glass Mountains, Texas
<u>Eckart Hakansson</u> U. of Copenhagen	The free-living Cheilostomata from the White Chalk of Denmark
<u>Catherine Jane Kerby</u> George Washington U.	A life history study of the polychaetous annelid, <u>Sabella microphthalma</u>
PROGRAM IN ENVIRONMENTAL SCIENCES:	
<u>Clarke Brooks</u> U. of Chicago	Analysis of algal biliproteins
<u>Jack H. Burk</u> New Mexico State U.	Production and energy status of deciduous tree species with regard to annual cycle of energy utilization and standing crop
<u>Stephen I. Rothstein</u> Yale U.	An experimental investigation of host preference in the brown-headed cowbird
<u>Robin Doughty</u> U. of Calif., Berkeley	The feather trade; its cultural and biogeographical significance in England and America
<u>Christen E. Wemmer</u> U. of Maryland	Behavioral concomitants of morphology and the relationship of the form-function complex to social organization and habitat utilization
PROGRAM IN EVOLUTIONARY AND BEHAVIORAL BIOLOGY, TROPICAL ZONES:	
<u>Alicia Breymeyer</u> U. of Warsaw	Ecology of grasslands environments in tropical zones
<u>Jeffrey B. Graham</u> Scripps Inst. of Oceanography	Studies on the adaptive radiation of tropical marine fishes
<u>Ian H. Healey</u> U. of Wales	The role of animals in decomposition processes in the tropical forest
<u>James R. Karr</u> U. of Chicago	Comparisons of structure of avian communities in selected tropical areas

*Postdoctoral Associates underlined

David L. Meyer

Yale U.

Eugene Morton

Yale U.

A. Ross Kiester (partial support)
Harvard U.

John E. McCosker

Scripps Inst. of Oceanography

William B. Ramirez

U. of Kansas

Studies in the functional morphology of living
and fossil crinoids

Ecological aspects of communication in birds

Studies on the ecology and social behavior of
Panmania Gecko Gonatodes albogularis

Substrate preferences and comparative func-
tional morphology of eels, family Ophichthidae

Ecological relationships and specificity between
wasps (Agaonidae) and Ficus

PROGRAM IN PHYSICAL SCIENCES:

John J. Gurney

Capetown U.

Douglas D. Nelson

U. of South Carolina

Electron microprobe studies of kimberlite and
and its associated ultrabasic xenoliths

Clay mineralogy and sedimentation of the
Outer Banks, North Carolina

PROGRAM IN ANTHROPOLOGY:

James H. Rauh

Tulane U.

Mario Jose Sanoja

U. Cent. Venezuela

D. Gentry Steele

U. of Kansas

Rayna D. Green

Indiana U.

Iraida Vargas (partial support)

U. Cent. Venezuela

An investigation of the structure of the Borgia
group of manuscripts

Ecology and cultural areas in pre-Columbian
Venezuela

A re-evaluation of the within-group variation
of the family Tupaiidae

The image of the Indian in the popular
imagination

Aboriginal cultural development in eastern
Venezuela and their relationships with the
Lesser Antilles

PROGRAM IN HISTORY OF ART AND MUSIC:

Robert E. Eliason

U. of Missouri, K. C.

Francis V. O'Connor

Johns Hopkins U.

Shelley Fletcher

New York U.

William D. Morgan (6 mo. appt.)

U. of Delaware

Richard N. Murray

U. of Chicago

Phylis North (6 mo. appt.)

Early American wind instruments and their
makers

Historical studies of American art

Pigment analysis of the American painting
collection at NCFA

Henry Vaughan, 1845-1917, Gothic revival
architect

A study of figurative mural painting, public and
private, in the U. S. 1890-1920

Max Weber paintings, 1905-1920

PROGRAM IN AMERICAN HISTORY:

Leonard P. Curry

U. of Kentucky

William B. Floyd (7 mo. appt.)

George Washington U.

Yvonne Marie Lange

U. of Pennsylvania

Peter H. Smith

George Washington U.

Roots of American urbanism, 1800-1850

An historical study of Thomas Sully

Santos, the household wooden saints of Puerto
Rico

The Great American Wheel Conspiracy: Hoopes
Bros. and Darlington, 1890-1920

PROGRAM IN HISTORY OF SCIENCE AND TECHNOLOGY:

<u>Sandra S. Herbert</u> (partial support) Brandeis U.	Erasmus Darwin's materialistic physiology and its importance for his grandson Charles' discovery of evolution through natural selection
Stephen Cooper Princeton U.	History of American science and technology with emphasis on interrelationships between science and government
Barbara Ann Kaplan U. of Maryland	The relevance of alchemical and hermetic ideas to 13th and 14th century medicine in western Europe
Sally G. Kohlstedt of U. of Illinois	The American Association for the Advancement of Science, 1840-1860; the formation of a national scientific community

PROGRAM IN MUSEUM STUDIES:

Joan W. Mishara NYU Inst. of Fine Arts	Conservation studies of metals, particularly metallic objects of art
---	--

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

RESEARCH AWARDS PROGRAM

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>0</u>	<u>0</u>	<u>0</u>
11 Personnel Compensation.....\$		\$	\$
12 Personnel Benefits.....			
21 Travel & Transp. of Persons			
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....			
25 Other Services	400, 000	50, 000	450, 000
26 Supplies & Materials			
31 Equipment			
41 Grants			
TOTAL.....	<u>\$ 400, 000</u>	<u>\$ 50, 000</u>	<u>\$ 450, 000</u>

Analysis of Total

Pay Increase	0	0	0
Program	\$400, 000	\$50, 000	\$450, 000

Specification of Increase (Program):

Funding Multiyear Awards (\$50, 000)

The Research Awards Program funds worthy, intramural research projects not funded either by the regular plans of operation of the Smithsonian's science bureaus or by outside agencies. Since its inception in fiscal year 1966, 234 proposals have been funded and there have been more than 200 publications in the fields of biology and anthropology directly attributable to this support. The program also has enabled Smithsonian scientists to engage in productive field research with colleagues from other institutions. An additional \$50, 000 is requested to help fund multiyear awards for better stability, continuity, and planning of research. This additional sum will also help to combat the higher costs of basic research brought about by inflation in the costs of laboratory supplies, equipment, and services.

RESEARCH AWARDS PROGRAM

1970 Actual	\$400, 000
1971 Estimate	\$400, 000
1972 Estimate	\$450, 000

The purpose of the Smithsonian Research Awards Program is to support worthy, intramural research projects not funded either by outside agencies or through the regular plans of operations of the science bureaus.

Prior to fiscal year 1966, the Smithsonian Institution received funds from the National Science Foundation for research projects of individual staff members. In the fiscal year 1966 appropriation, the Congress prohibited the NSF from making grants for scientific research to other Government agencies. The NSF instituted a further limitation that it would no longer make grants to any agency or institution receiving direct federal appropriations. The Research Awards Program was begun in fiscal year 1966 by an appropriation of \$350, 000 to the Smithsonian Institution for the purpose of financing new or continuing research projects formerly eligible for support from the NSF. Funding for the program increased to \$400, 000 in fiscal year 1967 where it has remained level.

Proposals are submitted each year by members of the Smithsonian Institution staff only and cover all phases of research in the scientific bureaus. All proposals have undergone a careful scientific or scholarly review in their respective bureaus before they are reviewed by members of the Research Awards Advisory Committee. The members of the Committee are selected on the basis of their broad experience in scientific research, their understanding of scholarship, and their ability to discern basic values in almost any field.

An increase of \$50, 000 is requested to help fund multiyear awards and offset inflation in the cost of basic research.

Need for Increase--From its inception in fiscal year 1966 through fiscal year 1971, 234 proposals were funded through the Research Awards Program. There have been more than 200 publications in the fields of biology and anthropology directly related to the research accomplished from this support. Also, an initial research effort activated by a research award, in many cases has been continued through funding by other federal granting agencies, and research and development foundations.

In fiscal year 1971, members of the Smithsonian staff were allowed for the first time to submit proposals for funding up to three years in order to provide for better stability, continuity, and planning of research. There were 72 proposals received for fiscal year 1971 amounting to \$1, 654, 771, of which 40 were funded in the amount of \$400, 000. Amounts of \$224, 000 are committed to second-year funding and \$71, 000 to third-year funding. Thirty-two proposals had to be rejected for lack of funds. The salary of the principal investigator is never included in the budget of the proposal; it is borne by the Smithsonian Institution.

Following pages show a comparison of proposals funded for fiscal year 1970 and fiscal year 1971 (Table I), a comparison of proposals by dollar volume (Table II), and a comparison of proposals by bureau (Table III).

The Research Awards Program is intended to cope with a serious problem confronting many scientists who wish to undertake non-routine fundamental research of the kind normally undertaken by university research scientists but which cannot be supported from the federal "Salaries and Expenses" appropriation. The large number of proposals that were not funded in fiscal year 1971 and in previous years is of grave concern to the Institution. This concern is based on the fact that the work supported by the Research Awards Program is often the



best of the Institution's productivity and the reason for acquiring scientists of the highest competence and imagination. If the Smithsonian cannot provide this kind of support, it might not attract a high caliber of scientists nor retain them thereafter. Further, it serves as an important means whereby scientists of the Smithsonian Institution may engage in collaborative field research with colleagues located in other institutions. Many opportunities for participation in expeditions and other field projects would be lost were it not for the Research Awards Program providing modest, but essential, research assistance. The problem affects all the research bureaus, but is especially acute in the National Museum of Natural History where most of the operational funding must go to the maintenance of the National Collections.

TABLE I

RESEARCH AWARDS PROGRAM
COMPARISON OF PROPOSALS FUNDED
FY 1970 and FY 1971

	FY - 1970				FY - 1971			
	Total Number of Proposals Received	Amount of Proposals Received	Total Amount Funded	Number of Proposals Funded	Total Number of Proposals Received	Amount of Proposals Received	Total Amount Funded	Number of Proposals Funded
SUMMARY - RESEARCH AWARDS PROGRAM:								
NATIONAL MUSEUM OF NATURAL HISTORY	45	594,886	295,785	31	43	1,067,557	281,915	27
RADIATION BIOLOGY LABORATORY	3	25,643	11,000	1	4	147,957	33,000	3
NATIONAL MUSEUM OF HISTORY AND TECHNOLOGY	3	7,799	910	1	3	5,856	5,785	3
SMITHSONIAN TROPICAL RESEARCH INSTITUTE	2	61,610	45,000	2	4	105,584	43,400	4
SMITHSONIAN ASTROPHYSICAL OBSERVATORY	5	173,741	34,960	3	17	317,780	26,000	2
NCFA/NPG CONSERVATION LABORATORY	1	16,050	-0-	-0-	-0-	-0-	-0-	-0-
INFORMATION SYSTEMS DIVISION	1	16,716	-0-	-0-	1	10,037	9,900	1
NATIONAL ZOOLOGICAL PARK	1	20,851	12,345	1	-0-	-0-	-0-	-0-
TOTAL	61	917,296	400,000	39	72	1,654,771	400,000	40

TABLE II

FY 1971 RESEARCH AWARDS PROGRAM
COMPARISON OF PROPOSALS BY DOLLAR VOLUME
FY 1967 - FY 1971

MORE THAN	LESS THAN	NUMBER OF PROPOSALS				
		FY 1967	FY 1968	FY 1969	FY 1970	FY 1971
-0-	5,000	16	19	6	13	7
5,000	10,000	19	21	22	14	17
10,000	15,000	19	18	12	12	6
15,000	20,000	4	6	7	7	10
20,000	25,000	3	2	5	5	10
25,000	30,000	1	3	6	3	6
30,000	35,000	3	3	1	4	4
35,000	---	<u>1</u>	<u>2</u>	<u>1</u>	<u>3</u>	<u>12</u>
TOTAL		66	74	60	61	72

TABLE III

FY 1971 RESEARCH AWARDS PROGRAM
COMPARISON OF PROPOSALS BY BUREAU
FY 1967 - FY 1971

	NUMBER OF PROPOSALS					AMOUNT REQUESTED				
	FY 1967	FY 1968	FY 1969	FY 1970	FY 1971	FY 1967	FY 1968	FY 1969	FY 1970	FY 1971
OFFICE OF THE SECRETARY	1	1	-0-	-0-	-0-	10,000	9,351	-0-	-0-	-0-
MUSEUM OF NATURAL HISTORY	52	62	45	45	43	545,902	699,819	538,933	594,886	1,067,557
RADIATION BIOLOGY LABORATORY	2	5	4	3	4	23,523	59,296	41,759	25,643	147,957
MUSEUM OF HISTORY AND TECHNOLOGY	3	2	3	3	3	17,158	23,420	33,266	7,799	5,856
SMITHSONIAN TROPICAL RESEARCH INSTITUTE	3	1	2	2	4	45,274	22,645	57,763	61,610	105,584
SMITHSONIAN ASTROPHYSICAL OBSERVATORY	1	2	5	5	17	163,000	39,800	118,780	173,741	317,780
NATIONA AIR AND SPACE MUSEUM	1	-0-	-0-	-0-	-0-	14,500	-0-	-0-	-0-	-0-
OFFICE OF OCEANOGRAPHY AND LIMNOLOGY	2	-0-	-0-	-0-	-0-	14,984	-0-	-0-	-0-	-0-
OFFICE OF ECOLOGY	1	1	-0-	-0-	-0-	9,251	8,956	-0-	-0-	-0-
NCFA/NPG CONSERVATION LABORATORY	-0-	-0-	1	1	-0-	-0-	-0-	12,300	16,050	-0-
INFORMATION SYSTEMS DIVISION	-0-	-0-	-0-	1	1	-0-	-0-	-0-	16,716	10,037
NATIONAL ZOOLOGICAL PARK	-0-	-0-	-0-	1	-0-	-0-	-0-	-0-	20,851	-0-
TOTAL	66	74	60	61	72	843,592	863,287	802,801	917,296	1,654,771

ADMINISTRATIVE AND CENTRAL SUPPORT

Increases being requested in this section cover primarily the central administrative and technical services which operate in support of the program units. Included are the Office of the Secretary, Office of the General Counsel, Office of the Treasurer, Office of Personnel Administration, Libraries, Press, Smithsonian Archives, Photographic Services Division, Supply Division, Administrative Systems Division, Travel Services Office, Duplicating Section, and the Information Systems Division. As a group, the requested increases for fiscal year 1972 amount to \$602,000 or about 7 percent of the total requested Institutional increases.

For the last several years, actual operations indicate that the costs of administering and supporting the diverse program activities have amounted to 15 percent to 18 percent of total obligations. The Smithsonian desires to keep the actual costs of the support function in this range, and the requests presented reflect what is necessary to strengthen certain areas. The expenditures of these units are viewed as necessary to cover general administrative and technical activities, in the manner of an operating overhead account, with the exception of the amounts requested for physical plant operations, maintenance, and protection by the Buildings Management Department which are presented separately. These are an increase of \$807,000 or 9 percent.

Since the needs of the support group follow rather closely the developmental pattern of the program units, in future years' budget presentations an effort will be made to consolidate the number of organizational requests and reduce the complexity of several separate budget submissions. For fiscal year 1972, however, in order to promote an understanding of the overall operations, individual descriptions and requests are submitted for the administrative support units.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

OFFICE OF THE SECRETARY

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>38</u>	<u>2</u>	<u>40</u>
11 Personnel Compensation.....	\$ 534,000	\$ 49,000	\$ 583,000
12 Personnel Benefits.....	43,000	3,000	46,000
21 Travel & Transp. of Persons	10,000	1,000	11,000
22 Transportation of Things			
23 Rent, Comm. & Utilities	1,000	0	1,000
24 Printing & Reproduction.....			
25 Other Services	4,000	3,000	7,000
26 Supplies & Materials	3,000	1,000	4,000
31 Equipment	3,000	1,000	4,000
41 Grants			
TOTAL.....	<u>\$ 598,000</u>	<u>\$ 58,000</u>	<u>\$ 656,000</u>

Analysis of Total

Pay Increase	\$22,000	\$12,000	\$34,000
Program	\$576,000	\$46,000	\$622,000

Specification of Increase (Program):

Operations Officer and Public Service Assistant and Program Funds (2 positions \$46,000)

An operations officer at a cost of \$20,000 is needed to assist the Under Secretary in the planning, direction, coordination, and development of the administrative and central support activities in order that they will be of maximum service to the requirements of our museums, galleries, and laboratories. An assistant to the Assistant Secretary (Public Service) also is required to help plan and produce a range of educational materials such as books, kits, and recording cassettes drawing upon the Institution's resources. This position would cost \$20,000. And, lastly, an additional \$6,000 is required for office support costs.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OFFICE OF THE SECRETARY

1970 Actual.....\$462,000
1971 Estimate.....\$598,000
1972 Estimate.....\$656,000

The Office of the Secretary is composed of the immediate offices of the Secretary, the Under Secretary, the Assistant Secretary (Science), the Assistant Secretary (History and Art), the Assistant Secretary (Public Service), and the Office of Audits.

For fiscal year 1972, a program increase of \$46,000 is requested to employ an operations officer for the Office of the Under Secretary and an assistant to the Assistant Secretary (Public Service) and to provide funds for general operations. An additional \$12,000 are required for necessary pay.

Need for Increase--At the May 1970 meeting of the Board of Regents, the former Assistant Secretary was named to the post of Under Secretary. This was in recognition of the very substantial responsibilities of this office. In order to meet an increasing workload involving Regents matters, construction, legislation, and program and policy matters concerning the entire Institution, additional staff for his office is required. An operations officer is needed to serve in an advisory capacity to the Under Secretary, and be responsible for the direction, coordination, long-range planning, and development of certain of the administrative and central support activities of the Institution, particularly in their service relationships to the museums, galleries, and laboratories. These services include personnel administration, management analysis, procurement, contract administration, property management, buildings management, buildings security, photographic services, and other administrative and technical support units. A position for the operations officer is requested (\$20,000).

An assistant to the Assistant Secretary for Public Service to help plan and produce a range of educational materials is requested also. The Smithsonian has many opportunities to cooperate with private industry and organizations in developing educational materials for the public. These materials include such items as pamphlets and books, construction kits, television programs, recording cassettes for home instruction and mini exhibits. Smithsonian activities that would be involved in these efforts include the Press, the Office of Exhibits, the Elementary and Secondary Education Office, and others, drawing upon the vast subject matter resources of our museums, art galleries, laboratories, and the Zoo. This position would cost \$20,000.

Although the Office of the Secretary has developed a management group responsive to the broad and complex nature of the Smithsonian, it currently has a serious deficiency of funding in other objects of expense to enable it to perform in an effective way. This is a request for essential funds for travel, advisory services, supplies and materials, and basic office equipment and furniture (\$6,000).

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

OFFICE OF THE GENERAL COUNSEL

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>8</u>	<u>1</u>	<u>9</u>
11 Personnel Compensation.....	\$ 121,000	\$ 21,000	\$ 142,000
12 Personnel Benefits.....	10,000	1,000	11,000
21 Travel & Transp. of Persons	1,000		1,000
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....			
25 Other Services	1,000		1,000
26 Supplies & Materials	1,000	1,000	2,000
31 Equipment	1,000		1,000
41 Grants			
TOTAL.....	<u>\$ 135,000</u>	<u>\$ 23,000</u>	<u>\$ 158,000</u>

Analysis of Total

Pay Increase	\$8,000	\$ 5,000	\$13,000
Program	\$127,000	\$18,000	\$145,000

Specification of Increase (Program):

Legal Counsel Requirements of the Institution (1 position, \$18,000)

The Institution has grown considerably since 1964. There have been added to its already numerous responsibilities the Renwick Gallery, the Hirshhorn Museum and Sculpture Garden, the Cooper-Hewitt Museum, the Archives of American Art, the Chesapeake Bay Center for Environmental Studies, and the Woodrow Wilson International Center for Scholars. It has taken on such program as the National Museum Act and the Foreign Currency Program. Each of these required OGC staff participation in its establishment and each places demands on the staff for its continued development and operation within the framework of applicable laws. There is a growing backlog of matters requiring legal attention. An additional \$18,000 is requested: \$17,000 for an additional part-time attorney and a secretary and \$1,000 for other expenses of the office.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OFFICE OF THE GENERAL COUNSEL

1970 Actual	\$110,000
1971 Estimate	\$135,000
1972 Estimate	\$158,000

In 1964 the Office of the General Counsel was established, some 118 years after the Institution was founded. Prior to 1964, outside counsel was retained from time to time to handle significant legal matters for the Institution's private side affairs; the Department of Justice handled a few legal suits on the Federal side; and other questions were decided by Smithsonian administrative personnel. However, such a system was inadequate; it failed to provide the continuous legal counsel necessary for consistency in the day-to-day operations of the Institution.

An increase of \$18,000 is requested for staff and other support. A further increase of \$5,000 is requested for necessary pay.

Need for Increase--As a non-Governmental establishment which nevertheless operates in substantial part with appropriated funds, the legal problems of the Institution include those arising from the operations of a private, university-like, charitable corporation, as well as those common to Government organizations. Many otherwise routine matters are complicated by the pervasive necessity to maintain a rational, effective, and legal relationship between these two capacities in which the Institution functions. In addition, the OGC is responsible for the continuous analysis of Congressional activities and legislation and their impact on the Institution, and has a major role in the furtherance of the Smithsonian's own legislative program.

The Institution has grown considerably since 1964. There have been added to its already numerous responsibilities the Renwick Gallery, the Hirshhorn Museum and Sculpture Garden, the Cooper-Hewitt Museum, the Archives of American Art, the Chesapeake Bay Center for Environmental Studies, and the Woodrow Wilson International Center for Scholars. It has taken on such programs as the National Museum Act and the Foreign Currency Program. Each of these required OGC staff participation in its establishment and each places demands on the staff for its continued development and operation within the framework of applicable laws.

The Office of the General Counsel has grown from three attorneys in 1964 to four full-time attorneys and two part-time in 1971. During this same period, the Institution's appropriations for salaries and expenses have more than doubled, with a concomitant increase in the workload of this office. This limitation of staff has made it increasingly difficult to meet the rising needs of the Institution and has created a growing backlog of matters on which action has had to be deferred.

At the same time, funds for other objects, which averaged about 4 1/2 percent of salaries in fiscal years 1966 through 1969, have been curtailed to three percent during the last two fiscal years. This has been achieved by funding some necessary travel from sources which will not be available in fiscal year 1972, and by deferring the replacement of essential office equipment, which can no longer be postponed without impairing the quality and efficiency of the services provided by the office.

To help overcome these deficiencies, an increase of \$18,000 is requested: \$17,000 for an additional part-time attorney and a secretary, and \$1,000 for other expenses of the office.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

OFFICE OF THE TREASURER

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>31</u>	<u>2</u>	<u>33</u>
11 Personnel Compensation.....	\$ 331,000	\$ 28,000	\$ 359,000
12 Personnel Benefits.....	26,000	3,000	29,000
21 Travel & Transp. of Persons	2,000	0	2,000
22 Transportation of Things			
23 Rent, Comm. & Utilities	192,000	20,000	212,000
24 Printing & Reproduction.....			
25 Other Services	37,000	10,000	47,000
26 Supplies & Materials	14,000	7,000	21,000
31 Equipment	2,000	0	2,000
41 Grants			
TOTAL.....	<u>\$ 604,000</u>	<u>\$ 68,000</u>	<u>\$ 672,000</u>

Analysis of Total

Pay Increase	\$22,000	\$13,000	\$ 35,000
Program	\$582,000	\$55,000	\$637,000

Specification of Increase (Program):

Accounting, Budgeting, Financial Reporting, and Postage Requirements
(2 positions, \$55,000)

The Office of the Treasurer provides comprehensive financial management assistance and technical services to the Smithsonian. This includes financial planning, budgeting, accounting, contracts administration, and reporting. An increase of two employees and funds to meet Institutional needs are requested. A systems accountant is required to continually review and improve the Institution's accounting procedures and records to keep them responsive to needs. A budget technician is required to assist the three budget analysts in a wide variety of data gathering and summarizing assignments. These two positions would cost \$18,000. An additional \$17,000 are needed for forms and computer services used in financial reporting to the museums, galleries, research laboratories, and other units. Under recent postal reform legislation, a near future substantial increase in postal rates is anticipated. An additional \$20,000 are requested for postage indicia.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OFFICE OF THE TREASURER

1970 Actual.....\$573,000
1971 Estimate.....\$604,000
1972 Estimate.....\$672,000

This office provides financial management assistance and technical services to the Smithsonian. It is composed of the Treasurer's immediate office, the Office of Programming and Budget, and the Accounting Division. Financial planning, budgeting, accounting, contracts administration, and reporting are the responsibilities of these several units.

An increase of \$55,000 is requested to strengthen the budgeting and accounting functions, to provide forms and computer services required in financial reporting, and to meet anticipated higher postage indicia costs. Funding of \$13,000 is required also for necessary pay.

Need for Increase--Selective staff increases and funds for program improvement are required in order that the Office of the Treasurer can provide responsive services to the Smithsonian's museums, galleries, research laboratories, and to the other organization units that are themselves providing similar technical support in the way of personnel management, buildings management, and other services. The diversity of the Smithsonian's operations and geographic distribution, and the variety of funding sources for its programs pose unusual demands of financial management services. The effectiveness and efficiency with which the program offices carry out their assigned research, curation, exhibit, and other public services depend in large measure on the accuracy and timeliness of good financial information.

Two additional employees are required: a systems accountant and a budget technician. The systems accountant would assist in the design, adaptation, installation, evaluation, and updating of the Institution's accounting systems, including reports, records control devices, and related procedures. There are at present three budget analysts responsible for agency-level budget planning, formulation and execution including the year-round job of review and monitoring of obligations and outlays for some 40 budget line items as well as foreign currency and construction accounts. A budget technician (no such position now exists) is required to assist in a wide variety of data gathering and summarizing assignments. Funding of \$18,000 is requested for these two positions.

Additional funds for forms and computer services are requested for financial reporting to the heads of the Institution's museums, galleries, research laboratories, and the other administrative and central support activities including the Buildings Management Department (\$17,000).

Funding of the Institution's postage indicia requirements is provided centrally from the Office of the Treasurer. Approximately \$165,000 will be spent for this purpose in fiscal year 1971 primarily for first class mail. The U.S. Post Office Department indicates substantially higher postage rates late this fiscal year or early next. Under the recent postal reform legislation, the board of governors are empowered to make an emergency increase in postage rates. An eight-cent first class rate is likely as well as other increases. An additional \$20,000 are requested for postage indicia.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

OFFICE OF PERSONNEL ADMINISTRATION AND HEALTH UNITS

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>28</u>	<u>1</u>	<u>29</u>
11 Personnel Compensation.....	\$ 368,000	\$16,000	\$ 384,000
12 Personnel Benefits.....	29,000	2,000	31,000
21 Travel & Transp. of Persons	2,000	0	2,000
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....			
25 Other Services	32,000	10,000	42,000
26 Supplies & Materials	1,000	4,000	5,000
31 Equipment			
41 Grants			
TOTAL.....	<u>\$ 432,000</u>	<u>\$ 32,000</u>	<u>\$ 464,000</u>

Analysis of Total

Pay Increase	\$20,000	\$10,000	\$30,000
Program	\$412,000	\$22,000	\$434,000

Specification of Increase (Program):

Health Services and Employee Training (1 position, \$22,000)

This Office has responsibility for personnel administration and the operation of health services for visitors and staff. On an annual basis the health units provide about 14,000 treatments. An additional \$12,000 are requested to provide one more nurse position and necessary supplies and equipment to augment the health services provided in the History and Technology Building, the Natural History Building, and the buildings on the south side of the Mall. Similarly, the Smithsonian needs to provide more employee training especially of supervisors and of low-level, low-skill employees. The Office of Personnel Administration has only about \$10,000 available to it for training expenses. An additional \$10,000 are requested.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OFFICE OF PERSONNEL ADMINISTRATION AND HEALTH UNITS

1970 Actual.....\$388,000
 1971 Estimate.....\$432,000
 1972 Estimate.....\$464,000

This Office has responsibility for personnel administration and the operation of health services. It helps to formulate policy over a wide range of activities from manpower planning and managerial development, through employee training, performance evaluation, and labor relations. These programs generally fall into six broad categories; the table below indicates the nature of these endeavors with estimated man-years and expenditures for fiscal year 1970.

<u>Activity</u>	<u>Effort and Dollars</u> <u>FY 1970</u>	
Manpower and Organization	.75 man years	\$ 12,000
Career Development	2.75 "	40,000
Management and Personnel		
Consulting	9.00 "	153,000
Technical and Administrative		
Support	5.00 "	34,000
Health Services	3.50 "	51,000
Recruitment and Placement	2.00 "	29,000
Admin. and Direction	<u>3.50</u> "	<u>69,000</u>
	26.50 man years	\$388,000

Annual reports indicate that over the last few years the number of actions handled on a yearly basis by the staff has grown to 72,000. This is a sizable workload. The ratio of staffing for carrying out personnel office functions is one personnel employee per 125 employees serviced. While no fixed standard has been developed, this is considerably higher than comparable government agencies which average approximately one personnel employee per 80 employees serviced.

The requested program increase of \$22,000 will be used to correct shortages in the areas of health services and employee training. An additional \$10,000 are required for necessary pay purposes.

Need for Increase--The health units provide services to Smithsonian Institution employees as well as to visitors and tourists. On an annual basis, these units provide about 14,000 treatments to tourists and staff. This figure has been steadily increasing over the years. There is a critical need to improve and increase the availability of these services in the History and Technology Building, the Natural History Building, and the buildings on the south side of the Mall. An amount of \$12,000 is requested for an additional nursing position plus necessary supplies and equipment.

The Smithsonian has been administering an austere program of employee training. In fiscal year 1970, the amount spent by the Office on training was approximately \$10,000, yet the needs for training have been steadily mounting. Additional funding is required just to meet programs of special emphasis with the Administration. For example, the Civil Service Commission recently has required specially tailored training for first-level supervisors. In the near future, the CSC will issue strong recommendations that equivalent training be provided for all supervisors. There are more than 400 supervisors currently in the Institution. A second area of emphasis is training for supervisors and

and managers in labor-management relations. A third area is "upward mobility". The present Administration is putting much emphasis on the Public Service Careers Program and other programs to provide training for low-level, low-skill individuals who are currently Federal employees. The Institution has at present more than 600 employees in the latter category, i. e., GS-5 and below and WG-5 and below. The Institution has at present no programs in the second and third areas, and only minimal programs in supervisory training. For these reasons an additional \$10,000 are being requested to strengthen training programs.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

SMITHSONIAN INSTITUTION LIBRARIES

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>54</u>	<u>9</u>	<u>63</u>
11 Personnel Compensation.....	\$ 600,000	\$ 74,000	\$ 674,000
12 Personnel Benefits.....	47,000	6,000	53,000
21 Travel & Transp. of Persons	6,000	2,000	8,000
22 Transportation of Things	1,000	1,000	2,000
23 Rent, Comm. & Utilities	2,000	2,000	4,000
24 Printing & Reproduction.....	10,000	20,000	30,000
25 Other Services	15,000	23,000	38,000
26 Supplies & Materials	51,000	33,000	84,000
31 Equipment	7,000	50,000	57,000
41 Grants			
TOTAL.....	<u>\$ 739,000</u>	<u>\$ 211,000</u>	<u>\$ 950,000</u>

Analysis of Total

Pay Increase	\$ 24,000	\$ 21,000	\$ 45,000
Program	\$715,000	\$190,000	\$905,000

Specification of Increase (Program):

Correction of Shortages and Continued Modernization (9 positions, \$190,000)

Although the Smithsonian will continue to use the resources of other libraries through interlibrary loans and other ways, the availability of adequate in-house library materials and reference services is essential to the effective performance of the Institution's curation, exhibition, and research functions. Presently, the Smithsonian Libraries are not meeting several staff needs. The request for fiscal year 1972 is meant to partially offset a variety of deficiencies such as in purchase funds (\$65,000), development of automated library techniques (\$20,000), materials preservation (\$22,000), and supplies and equipment (\$24,000). Nine additional positions are requested. A librarian and two clerks will provide service to museums and galleries that are unserved by the General Library (\$20,000). One cataloger and one technician will be used to create a core speed cataloging team to reduce the time of processing new materials (\$15,000). A cataloger and a technician will also be utilized to organize and inventory the collections housed at the Lamont Street center (\$14,000). In addition, one technician and one aid are necessary to begin to edit the holdings of the Institution's union catalog (\$10,000).

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
SMITHSONIAN INSTITUTION LIBRARIES

1970 Actual \$659,000
1971 Estimate \$739,000
1972 Estimate \$950,000

The Smithsonian Institution Libraries provide reference and information services in support of the research and educational programs of the professional staff of the Institution. Basic library resources consist of about 750,000 volumes in the working collections of the Institution. The Smithsonian Institution's library program has the following basic purposes: (a) to have at hand carefully selected documentary materials containing the best and most pertinent data and results from research done elsewhere that has a direct bearing on our own investigations; (b) to arrange and index the information in ways that make it readily accessible; and (c) to provide reference and information services based on this material and related material in other libraries' collections, under terms and conditions that advance research in the Smithsonian. It is logical and prudent to have an information capability such as this as an adjunct to our research effort. In this manner we speed up our own research effort and make it more efficient by avoiding costly and unnecessary duplication of research.

An increase of \$190,000 is requested to correct shortages in the Libraries' basic program of support to the research efforts of the Smithsonian, and to continue to modernize operations and services to the scientific and curatorial staff of the various museums and galleries. In addition, \$21,000 are being sought to help meet necessary pay increases.

Need for Increase--The Smithsonian has embarked on a program of modernization of its library services. The following table contains information covering the requested additional amount of \$190,000 for 1972 to implement the current phase of this program. The Libraries are being changed from a congeries of

Table 1: Indicates Needs for FY 1972

	<u>1971</u> <u>Base</u>	<u>1972</u> <u>Need</u>	<u>Requested</u> <u>Increase</u>
Positions	54	63	9
Personnel costs, including salaries, benefits, training, and travel	\$647,000	\$727,000 ^a	\$ 80,000 ^a
Information resources (e.g., books, journals, documents, microfilm)...	52,000	117,000	65,000
Communications equipment and services (e.g., facsimile, special mail, and transportation)	5,000	8,000	3,000
Materials preservation (current input)	7,000	29,000	22,000
Supplies, equipment, and maintenance	16,000	37,000	21,000
Automation and data processing	<u>12,000</u>	<u>32,000</u>	<u>20,000</u>
Total	<u>\$739,000</u>	<u>\$950,000^a</u>	<u>\$211,000^a</u>

^a Includes \$21,000 for necessary pay increases.

widely dispersed collections in a vast array of subjects in art, the sciences, and the social sciences, into an integrated resource. Integration will be achieved through improved indexing, search and retrieval mechanisms, involving both improved manual and new computer methods, and through consolidation of several

related smaller collections into more serviceable units. Information services are to be upgraded, based on recently developed methods of information science. Further, the collections that hitherto chiefly served discipline-based curatorial and related research are being broadened to provide a base for information services for research in the newer interdisciplinary aspects of science, sociology, and culture.

Of the more than 385,000 books and uncounted tens of thousands of reports and research documents produced throughout the world each year, it is estimated that the Institution must purchase about 18,000 titles in order to maintain information services that are sufficiently well founded to be useful. This is a modest rate of acquisition. Currently, the Libraries are about \$125,000 short of funds for the purchase of library materials. The effects of inflation over the last few years have severely eroded the ability of the Libraries to purchase new materials particularly in subject areas of most concern to the Institution. While selected price indices, using 1957-59 as base years are presented in Table 2, much of the recorded increase has occurred in the last five years.

Table 2

Recent Price Indices: Periodicals in Subject Areas
of Institutional Interest, and Selected Hardcover Books

		1970 Index (1957-59 = 100)
Subject Areas		
Chemistry and Physics		265
Fine and Applied Arts		154
History		143
Mathematics, Botany, Geology, and General Science		267
Sociology and Anthropology		156
Zoology		176
		1969 Index (1957-59 = 100)
Selected Hardcover Books		177

Source: "Price Indexes for 1970," Library Journal
(July 1970), 2427, 2428, and Publishers Weekly
(February 9, 1970), 49.

The Libraries also are \$200,000 short in funds for the application of modern indexing and retrieval techniques to operate this essential service. Also required are about \$50,000 per year for binding and filming of materials for preservation. As indicated in Table 1, the requested increase will be applied to partially offset these and other pressing needs. The requested staff increase of nine positions would be utilized as follows:

To create a team of information service people to provide reference and collection management services at least ten hours a week in each of the unstaffed bureau branches that are now unserved by the General Library (principally the National Air and Space Museum, Radiation Biology Laboratory, Museum of Natural History, Armed Forces Museum Advisory Board, and Museum Services); one professional librarian, two library clerks \$20,000

To organize a speed cataloging team for rapid processing of priority materials. This is a move to reduce the average time of processing of new materials in cataloging, aiming at a goal of six weeks' lapsed time; one cataloger and one library technician \$15,000

To organize and inventory those parts of the consolidated collections now housed at the Smithsonian Institution Libraries Center at La mont Street (estimated to be a three-year project); one cataloger and one library technician 14,000

To edit the Institution's union catalog of its holdings, particularly to rationalize conflicts in entry and to provided entries for new subject interests among research projects; one library technician and one library aid..... 10,000

In 1970 the Libraries acquired 3,974 titles (books, journals, and documents) by purchase, and 12,194 titles through gifts and exchanges. The Libraries cataloged 8,158 of these for addition to the collections. This record of accomplishment is offset by severe shortages in every category of service. One quarter of the titles ciruclated to the professional staff of the Institution in 1969 were not in the Smithsonian's collections and had to be borrowed from other libraries, principally the over-burdened Library of Congress. The 8,010 uncataloged and unindexed items considered pertinent to the work of the Smithsonian acquired in 1969 were added to the existing backlog of 59,000 uncataloged titles remaining from other years. The delays in organizing this material for use have grown to several man-years. Of nineteen major bureaus and offices of the Smithsonian, eight are completely without local service, except as provided by the Libraries' small Central Reference and Circulation staff.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

SMITHSONIAN INSTITUTION PRESS

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>25</u>	<u>0</u>	<u>25</u>
11 Personnel Compensation.....	\$ 319,000	\$ 10,000	\$ 329,000
12 Personnel Benefits.....	24,000	1,000	25,000
21 Travel & Transp. of Persons	3,000	0	3,000
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....	352,000	40,000	392,000
25 Other Services	5,000	0	5,000
26 Supplies & Materials	2,000	0	2,000
31 Equipment	2,000	0	2,000
41 Grants			
TOTAL.....	<u>\$ 707,000</u>	<u>\$ 51,000</u>	<u>\$ 758,000</u>

Analysis of Total

Pay Increase	\$ 18,000	\$11,000	\$ 29,000
Program	\$689,000	\$40,000	\$729,000

Specification of Increase (Program):

Research Manuscript Printing (\$40,000)

An additional \$40,000 of printing funds are required to reduce a growing backlog of research manuscripts in science and history ready for printing. At the close of fiscal year 1970, 19 major manuscripts could not be printed for lack of funds. Investments in research are wasted unless the results are published on a timely basis.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
SMITHSONIAN INSTITUTION PRESS

1970 Actual	\$700,000
1971 Estimate	\$707,000
1972 Estimate	\$758,000

For a century and a quarter, the Institution has achieved the diffusion of research knowledge principally through the Smithsonian Press. Most of the Press publication activity is considered as a fundamental extension of the basic research programs of the Smithsonian's museums and research laboratories. The Smithsonian Press also produces and distributes museum guides, exhibit catalogs, and information leaflets. This is an extension of another basic Smithsonian program, public education. Finally, the Press also furnishes the Institution with a variety of internal manuals, reports, specimen labels, and directories. A recent analysis of Press operations reveals that about 70 percent of Press efforts are spent directly on research publications, 20 percent on public education, and the balance on administrative support.

Additional funding of \$40,000 is requested for research publication printing. Funding of \$11,000 for necessary pay also is required.

Need for Increase--Currently, about one hundred research publications a year appear in eight active series in the fields of anthropology, astrophysics, biology, geology, history, and technology. This represents the extent of the Press' current funding capacity for this portion of overall activity and not what could have been published. There has accumulated over the last few years a substantial backlog of research publications generated by Smithsonian scientists and historians. At the close of fiscal year 1970, 19 major manuscripts ready for publication, with estimated printing costs of \$32,000, were withheld from the Government Printing Office because funds were not available. The situation will only worsen in fiscal years 1971 and 1972 since it is virtually certain that the research output of the professional staff will exceed the ability of the Press to fund the publishable reports. The Smithsonian is basically a research institution and support of that research is wasted unless reported on a timely basis to national users. An additional \$40,000 are requested for research publication printing.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

INFORMATION SYSTEMS DIVISION

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>14</u>	<u>2</u>	<u>16</u>
11 Personnel Compensation.....	\$ 175,000	\$ 37,000	\$ 212,000
12 Personnel Benefits.....	14,000	2,000	16,000
21 Travel & Transp. of Persons	4,000	1,000	5,000
22 Transportation of Things			
23 Rent, Comm. & Utilities	10,000	0	10,000
24 Printing & Reproduction.....			
25 Other Services	11,000	18,000	29,000
26 Supplies & Materials	2,000	0	2,000
31 Equipment	3,000	0	3,000
41 Grants			
TOTAL.....	<u>\$ 219,000</u>	<u>\$ 58,000</u>	<u>\$ 277,000</u>

Analysis of Total

Pay Increase	\$ 12,000	\$ 8,000	\$ 20,000
Program	\$207,000	\$50,000	\$257,000

Specification of Increase (Program):

Application of Electronic Data Processing to Smithsonian Requirements
(2 positions, \$50,000)

The Smithsonian, through the work of its museums and research laboratories, is basically an information producer and distributor. Throughout the Institution firm requirements have been identified for the application of electronic data processing to the task of storing, arranging, and reporting data associated with collections and other research. This requirement is especially acute in the National Museum of Natural History but virtually all of our science, history, and art activities have such needs. An illustration in our budget request shows how data related to the collections can be reported for medical research use. For fiscal year 1972, two additional computer specialists are required (\$31,000) with funds for computer services and other support (\$19,000).

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
INFORMATION SYSTEMS DIVISION

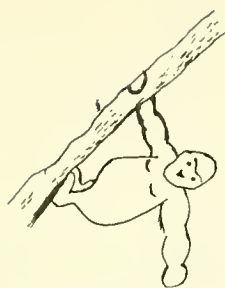
1970 Actual.....\$217,000
1971 Estimate.....\$219,000
1972 Estimate.....\$277,000

The Information Systems Division was established in 1966 in response to a growing awareness that the Institution had to take advantage of computer technology not only in its management areas but to gain access to masses of research data and information associated with its collections. Currently, the Division is comprised of an information retrieval section, a mathematical computation section, a software and maintenance section, and a management systems section. While much of the Division's efforts are currently devoted to administrative and management support functions, in future years attention will be concentrated increasingly on research support and the retrieval of information from the National Collections. Some 350 specific and 50 general computer programs have been developed and much of the time of current staff must go to maintenance and updating. An illustration of the Division's output in support of research and collections management is shown on a following page. Current program shortages include the following, for which a program increase of \$50,000 is requested. An additional \$8,000 are required for necessary pay.

Need for Increase--The Division is not yet able to meet Institution needs in the management systems area. It is utilizing its present capacity in this area developing and installing new systems for library acquisitions and search, fiscal accounting, personnel administration, buildings management work planning and control, and for property management. These systems are only in initial or intermediate stages of development, and a particularly large increase in actual systems implementation and programming time is required to meet the anticipated workload in fiscal year 1972.

For several years (largely with grant funds which are no longer available) the Institution has been exploring and developing automated methods for capturing natural history collection information in order to make measurements of long term environmental change associated with artifact and specimen characteristics useful for controlled research purposes. The Institution is considered the pioneer in this area by concerned scientists around the nation. One objective, for example, is to recreate environmental conditions for selected animal species which prevailed during specified periods in history, and then through various analyses to speculate about changes which have occurred or will occur and result in contemporary population, distribution, and survival characteristics. The feasibility and usefulness of automation has been demonstrated to the scientific community by the joint efforts which have taken place to date between the National Museum of Natural History and the Information Systems Division. These pilot projects have concentrated on birds, crustacea, rocks, and minerals. The system must now be gradually extended and implemented through the Museum. Collection information systems are needed elsewhere in the Smithsonian. For instance, in the National Portrait Gallery, the Division is helping to develop a program to permit retrieval of a great variety of research data concerning portraits of distinguished Americans. In the Museum of History and Technology similar systems are needed to assist the curators in cataloging, retrieving, and maintaining their collections.

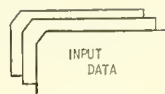
To accommodate these and related needs, two additional computer specialists will be required (\$31,000) along with necessary travel and computer services to support the entire Division (\$19,000).



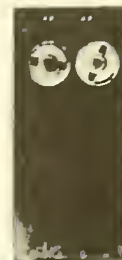
BIOLOGICAL SPECIMENS



MEASUREMENT AND DATA PREPARATION

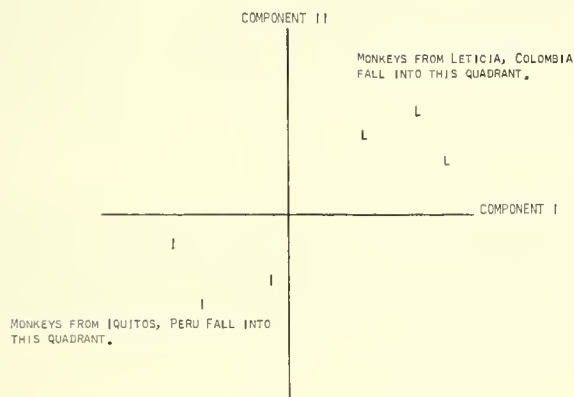


COMPUTERIZED INFORMATION STORAGE, RETRIEVAL AND ANALYSIS

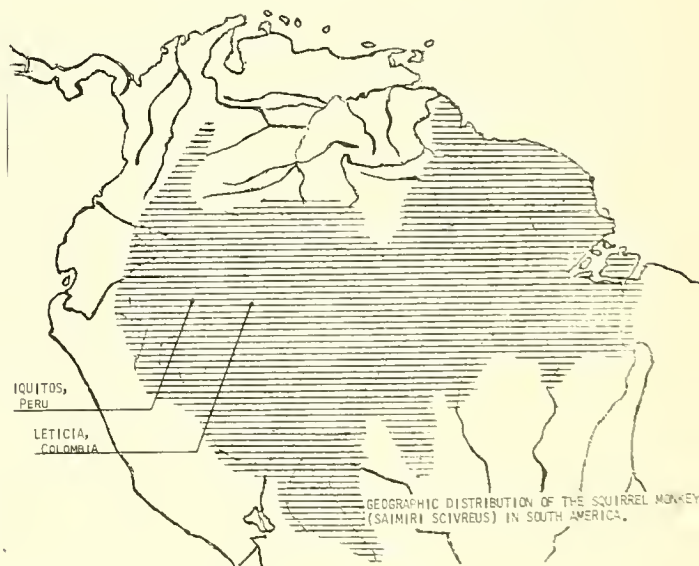


GROUP Saimiri sciureus ♂♂ from Leticia, Colombia

VARIABLE	MEAN	VARIANCE	STANDARD DEVIATION	STANDARD ERROR	VARIATION COEFF
1	63.5875	2.3657	1.5381	.2432	2.4189
2	35.8900	2.1143	1.4540	.2299	4.0514
3	38.9100	6.6102	2.5710	.4065	6.6076
4	33.7425	1.9343	1.3908	.2199	4.1218
5	29.4675	.5546	.7447	.1177	2.5271
6	18.7925	.5299	.7280	.1151	3.8737
7	15.7050	.4174	.6461	.1022	4.1138
8	18.8300	.6473	.8045	.1272	4.2726
9	19.8675	3.4735	1.8637	.2947	9.3809
10	17.6050	1.0666	1.0328	.1633	5.8664
11	43.7525	2.3744	1.5409	.2436	3.5218
12	63.2225	2.8054	1.6749	.2648	2.6493
13	40.0475	1.3436	1.1591	.1833	2.8944
14	40.3675	.8776	.9368	.1481	2.3207
15	32.5325	.8971	.9472	.1498	2.9114
16	53.4950	2.2251	1.4917	.2359	2.7884
17	28.2350	2.6269	1.6208	.2563	5.7403
18	34.5475	2.5549	1.5984	.2527	4.6257
19	27.5475	3.7508	1.9367	.3062	7.0304



SQUIRREL MONKEYS (SAIMIRI SCIVREUS) FROM IQUITOS, PERU MAY BE DIFFERENTIATED FROM SQUIRREL MONKEYS FROM LETICIA, COLOMBIA BY THE ABOVE GRAPH. COMPONENT I IS BASED ON SKULL LENGTH, OCCIPITAL LENGTH, AND LENGTH OF TOOTH ROW. COMPONENT II IS DETERMINED BY SKULL HEIGHT AND NASION-BREGMA LENGTH.



The above illustrates how computerization allows Smithsonian scientists to identify animals used in biomedical research more precisely. Retrieved data on external morphology and skull morphology may be subjected to canonical analysis and discriminate function analysis often resulting in a discrimination among groups of animals which yields a better definition of taxonomy and geographic variation. Investigators are concerned about a variety of physiologic and biochemical differences among squirrel monkeys (*Saimiri sciureus*) used in medical research. An analysis of 19 variables has identified those characteristics most useful in discriminating between groups and has demonstrated that squirrel monkeys differ according to the place obtained: Iquitos, Peru or Leticia, Colombia. This task could not readily be accomplished without benefit of the computer system as manifold computations must be made on each of the 19 variables.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

SMITHSONIAN ARCHIVES

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>6</u>	<u>0</u>	<u>6</u>
11 Personnel Compensation.....	\$ 50,000	\$ 3,000	\$ 53,000
12 Personnel Benefits.....	4,000	0	4,000
21 Travel & Transp. of Persons	1,000	0	1,000
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....			
25 Other Services	3,000	5,000	8,000
26 Supplies & Materials	2,000	0	2,000
31 Equipment	1,000	0	1,000
41 Grants			
TOTAL.....	<u>\$ 61,000</u>	<u>\$ 8,000</u>	<u>\$ 69,000</u>

Analysis of Total

Pay Increase	\$3,000	\$ 3,000	\$6,000
Program	\$58,000	\$ 5,000	\$63,000

Specification of Increase (Program):

Microfilming Archival Records (\$5,000)

The Archives maintains records dating from the 1830's on the Smithsonian's history, and makes these available for administrative purposes as well as to scholars studying the history of American science. The requested increase of \$5,000 is aimed at microfilming deteriorating documents for preservation and to make them more accessible to researchers.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
SMITHSONIAN ARCHIVES

1970 Actual.....\$33,000
1971 Estimate.....\$61,000
1972 Estimate.....\$69,000

The Smithsonian Archives is both the official memory of the Smithsonian Institution and a valuable research resource for scholars in the history of American science in the 19th Century. Exclusive of materials located in the research and curatorial areas of the Smithsonian (which also should be identified and protected), the Archives' current holdings amount to over one million documents from the 1830's to the present. Within available resources, the Archives' staff identifies permanently valuable records throughout the Institution, preserves them for administrative, legal, and fiscal value, and provides service on these records to Smithsonian staff. This constitutes the Archives' management or service function. The Archives also makes available and interprets its holdings to the scholarly community, an activity which makes the greatest demands upon the professional capacity of the staff.

Current resources of staff and funds are distributed approximately equally among the following activities: identifying, selecting, and preserving valuable records; preparing finding aids; and providing reference services. In fiscal year 1970, about one-half of the reference service effort went to student, scholar, and federal agency users.

An increase of \$5,000 is requested for microfilming valuable records. An additional amount of \$3,000 is requested for necessary pay.

Need for Increase--A major current program shortage is the lack of sufficient funds for contract microfilming and supplies. Only about \$3,000 is currently available for this purpose. This requested increase of \$5,000 for fiscal year 1972 is aimed at microfilming deteriorating documents as a preservation function, and to increase the availability of these records to staff and visitors through microfilm medium.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

PHOTOGRAPHIC SERVICES DIVISION

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>20</u>	<u>0</u>	<u>20</u>
11 Personnel Compensation.....	\$211,000	\$ 8,000	\$ 219,000
12 Personnel Benefits.....	17,000		17,000
21 Travel & Transp. of Persons			
22 Transportation of Things			
23 Rent, Comm. & Utilities			
24 Printing & Reproduction.....	10,000	15,000	23,000
25 Other Services	1,000	0	1,000
26 Supplies & Materials	13,000	4,000	17,000
31 Equipment	0	3,000	3,000
41 Grants			
TOTAL.....	<u>\$ 252,000</u>	<u>\$ 28,000</u>	<u>\$ 280,000</u>

Analysis of Total

Pay Increase	12,000	8,000	20,000
Program	\$240,000	\$20,000	\$260,000

Specification of Increase (Program):General Photographic Support (\$20,000)

As a result of a virtually level allotment and some pay cost absorption, funds available for other object classes have decreased over the past several years. Yet the price of films, chemicals, and outside processing has increased 10-15 percent. In addition, many pieces of equipment are 10-12 years old and obsolete or frequently in need of repair. An amount of \$20,000 is requested to purchase supplies, replacement equipment, and specialized processing services.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
PHOTOGRAPHIC SERVICES DIVISION

1970 Actual.....\$265,000
1971 Estimate.....\$252,000
1972 Estimate.....\$280,000

The Smithsonian photographic services are unique in that the Institution's activities require more quality and custom work as compared to the photographic needs of most government agencies. The photographic work is under public scrutiny almost entirely. In view of the importance of photographic services to the entire Institution, the centralized Photographic Services Division was formed to exercise a more stable and positive control over the application of procedures and techniques. It maintains laboratories in three museum buildings.

This Division is charged with supplying all types of photographic and related services that the Smithsonian's museums and research activities may require. This involves filling photographic requests, obtaining outside contractual services, and providing technical assistance and training to Smithsonian staff members. The Division supports programs of research, documentation, and conservation of collections, exhibitions, education, training, publication, and public service.

An increase of \$20,000 is requested to provide for general photographic support. An additional \$8,000 are required for necessary pay.

In the past several years, there have been several Government-wide increases in salaries, resulting in funds being directed from other object classes and used for the payment of salaries and benefits. In fact, funds available for other object classes have decreased from \$52,000 in fiscal year 1968 to \$25,000 in fiscal year 1970. This situation is further aggravated by the fact that the prices of films, chemicals, and processing have increased 10-15 percent during this period. Equipment replacement needs have had to be deferred in order to purchase necessary supplies and materials. Many pieces of equipment are now 10 to 12 years old and obsolete or frequently in need of repair. Outside processing (color work) has been held below minimum needs to compensate for the shift of funds for salaries and benefits. Additional funds in the amount of \$20,000 are urgently needed to purchase supplies, equipment, and specialized processing services.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

SUPPLY DIVISION

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>21</u>	<u>0</u>	<u>21</u>
11 Personnel Compensation.....	\$236,000	\$ 7,000	\$243,000
12 Personnel Benefits.....	17,000	1,000	18,000
21 Travel & Transp. of Persons			
22 Transportation of Things			
23 Rent, Comm. & Utilities	8,000	0	8,000
24 Printing & Reproduction.....			
25 Other Services	6,000	3,000	9,000
26 Supplies & Materials	59,000	15,000	74,000
31 Equipment	1,000	2,000	3,000
41 Grants			
TOTAL.....	<u>\$327,000</u>	<u>\$28,000</u>	<u>\$355,000</u>

Analysis of Total

Pay Increase	\$ 10,000	\$ 8,000	\$ 18,000
Program	\$317,000	\$20,000	\$337,000

Specification of Increase (Program):

Stockroom Operations (\$20,000)

The growth in research, exhibit, and educational programs has increased demands for stockroom supplies. These commonly used items are centrally bought, stocked, and issued for economy and efficiency. Reserves of many needed items have been depleted, however, and prices continue to rise. An additional \$20,000 are required for stockroom supplies, equipment, and office machine repair services.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
SUPPLY DIVISION

1970 Actual	\$318,000
1971 Estimate	\$327,000
1972 Estimate	\$355,000

The Supply Division procures supplies, materials, contractual services, and equipment for research, curatorial, exhibition preparation, and other Smithsonian activities. It stocks and issues office, laboratory, and other supplies required in daily operations. It operates a property management program, obtaining excess property in lieu of new procurement wherever possible. The Division maintains property records and takes periodic inventories to insure adequate control and utilization of equipment items.

An increase of \$20,000 is required primarily for stockroom operations. An additional \$8,000 are requested for necessary pay.

Need for Increase--The growth in research, exhibit, and educational programs has increased demands for stockroom supplies. For economy and efficiency of purchasing, general supply items are bought centrally and stocked by the Division for issue. The Division has had to reduce its expenditures for supplies in order to absorb part of higher pay costs. About \$76,000 are available in fiscal year 1971 of which about \$18,000 will be used for duplicating supplies. Because of limited funds, the Division has been unable to conduct an orderly planned procurement and stocking program. It has been forced to buy often in small lots, making for uneconomical procurement. To save funds, the inventory has been purged of slow-moving items and specialized items used by only one or a few units. The reserves of many necessary items, however, have been reduced to dangerous levels. Stock prices are rising. An additional \$20,000 are requested for stockroom supplies, equipment, and office machine repair services.

The Division's workload of purchase orders, contracts, imprest fund uses, and other transactions associated with operating funds, foreign currency matters, and construction projects continues to increase. This increase is the result of general expansion and the assignment of major procurements for the National Zoological Park. Although improved methods and techniques (a new procurement manual has been issued recently) will continue to increase productivity, it is anticipated that the procurement workload will outpace available manpower in fiscal year 1972. There is also the problem of adequate control of receiving and prompt delivery services to additional building facilities (for instance, the Renwick Gallery and the new laboratory building for the Radiation Biology Laboratory in Rockville, Maryland). Notwithstanding the foregoing, an increase in personnel is not being requested at this time. Further expansion will require additional personnel.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

ADMINISTRATIVE SYSTEMS DIVISION

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>9</u>	<u>0</u>	<u>9</u>
11 Personnel Compensation.....	\$ 117,000	\$ 4,000	\$ 121,000
12 Personnel Benefits.....	9,000	0	9,000
21 Travel & Transp. of Persons	0	0	0
22 Transportation of Things	0	0	0
23 Rent, Comm. & Utilities	0	0	0
24 Printing & Reproduction.....	25,000	7,000	32,000
25 Other Services	1,000	0	1,000
26 Supplies & Materials	4,000	3,000	7,000
31 Equipment	1,000	0	1,000
41 Grants			
TOTAL.....	<u>\$ 157,000</u>	<u>\$ 14,000</u>	<u>\$ 171,000</u>

Analysis of Total

Pay Increase	\$8,000	\$4,000	\$12,000
Program	\$149,000	\$10,000	\$159,000

Specification of Increase (Program):

Forms Management Program (\$10,000)

An additional \$10,000 (on a base of approximately \$25,000) is required to purchase a variety of forms for management purposes.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
ADMINISTRATIVE SYSTEMS DIVISION

1970 Actual.....\$140,000
1971 Estimate.....\$157,000
1972 Estimate.....\$171,000

The Administrative Systems Division provides management analysis and system and procedures work in the development of sound business administration and management improvement programs within the Institution. This unit develops organizational, functional, staffing and flow charts, procedural manuals and other administrative issuances, makes studies and special surveys, provides management advisory services, and maintains a forms management program.

A program increase of \$10,000 is requested in order to provide supplies for the forms management program. An additional \$4,000 are required for necessary pay.

Need for Increase--As the complexity of the Institution has increased, the use of forms has increased also. Formerly, the Institution could utilize a relatively small number of simple forms for management and reporting purposes. However, the increase in the number of bureaus and programs of the Smithsonian requires that sophisticated reporting systems, including computer reports, be developed to insure that heads of bureaus and offices as well as other Smithsonian officials receive the information essential for effective management. These new reporting systems use many types of forms in relatively large quantities. Unfortunately, in spite of inflationary increase in the cost of forms, the funds available for their purchases have remained constant at about \$25,000. This has now reached a point where the printing or purchase of many required forms has been deferred due to the lack of funds. An additional \$10,000 are urgently needed for the purchase of forms.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

DUPLICATING SECTION

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	7	0	7
11 Personnel Compensation.....	\$ 54,000	\$ 3,000	\$ 57,000
12 Personnel Benefits.....	4,000		4,000
21 Travel & Transp. of Persons			
22 Transportation of Things			
23 Rent, Comm. & Utilities	7,000		7,000
24 Printing & Reproduction.....			
25 Other Services	5,000	0	5,000
26 Supplies & Materials			
31 Equipment	0	15,000	15,000
41 Grants			
TOTAL.....	\$ 70,000	\$ 18,000	\$ 88,000

Analysis of Total

Pay Increase	\$3,000	\$3,000	\$6,000
Program	\$67,000	\$15,000	\$82,000

Specification of Increase (Program):

Replacement of Old Equipment (\$15,000)

The Duplicating Section produces a wide range of high quality printed materials for Smithsonian research, curatorial, exhibits, and administrative needs. Much of its current equipment is old and, while well maintained, frequently breaks down. No funds are available for replacements. An amount of \$15,000 is requested to replace a 13-year-old offset press and a platemaker to reproduce materials with greater fidelity.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
DUPLICATING SECTION

1970 Actual	\$83,000
1971 Estimate	\$70,000
1972 Estimate	\$88,000

The Duplicating Section is responsible for producing a wide range of printed materials for the Smithsonian Institution. Included are administrative issuances, news releases and reports, and informational materials produced by the research, curatorial, and exhibits activities.

A program increase of \$15,000 is requested to replace old and obsolete equipment. An additional funding of \$3,000 for necessary pay is required.

Need for Increase--The current budget meets the costs of essential personnel (no staff reductions can be made and meet the workload), some supplies, and essential repairs to existing equipment. No funds are available to purchase replacement equipment. Much of the current equipment is old and while well maintained frequently breaks down. One of the four offset presses is thirteen years old. When out of operation there is a loss of production as well as costly repairs. Funds are requested for a replacement offset press and for a new itek platemaker in order to reproduce photographs and other originals with greater fidelity.

The service furnished by this unit is essential to many of the overall programs of the Smithsonian Institution. The personnel are well qualified to handle this type of work and do an excellent job. Work must be kept at a current level to be of any value to those requiring the work.

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

OTHER CENTRAL SUPPORT

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>13</u>	<u>0</u>	<u>13</u>
11 Personnel Compensation.....	\$ 155,000	\$ 5,000	\$ 160,000
12 Personnel Benefits.....	14,000		14,000
21 Travel & Transp. of Persons			
22 Transportation of Things			
23 Rent, Comm. & Utilities	5,000	0	5,000
24 Printing & Reproduction.....			
25 Other Services	2,000	0	2,000
26 Supplies & Materials			
31 Equipment	1,000	0	1,000
41 Grants			
TOTAL.....	<u>\$ 177,000</u>	<u>\$ 5,000</u>	<u>\$ 182,000</u>

Analysis of Total

Pay Increase	\$8,000	\$5,000	\$13,000
Program	\$169,000	0	\$169,000

Specification of Increase (Program):

No program increase is sought for fiscal year 1972.

ADMINISTRATIVE AND CENTRAL SUPPORT ACTIVITIES
OTHER CENTRAL SUPPORT

1970 Actual.....	\$168,000
1971 Estimate.....	\$177,000
1972 Estimate.....	\$182,000

Included are the activities of the Equal Employment Opportunity Office, the special project involving writing and research efforts associated with producing the Joseph Henry Papers, the Travel Services Office, and the record keeping duties of the Secretary's Files. No increases are being sought for these activities other than necessary pay (\$5,000).

SMITHSONIAN INSTITUTION--"Salaries and Expenses," Fiscal Year 1972

BUILDINGS MANAGEMENT DEPARTMENT

<u>Object Class</u>	<u>1971 Base</u>	<u>Increase Requested</u>	<u>1972 Estimate</u>
Number of Permanent Positions ..	<u>768</u>	<u>25</u>	<u>793</u>
11 Personnel Compensation.....	\$ 6,032,000	\$504,000	\$ 6,536,000
12 Personnel Benefits.....	453,000	40,000	493,000
21 Travel & Transp. of Persons	3,000	0	3,000
22 Transportation of Things			
23 Rent, Comm. & Utilities	1,425,000	168,000	1,593,000
24 Printing & Reproduction.....			
25 Other Services	1,033,000	45,000	1,078,000
26 Supplies & Materials	275,000	40,000	315,000
31 Equipment	50,000	10,000	60,000
41 Grants			
TOTAL.....	<u>\$ 9,271,000</u>	<u>\$ 807,000</u>	<u>\$10,078,000</u>

Analysis of Total

Pay Increase	\$606,000	\$382,000	\$988,000
Program	\$8,665,000	\$425,000	\$9,090,000

Specification of Increase (Program):

Renwick Gallery (25 positions, \$195,000)

The Gallery will be undergoing exhibit preparation in early fiscal year 1972, and is now scheduled for public opening in the fall of 1971. Additional security and maintenance personnel are needed for the Gallery operations. Twenty-five positions (17 guards, five custodial employees, and three mechanics) and personnel funding (\$162,000) are requested. Support funding for related maintenance expenses such as supplies, communications, materials, and equipment are also requested (\$33,000).

Other Institutional Maintenance (\$230,000)

Because of inflationary costs and greater utilization of facilities, an additional \$230,000 are sought for utility and related expenses in all other buildings of the Institution.

BUILDINGS MANAGEMENT DEPARTMENT

1970 Actual.....	\$ 8,067,000
1971 Estimate.....	\$ 9,271,000
1972 Estimate.....	\$10,078,000

The Buildings Management Department provides essential services to the program units and helps them accomplish the Institution's important goals. These responsibilities include the protection, operation, and maintenance of eight major buildings. These include the original Smithsonian Institution Building, the History and Technology Building, the Natural History Building, the Arts and Industries Building, the Freer Gallery of Art, the National Air and Space Building, the Fine Arts and Portrait Galleries Building (housing the National Portrait Gallery and the National Collection of Fine Arts), and the Renwick Gallery. The Department performs various combinations of these functions for nine other research, collection, special purpose, and support facilities, including the Chesapeake Bay Center for Environmental Studies, the Oceanographic Sorting Center, the Belmont Conference Center, and the Silver Hill facility (which provides for the restoration and preservation activities of the National Air and Space Museum, and houses reference collections of aircraft, and other objects of science, technology, art, and natural history). The total floor space of all the Smithsonian buildings is 3,300,000 square feet, and includes exhibition and public areas, research laboratories, reference collection areas, libraries, offices, and supporting facilities located at 17 different sites in the Metropolitan Area.

This Department provides utilities (electricity, steam, gas, water, and compressed air), including servicing, repairing, and operating the refrigeration, heating, temperature and humidity control systems, and related machinery and accessories. It furnishes transportation and communications, performs repairs, improvements, and alterations to the buildings. Among the Department's responsibilities are the safety, physical security, and disaster programs, as well as engineering and architectural services, construction management, space management, feasibility studies, and professional services.

A program increase of 25 positions and \$425,000 are required in fiscal year 1972 to provide basic services to the Renwick Gallery; and to meet increased costs of utilities, communications, contract work, supplies and materials, and equipment for all of the buildings. An additional \$382,000 are requested for mandatory increases in pay and benefits.

Need for Increase

1. The Renwick Gallery. Located at 17th Street and Pennsylvania Avenue, the Renwick was turned over to the Smithsonian Institution in February 1969, and extensive and essential restoration and renovation work remained to be done in succeeding fiscal years. The Buildings Management Department has been providing basic protection to the building and its contents, and other services such as heating, air conditioning, and the humidity control systems. This is done on a 24-hour basis, seven days a week. Fiscal year 1971 costs will be approximately \$125,000.

The Gallery will be undergoing exhibit preparation beginning in early fiscal 1972, and is now scheduled for opening to the public in the fall of 1971. The additional positions required to provide adequate staffing for fiscal 1972 include 17 guards, five custodial employees, and three mechanics (electrician, painter, and carpenter). In addition to \$162,000 for personnel costs, funds are also requested for related expenses such as communications, supplies, materials, and equipment to support these necessary functions (\$33,000). This is a requested total increase of \$195,000 for building operation costs of this significant additional Institutional facility.

2. Other Institutional Maintenance. An increase of \$230,000 is required to meet the following known additional utility and related expenses:

--\$138,000 to meet an approximate 11.5 percent increase in the cost of electricity over the last two fiscal years.

--\$35,000 for contract services (\$20,000 for contract services for the removal of trash and debris resulting from higher labor costs; \$15,000 to fund the increased cost of miscellaneous contract work for such items as laundry, cleaning and repair of uniforms, and rodent control).

--\$30,000 to meet the increasing costs of supplies and materials (this estimate is based on an average increase of 12 percent to 15 percent for essential supplies and materials for the maintenance, operation, and protection of all the Smithsonian buildings).

--\$20,000 to meet the increasing costs for communications (of this amount \$16,000 are needed for the Federal Telecommunications System intercity telephone services as projected by the General Services Administration).

--\$7,000 to meet the increasing costs for equipment (cost increases averaged 12 percent to 15 percent during the past fiscal year).

The cost of electricity, steam, and communications for all Smithsonian buildings and activities continues to increase along with an upward trend in consumption as indicated in the following table.

<u>Type of Expense</u>	<u>1969</u>	<u>1970</u>	<u>1971 Est.</u>	<u>1972 Est.</u>
Electricity	\$595,000	\$650,000	\$685,000	\$823,000
Communications	235,000	268,000	288,000	318,000
Steam	322,000	372,000	425,000	425,000
Gas	31,000	25,000	29,000	29,000
	<u>1,183,000</u>	<u>1,315,000</u>	<u>1,427,000</u>	<u>1,595,000</u>

In a four-year period, the cost of Institutional utilities has increased by approximately 35 percent (or an average rate of 12 percent per year) with no prospect of this trend diminishing. For example, the General Services Administration has increased the price of steam about 19 percent this fiscal year.

Although higher consumption and increased costs reflect some growth in building areas, to a substantial degree they result from the fact that Smithsonian buildings and museum operations are not normal office-type activities. Air conditioning, heating, and lighting must be provided for the comfort of approximately 14,000,000 visitors during day and evening hours. Many activities are continuous, such as operating engineers being available seven days a week, 24-hours a day, for maintaining environmental control systems. Continuous operations are absolutely essential in many phases of the Department for the conservation and preservation of the National Collections. Supporting services must be provided not only during the normal hours, but also for Institutional activities in the evenings, weekends, and holidays. Peak workload periods are during the spring and summer months when the museum and gallery exhibitions are open until 9:00 p.m.

The mechanical services employees are also responsible for inspecting, servicing, repairing, and operating the 9,850-ton capacity environmental control equipment. This is a complex and intricate system of machinery used for air conditioning, refrigeration, heating, and humidity control purposes. In addition to price increases, the capacity of this machinery has increased five percent in

the last year. The volume and complexity of work orders for mechanical trades assistance continue to grow and to place heavy demands on this Department as indicated below:

<u>Fiscal Year</u>	<u>Work Orders</u>
1969	8,180
1970	9,500
1971	10,500 est.
1972	11,000 est.

These work orders represent a broad range of assistance and support to such activities as exhibitions in history, science and the arts, educational and research programs, and increased use of all buildings, grounds, and facilities by the visiting public.

Building services employees give support to the many programs of the Smithsonian including moving collections and objects, and cleaning exhibit areas, research laboratories, offices, shops, and several public lounges. Employees are also responsible for motor vehicle services, switchboard operation, checkroom services, office moves, and operation of the Institution's 55 elevators.

Over the past several years adequate protection of the visitors to our museums and art galleries has become increasingly complex. The design of exhibit halls and configuration of space requires effective protection. Many more exhibits are being designed to permit the public to view the objects without the intrusion of protective devices such as enclosures and cases. The National Collections must be given maximum protection against loss through arson, theft or vandalism. There has been no significant decrease in the number of such incidents (211 in fiscal 1969; 205 in fiscal 1970). The recently established special salary rate for guard positions will aid in recruiting and retaining qualified guards. The rates are more commensurate with the responsibilities of these positions.

The scope and complexity of the activities of the Buildings Management Department require continuing management improvement efforts and cost reduction programs to ensure that a maximum quality of service is provided with available funds. In recognition of this need, a study by a reputable management consultant firm has been made regarding the organizational structure, financial management, and work control systems of the Department. Several of the recommendations in this study are in the process of implementation. For example, work standards are being developed and implemented, and an inventory control unit has been established. A work control unit has been initiated to plan, estimate, and schedule all major work requests. This will ensure that the preventive maintenance program for plant equipment and buildings is conducted effectively and at minimum cost.

SCIENCE INFORMATION EXCHANGE

1970 Actual	0 $\frac{1}{2}$ /
1971 Estimate	0 $\frac{1}{2}$ /
1972 Estimate	\$1,400,000

The Science Information Exchange, which has been in operation for 20 years, has been conducted by the Smithsonian since 1953 at the request of, and on the behalf of, the federal agencies. Funding is currently provided by the National Science Foundation.

The SIE data bank receives and processes about 100,000 one-page records (2.5 to 3 million data elements) of research planned or in progress annually. About 80 percent of the input comes from federal agencies and 20 percent comes from private foundations, universities, state and local governments, industry, and some foreign sources. From this data bank, SIE answers questions from research investigators, directors and program administrators throughout the national science community about who is currently working on what project, where, when, and with whose support. The purpose of this national service is to help investigators and administrators avoid unwarranted duplication and unnecessary overlap of complex programs and to assist in more efficient planning and management of research projects and programs. It is one to three years from the time a project is planned and started until the time it is completed and reported. Efficient planning and management requires the earliest information about what others are doing.

For fiscal year 1972, the Exchange is requesting an appropriation of \$1,400,000. The Exchange has been funded at a level of \$1,600,000 by the National Science Foundation in fiscal years 1970 and 1971 (1971 at the monthly rate of \$1,600,000 for ten months because of the difference in SIE's fiscal year). The fiscal year 1972 budget request of \$1,400,000 is contingent upon the realization of additional income generated through the recently established user charge system. Federal appropriations are used for the collection, processing, and storage of the data as a national repository and a national service. Since December 1968, non-federal users have paid for retrieving, synthesizing, and packaging the requested information. All users have paid for such services since July 1969.

About 80 percent of the output service goes to the federal agencies their grantees, and contractors. Their requests range from the retrieval of records (at one dollar each) to the preparation of printed annual catalogues of 1,500 pages (at \$25,000) describing the current national research effort, for example in water resources, marine sciences, and environmental quality. The total cost of all output products in fiscal year 1970 was \$211,000. SIE experienced an average increase of 200 percent in the demand for services over fiscal year 1969. This demand for services is illustrated on the following pages. In fiscal year 1968, before any service fees were imposed, the output services totaled \$650,000. This is the approximate income target that must be achieved in fiscal year 1972 for the Exchange to operate without a financial loss. The large drop in usage resulted from the imposition of user service fees without prior notice and an almost constant federal R&D budget in the face of rising research costs. It is quite obvious that early and adequate information is more essential than ever to efficient planning and management, in research as well as in any other enterprise. At the present, the increasing demand for services is expected to result in a user income of over \$400,000 by fiscal year 1972. (Summary information is contained in Table 1.)

1/ Funded by contract with the National Science Foundation.

The SIE data bank is the only one of its scope and size in the world that deals with information about current research activities applicable to planning and management purposes. It is the only source of coherent and comprehensive information that can quickly define and describe the broad multidisciplinary and multiagency (government and private) programs of immediate national importance.

In mid-September 1970, an ad hoc committee was convened to review the current effectiveness of SIE and to identify what it should and could be doing to increase its value. This group was composed of distinguished users representing both government and private organizations in the biological and physical sciences. Recommendations from the Committee are:

1. The SIE has been an effective information exchange organization in spite of many difficulties from an administrative and fiscal point of view.
2. There is both the need and the opportunity for the SIE to provide new kinds of services in response to changing requirements for information.
3. The SIE should continue under a single management organization with an adequate budget, and an advisory committee that would guide the SIE in relation to user requirements.
4. The Smithsonian Institution should become the manager of the SIE.
5. The Smithsonian Institution should take the initiative in recommending to the Office of Management and Budget and the appropriate Congressional committees that the Institution receive an adequate federal appropriation in the form of a special account for the support and continued improvement of the SIE as a national information exchange service for both the federal and non-federal community.
6. The SIE staff, working with the Smithsonian staff, should draft a charter expressing the recommendations of the Users Committee.
7. Ways and means must be considered to strengthen the research record received by SIE. This was considered by all members to be the weakest link in the whole program.
8. More complete coverage of all research grants or contracts awarded by the various Federal agencies should be obtained.
9. Reports of non-Federal supported research on a national scale as well as foreign research reports should also be obtained.

TABLE 1

SCIENCE INFORMATION EXCHANGE
PROPOSED BUDGET FY 1972

	<u>TOTAL COST</u>	PARTIAL DATA <u>BANK COST ^{1/}</u> (Federally Appropriated Funds)	SUPPLEMENTAL INPUT <u>AND OUTPUT COST ^{2/}</u> (User Charges and Other Income)
Personnel	\$1,366,654	\$ 956,000	\$410,654
Salaries	1,242,413	869,090	373,322
Benefits	124,241	86,910	37,332
Contract Services			
Travel	10,000	3,000	7,000
Transportation of things	3,000		3,000
Rents			
Telephone	9,000	9,000	
IBM	285,000	197,500	87,500
Xerox	12,000	12,000	
Building	96,500	96,500	
Other	7,000	7,000	
Printing	5,000		5,000
Other Services			
Equipment maintenance	4,000	4,000	
Other	35,000	15,000	20,000
Supplies	20,000	15,000	5,000
Acquisition of Capital			
Equipment			
	<u>TOTAL</u>		
	<u>\$1,853,154</u>	<u>\$1,315,000</u>	<u>\$538,154</u>
SI Services	171,846	85,000	86,846
	<u>GRAND TOTAL</u>	<u>\$1,400,000</u>	<u>\$625,000</u>

^{1/} Partial cost of receiving, processing, and computer storing of research information as requested in appropriation. Total cost of input is estimated at \$1,600,000. This difference must be made up if possible by user charges or other sources of income.

^{2/} Includes additional money needed for input and to cover cost of out put services. In light of a fiscal year 1970 income of only \$211,000 and a projected income of only \$375,000 in fiscal year 1971 it seems unlikely that user charges and other income will exceed \$425,000 leaving a potential deficit of some \$200,000 in fiscal year 1972. Such a deficit could require the Exchange to cease its existence around the middle of fiscal year 1972 if an additional source of income is not available.

INPUT				OUTPUT (BILLED)								
TOTAL INPUT THIS PERIOD 5,591				P-2 Routine Invt. (# of Quest.)	P-3 Standard Rpts. (# of Reports)	P-4 Negotiated Requests (# of Requests)	P-5 Investigator Searches (# of Names)	P-6 Accession No. Retrieval # of Numbers	P-7 Quarterly Mailings (# of Quest's.)	P-8 Automatic Distribution (# of NRPs)	P-9 Historical Searches (# of Reg's.)	
DISTRIBUTION OF CURRENT FILE												
FEDERAL	FY 69	FY 70	FY 71									
Agriculture	10,260	6,461	39	39	3			1				
ABC	1,231	987	51	11			768			91		
Commerce	1,606	1,754	7	45		5	64	41				
Congress												
D O D	15,527	11,551	6	318								
Air Force	4,771	3,979		(10)								
Army	4,921	4,221	4	(281)							1	
Navy	4,561	2,050	2	(15)			9	6				
Other	1,274	1,301		(12)								
HEW	18,928	14,817	61	134	10	6	402	286	31	23826	1	
HUD	140	20	1			2						
Interior	5,136	5,228	1479	19		1				160		
Justice	73	119		3								
Labor	285	201		3				3				
NASA	3,832	652		4				14				
NSF	6,897	5,015	32	21	3	2	1270		1			
Smithsonian	542	16	12	2	2	1						
State	14	92		1				56				
TVA	33	38	29	1								
Treasury	6	4										
Transportation	1,484	1,590	34	6								
VA	5,411	3,411	54	120		1	53	48		12181	1	
Other	167	133	19	28	1	4				296		
TOTAL FEDERAL	71,572	52,089	1824	755	19	22	2566	455	32	36554	3	
NON FEDERAL	20,027	11,974	747	1278	4	12	121	209	46		13	
GRAND TOTAL	91,599	64,063	2571	2033	23	34	2687	664	78	36554	16	
No. of NRPs (Documents)				208207	2887	16716	3689	609	17244	36554	2644	

TOTAL WORKLOAD STATISTICS BY UNITS
SIE FISCAL YEAR 1970
(Invoiced)
Compared with FY 1969

	Routine Inverted Searches Q.	Standard Reports	Negotiated Requests	Investigator Searches	Accession # Retr.	Quarterly Mailings Q.	Automatic Dist.	Historical Searches
	<u>P2</u>	<u>P3</u>	<u>P4</u>	<u>P5</u>	<u>P6</u>	<u>P7</u>	<u>P8</u>	<u>P9</u>
September	144	2	4	216	84	3	5540	-
October	167	2	5	168	63	10	3874	1
November	164	3	4	273	1	-	5075	-
December	153	2	2	149	34	2	4606	3
January	159	-	2	121	1	10	958	-
February	198	1	2	280	15	3	1907	4
March	186	3	6	236	11	2	2209	-
April	182	3	1	223	99	18	3200	1
May	178	1	4	226	44	1	1625	1
June	155	1	3	252	31	-	3158	2
July	202	4	1	244	9	29	1468	4
August	142	1	0	299	272	3	2934	0
Total	2,030	23	34	2,687	664	81	36554	16
FY 1969 Total Invoiced Workload	716	4	5	10,218	179	0	15464	0
% Increase	182%	475%	580%	72% Decrease	271%	--	136%	--

Output Services - During SIE FY 1970

1 September 1969 - 31 August 1970

<u>Category of Service</u>	<u>Total \$ Income</u>	<u>Total No. Requests</u>	<u>Total No. of Requests</u>	
			<u>% Fed.</u>	<u>% Non-Fed.</u>
P2 Routine Inverted Subject & Administrative Searches	\$ 64,348	2,030	37%	63%
P3 Standard Report	4,216	23	83%	17%
P4 Negotiated Requests	56,399	34	65%	35%
P5 Investigator Searches	7,693	2,687	95%	5%
P6 Accession # Retrieval	726	664	69%	31%
P7 Quarterly Mailings (Selective Dissemination)	3,113	81	41%	59%
P8 Automatic Distribution	3,655	36,554	100%	0%
P9 Historical Searches	2,313	16	19%	81%
Contracts	69,060	10	100%	0%
Total	<u>\$211,523</u>			

DOLLAR INCOME BY TYPE OF SERVICE
SIE FISCAL YEAR 1970

Month	User Charge Income									Contract Income	GRAND TOTAL	CUMULATIVE TOTAL
	P2	P3	P4	P5	P6	P7	P8	P9	P2-9 Total			
<u>1969</u>												
September	4,780	536	4,988	660	87	-	555	-	11,606	7,392	18,998	18,998
October	5,180	392	7,818	516	66	300	387	100	14,759	5,862	20,621	39,620
November	4,730	612	1,760	834	5	-	508	-	8,449	12,751	21,200	60,819
December	4,930	342	634	447	46	285	461	1,328	8,472	7,268	15,740	76,561
<u>1970</u>												
January	5,175	-	8,866	369	5	335	95	-	14,846	18,234	33,080	109,639
February	6,060	158	1,627	849	23	140	191	256	9,304	4,611	13,915	123,554
March	6,195	598	8,132	747	14	125	221	-	16,032	-	16,032	139,583
April	5,100	406	9,711	669	104	685	320	33	17,028	947	17,975	157,558
May	4,845	158	2,240	690	48	95	162	60	8,299	2,163	10,462	168,020
June	4,635	191	3,919	759	35	-	316	187	10,041	3,566	13,607	181,627
July	6,843	625	6,700	547	13	1,050	147	349	16,273	2,131	18,404	200,031
August	5,875	197	4	606	280	98	293	0	7,353	4,135	11,488	211,521
TOTAL	64,348	4,215	56,399	7,693	726	3,113	3,656	2,313	142,461	69,060	211,521	Av. 17,627/mo.

LIST OF CATALOGS PREPARED BY THE SCIENCE INFORMATION EXCHANGE

Volume 1. "Water Resources Research Catalog 1965"

- a. Part I. Federally Supported Research in Progress
- b. Part II. Non-Federally Supported Research in Progress. (Prepared for Office of Water Resources Research, U.S. Department of the Interior, Washington, D. C.) Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402, Part I. \$2.50; Part II \$1.00

Volume 2. "Water Resources Research Catalog" 1966. (Prepared for Office of Water Resources Research, U.S. Department of Interior, Washington, D. C. (Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402)

Volume 3. "Water Resources Research Catalog." 1967 (Prepared for Office of Water Resources Research, U.S. Department of Interior, Washington, D. C.) Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402 \$6.75.

Volume 4. "Water Resources Research Catalog" 1968. (Prepared for Office of Water Resources Research, U.S. Department of Interior, Washington, D.C.) Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402 \$8.50

Volume 5. "Water Resources Research Catalog" 1969. (Prepared for Office of Water Resources Research, U.S. Department of Interior, Washington, D.C.) Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (In Printing Process)

"Marine Research" - FY 1968 (Prepared for Executive Office of President. National Council on Marine Resources and Engineering Development) Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402 \$5.50

"Air Force Research Resumes 1966" (Prepared for Office of Aerospace Research, U.S. Air Force) Clearinghouse, U.S. Department of Commerce, Springfield, Virginia 22151

"Air Force Research Resumes 1968" (Prepared for Office of Aerospace Research, U.S. Air Force) Clearinghouse, U.S. Department of Commerce, Springfield, Virginia 22151

"National Bureau of Standards - Research and Development Projects - FY 1965" (Prepared for National Bureau of Standards, U.S. Department of Commerce, Washington, D.C.)

- "Water Resources Thesaurus 1966" (Prepared for Office of Water Resources Research, U.S. Department of Interior, Washington, D.C.) Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 \$2.00
- "Outdoor Recreation Research 1966" (Prepared for Bureau of Outdoor Recreation, U.S. Department of Interior, Washington, D.C.) Supt.Documents,Wash.,D.C. 1967
- "Outdoor Recreation Research 1967" (Prepared for Bureau of Outdoor Recreation, U.S. Department of Interior, Washington, D.C.) Supt.Documents,Wash.,D.C. 1968
- "Outdoor Recreation Research 1968" (Prepared for Bureau of Outdoor Recreation U.S. Department of Interior, Washington, D.C.) Supt.Documents,Wash.,D.C. 1969
- "Abstracts of Research and Demonstration Projects in Social Welfare and Related Fields 1964" (Prepared for Bureau of Family Services, Welfare Administration, HEW, Washington, D.C.) Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 70 cents.
- "Viral Tumorigenesis Report" (Published semi-annually by National Cancer Institute, National Institutes of Health, HEW, Bethesda, Maryland 20014
- "Medical Research in the Veterans Administration, FY 1965"
- "Current Population Research 1966". (Prepared for National Institutes of Child Health and Human Development, National Institutes of Health, HEW, Bethesda, Maryland 20014)
- "Current Population Research 1967" (Prepared for National Institutes of Child Health and Human Development, National Institutes of Health, HEW, Bethesda, Maryland 20014)
- "Current Population Research 1968". (Prepared for National Institutes of Child Health and Human Development, National Institutes of Health, HEW, Bethesda, Maryland 20014) In Printing Process
- "Recent Research in Public Administration - A Reference 1969" (Prepared for Office of Metropolitan Development, U.S. Department of Housing and Urban Development, Washington, D.C. 20410) Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 \$1.25
- "Recent Research in Intergovernmental Relations 1968". (Prepared for Office of Metropolitan Development, U.S. Department of Housing and Urban Development, Washington, D.C. 20410)
- "Recent Research in Planning 1968". (Prepared for Office of Governmental Relations and Planning Assistance, U.S. Department of Housing and Urban Development, Washington, D.C. 20410)
- "International Trade Research" (Prepared for Export Strategy Staff, U.S. Department of Commerce, Washington, D.C.) Department of Commerce January 1970

"Neurological Disease and Blindness Catalog 1969" (Prepared for National Institute of Neurological Disease and Blindness, National Institutes of Health, HEW, Bethesda, Maryland 20014) Published by NIH April 1970

"Sustaining University Program, NASA, 1969" (Prepared for Office of University Affairs, National Aeronautics and Space Administration, Washington, D. C. 20546) Published by NASA April 1970

"Housing and Residential Building Research and Technology Catalog" (Prepared for Office of Urban Technology and Research, U. S. Department of Housing and Urban Development, Washington, D. C. 20410) In Printing Process

"Food Distribution Research Projects in Progress 1969" Food Distribution Research Society, Hyattsville, Maryland February 1970

Note: New catalogs on Water Resources Research, Outdoor Recreation, and Population Research are currently in progress.

Dec 21, 1970

Prepared for SDR
meeting with Goldwater
12/22/70. Final copy in
Const: NASM file

S - I

FY 1972 Appropriation Requests to the President (In thousands of dollars)

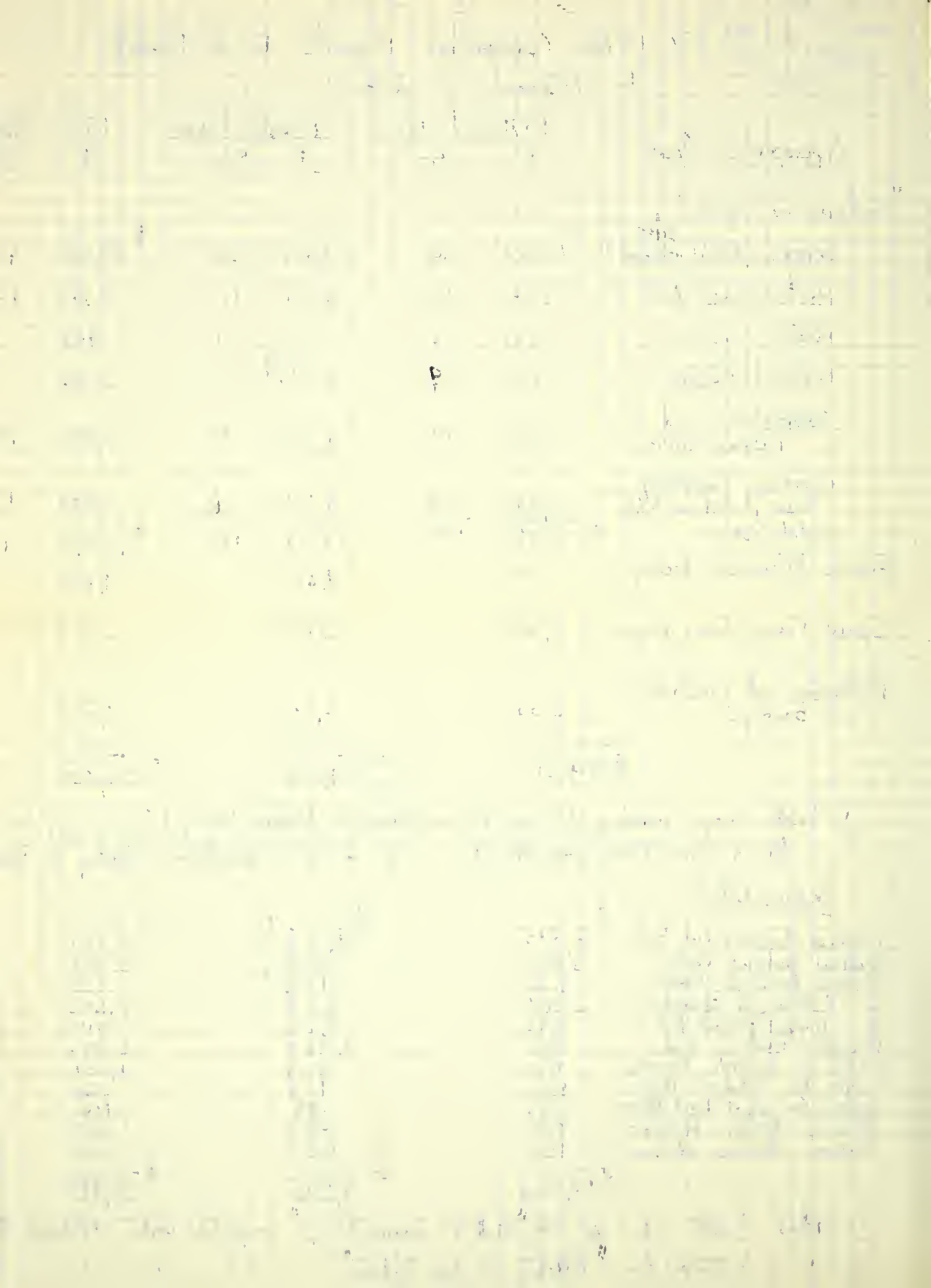
Appropriation Account	1971 Est. Base		Requested Increase		1972 Estimated Total	
	\$	%	\$	%	\$	%
"Salaries and Expenses"						
Science (detail ^{below} attached)	\$ 12,823	36	\$ 9,595	56	\$ 22,418	42
History and Art	5,201	14	2,156	12	7,357	14
Public Service	807	2	138	1	945	2
National Museum	3,120	9 ^a	2,873	17	5,993	11
Administrative and Technical Services	5,047	14	1,424	8	6,471	12
Operation, Maintenance and protection of bldgs	8,764	25	1,130	6	9,894	19
Total "S+E"	\$ 35,762	100	17,316	100	\$ 53,078	100
Science Information Exchange	0		1,600		1,600	
Special Foreign Currency Program	2,500		3,000		5,500	
Restoration and Construction of buildings	6,350		2,872		9,222	
	\$ 44,612		\$ 24,788		\$ 69,400	

Includes major exhibitions for the National Museum of Natural History (\$), the National Air and Space Museum (~~at the~~ \$) of the National Museum of History & Technology (\$).

Science Detail

National Museum of Nat. Hist	\$ 4,215	\$ 4,014 1)	\$ 8,229
National Zoological Park	3,085	824	3,909
National Air & Space Museum	626	129 2)	755
S - Astrophysical Observatory	2,064	629	2,693
S - Tropical Research Inst	594	323	917
Radiation Biology Lab	916	1,967	2,883
Office of Environ. Sciences	584	467	1,051
Center for Study of Man	152	113	265
Center for Short-Lived Phenom	37	79	116
Research Awards Program	400	400	800
Environ. Sciences Program	150	650	800
	\$ 12,823	\$ 9,595	\$ 22,418

- 1) Plus \$ 500 for the "Hall of Living Things" requested under National Museum
2) " \$ 225 for "Exhibits of the Future" " " " "



SMITHSONIAN INSTITUTION
MUSEUM PROGRAMS AND RELATED RESEARCH
(SPECIAL FOREIGN CURRENCY PROGRAM)

1970 Appropriation	\$2,316,000
1971 Appropriation	2,500,000
1972 Estimate	5,500,000

An appropriation of \$5,500,000 in foreign currencies which are determined by the Treasury Department to be excess to the needs of the United States is requested for a program of grants to United States institutions for essential field research in archeology and related disciplines, systematic and environmental biology and astrophysics, as well as for museum programs and for other Smithsonian interests.

The requested increase of \$3,000,000 in foreign currencies is to be devoted to strengthening the research programs of United States universities, museums and other institutions of higher learning in those countries where the United States holds excess currencies.

The increase is essential to support urgent field studies in the Smithsonian's traditional disciplines of systematic and environmental biology and anthropology which today are recognized as basic to an understanding of the problems of environmental quality and cultural change.

The increase is essential also to ensure support for on-going and new research which contributes to United States national programs under, for example, the International Biological Program under Public Law 91-438, the International Decade of Ocean Exploration, the National Aeronautics and Space Administration, the National Academy of Sciences, the United States National Museum and the Department of Interior's cooperative programs abroad under the Endangered Species Conservation Act.

Above all, the increase is essential to provide funds for pending and new research projects from some 22 United States institutions. Funds available during fiscal year 1970, including all previous appropriations, were sufficient only to cover the cost of on-going research. The fiscal year 1971 appropriation is sufficient only to support on-going research and that only at a reduced level. There will be no money for new research.

Finally, the increase is essential to permit multi-year obligation of funds for research in those "excess" currency countries, like Tunisia and Morocco, where the excess designation by the Treasury Department is subject to termination at any time because "excess" accounts are small. Failure to obligate funds for a reasonable number of years for projects in such countries could prematurely terminate worthy studies by United States institutions without receiving full value from funds already expended. The Smithsonian appropriation has never been adequate to permit obligation of funds for more than one year of research at a time. Ceylon, where multi-year research has been underway, was removed from the "excess" currency country list at the end of fiscal year 1970. The

Institution was only able to provide for orderly completion of this research, by making multi-year obligations against monies originally committed for obligation for research in other countries during fiscal year 1971. The Program will, of course, continue to require annual Advisory Council review to determine satisfactory research progress of these and other multi-year studies prior to authorizing disbursement of each successive year's funds.

Funds are requested for the following programs:

	FY 1966-70 Cumulative <u>Commitments</u>	FY 1971 Estimated <u>Commitments</u>	FY 1972 Appropriation <u>Request</u>
Archeology and Related Disciplines	\$ 5,689,550	\$ 1,300,000	\$ 1,750,000
Systematic and Environ- mental Biology	4,143,417	1,000,000	3,000,000
Museum Programs	146,986	80,000	220,000
Astrophysics	519,124	106,000	500,000
Grants Administration ...	<u>51,568</u>	<u>14,000</u>	<u>30,000</u>
	\$10,550,645	\$ 2,500,000	\$ 5,500,000

PROGRAM GROWTH

The Smithsonian Foreign Currency Program has grown from one that supported nine projects in its first year, fiscal year 1966, to one that will support an estimated 97 projects in fiscal year 1971. A total of 168 projects had received Program support by the end of fiscal year 1970. At the end of fiscal year 1970 also, a total of \$10,550,645 had been committed out of the five year appropriation total of \$10,564,000. A total of \$2,923,000 was obligated in fiscal year 1970 alone for grants to on-going research including that approved in earlier years but postponed while host country clearances were obtained. New inquiries about foreign currency uses continue to average about one a day.

This rising demand for foreign currency grants reflects both the scientists' search for alternatives to declining federal research dollars and an expanding Smithsonian Special Foreign Currency Program authority. Program authority which was limited to archeology and related disciplines in the first year, fiscal year 1966, was broadened in fiscal year 1967 to include systematic and environmental biology, in fiscal year 1969 to include astrophysics and in fiscal year 1970 to include museum programs. During the same period, the appropriation increased from \$1,300,000 in fiscal year 1966 to \$2,316,000 in fiscal year 1967, where it remained until fiscal year 1971 when it was increased to \$2,500,000.

NO FUNDS FOR NEW RESEARCH

This limit on appropriations has meant that worthy projects which have sometimes required months or years to prepare and then to win approval for from the Smithsonian and from host country governments, cannot be supported and may be abandoned. Participating scholars, always under pressure to publish, must seek other research opportunities. A waiting list of such unfunded projects has been established. As funds become available, projects with the highest scientific

ratings will be funded first. To avoid postponement of worthy research and to provide for rising demand, an appropriation level of \$6,000,000 annually is considered realistic for future years.

USE OF FOREIGN CURRENCIES SAVES HARD DOLLARS

Special Foreign Currency Program appropriations are an advantageous source of research monies. This is so because they are not new appropriations of tax dollars and because delay in the use of the "excess" accounts means continuing losses to the United States Treasury as these accounts lose value through inflation and devaluation. Moreover, these appropriations do not add significantly to the President's budget total because the Commodity Credit Corporation reduces its appropriation request by an amount equal to the amount of foreign currencies expended.

At the same time, Special Foreign Currency Program appropriations contribute to essential national research objectives abroad without contributing to a balance of payments deficit. Moreover, Smithsonian Foreign Currency grants frequently serve as dollar-saving supplements to the dollar grants of both public and private agencies like the National Endowment for the Humanities, the National Science Foundation, the National Institutes of Health, the National Aeronautics and Space Administration, the World Wildlife Fund, the John D. Rockefeller III Fund and the Wenner-Gren Foundation. In such cases, the foreign currency grants cover costs in the host country; the dollar grants are expended in the United States for equipment not available in "excess" currency countries, for American salaries, laboratory fees and the like.

FOREIGN CURRENCIES SERVE NATIONAL PROGRAMS ON ENVIRONMENTAL QUALITY

Now is the time to use foreign currencies for urgent field studies of the processes of change in man's natural environment and in his culture. The impact of technology on rural and urban communities, the poisoning of man's environment and the destruction of nature's productive mechanisms in the face of exploding human populations, are all problems of direct interest to the Smithsonian. Unrest in urban centers and among young people the world over attest to our poor understanding of these processes. Although the Smithsonian adheres to its traditional role as an institution for basic, not applied, research, its traditional biological and anthropological interests are basic to an understanding of these immediate national and world problems.

"Excess" foreign currencies represent a substantial national resource which should be fully utilized to support studies of environmental quality like the following projects:

...The United States' Desert Biome program under the International Biological Program proposes studies in Tunisia of the continuing encroachment of the Sahara in spite of concerted conservation efforts. Utah State University is the headquarters for this broad study.

...Yale University and the Smithsonian are conducting ecological studies in the Gir Forest in Northwest India where agricultural pressures threaten destruction

of the forest which is the last habitat of the Asiatic lion, which once roamed the region from the Mediterranean to the South China Sea.

...The Smithsonian is studying, together with Israeli scientists, the movement of marine organisms through the man-made, sea-level Suez Canal. Results show that the majority of commercially valuable fish taken in the Eastern Mediterranean originated in the Red Sea. These studies have saved the United States thousands of hard research dollars because they provide a tested model for studies being prepared by the National Academy of Sciences in connection with a possible sea-level canal at Panama.

...The United States Tropical Forest Biome program under the International Biological Program proposes studies of the tropical forests, grasslands, and cultivated lands in the Ganges river valley in India. The University of Georgia is the sponsor of this research.

...The Smithsonian is studying migrating birds and the parasites associated with them in Northeast Africa. Results show that these birds carry viruses and antibodies and thus can be considered potential carriers of human diseases.

Studies of cultural change supported by the Smithsonian Foreign Currency Program include:

...San Jose State College, San Jose, California studies of responses to unusually rapid modernization in a traditional Hindu temple village in India.

...University of Washington studies of the modern history of a caste in India through analysis of its experience of urbanization.

...Kansas State University studies of the nature of changes in values, attitudes, relationships in the Tamil speaking world in India under pressure of modern communications and technological developments.

Such studies by American scholars of man's behavior are best conducted abroad because, as a rule, the best observers of a living culture are those drawn from a different culture.

RESEARCH WHICH MUST BE POSTPONED

New research into the nature of the environment long in preparation which must be postponed because of insufficient funds in the Smithsonian fiscal year 1971 appropriation include:

...International Decade of Oceanography studies conducted aboard the Smithsonian research vessel PHYKOS by scientists from major American oceanographic research institutions as a part of the approved United States national contribution to the Cooperative Investigations of the Mediterranean of the Intergovernmental Oceanographic Commission.

...Oak Ridge National Laboratory studies of deciduous forest and grassland ecosystems in Poland which will supplement similar studies under Oak Ridge's direction under the United States national plan for the International Biological Program.

...Utah State University ecological studies in the Kaziranga Wildlife Sanctuary in India as related to wildlife management.

...University of Nevada comparative ecological studies of the arid zones of Morocco.

ACCOMPLISHMENTS

Smithsonian Foreign Currency Program grants have benefited more than 200 United States institutions in over 25 states. Accomplishments include:

... More than 107 research publications. Recent publications include the first systematic study of marine organisms sorted and distributed by the Smithsonian's Mediterranean Marine Sorting Center in Tunisia and an ecological analysis of the climate and vegetation of Ceylon growing out of the studies of the Ceylonese elephant undertaken by the National Zoological Park.

... More than 214 post-doctoral research opportunities for Americans.

... More than 220 training opportunities for American Ph.D candidates, who obtained essential field experience, frequently obtaining course credit, and more often accomplishing the independent research for doctoral dissertations. Especially noteworthy for the training of students have been Hebrew Union College, Cincinnati, Ohio in its summer seminar at the excavation of the biblical city of Gezer in Israel; and the American Institute of Indian Studies (a consortium of 23 American universities), whose junior fellows conduct research in India toward their doctor's degrees with Smithsonian support. Most research projects include at least one American and one host country senior research scholar and one American and one host-country graduate student.

... Additions to research collections of the National Museum of Natural History and of other grantee institutions in the form of archaeological, ethnographic and biological specimens collected and shared with the collaborating institutions in the "excess" foreign currency country. The National Museum of Natural History is receiving specimens of handcrafts from India and Ceylon which are still being manufactured today employing methods handed down from father to son for centuries. They represent a unique source of information on the archaeology of these countries. Yale University's Peabody Museum and the Museum of the University of Colorado have benefited from additions to their paleontological collections growing out of expeditions in Egypt and Tunisia respectively. The Yale expedition is making substantial contributions to our understanding of man's evolution; the Colorado expedition has uncovered important information about the environment of early man and the geological history of northwest Africa.

GROWING RESEARCH OPPORTUNITIES

Opportunities continue to grow to employ foreign currencies. In June 1969 an amendment was signed to the principles of cooperation between the Smithsonian and the Government of Yugoslavia permitting collaboration in ecological research there. Research proposals promoted by this amendment are just beginning to arrive at the Smithsonian. The recent exchange of visits of Dr. Lee DuBridge, when he was the President's Science Adviser, and Yugoslavia's Minister Marco Bulc has provided added impetus and particularly to a Smithsonian-Yugoslav program to study man's impact on his environment. Moreover, the change in government in Pakistan brought increased interest in collaboration in basic research under the Smithsonian program. A University of Washington proposal to study the wild boar of Pakistan has just been approved--the first for the Smithsonian in Pakistan. A Smithsonian proposal to study the marine fauna of the continental shelf of West Pakistan is currently under consideration by the Government of Pakistan. In India, the Smithsonian is sponsoring an ecological research planning symposium which will provide agreed ecological research objectives with the Government of India and open the door to a substantial program of joint research.

Direct dollar costs to the Smithsonian for its Foreign Currency Program are limited to those for administrative personnel in Washington. During fiscal year 1971, six people were employed by the Office of International Activities for this purpose at a total cost of about \$88,000. The administrative burden has grown by some 79 grants during the past year and by some 40 grants the previous two years without any increase in personnel. The increase in activity has been made possible by the simplification of procedures and the introduction of labor-saving equipment.

This Special Foreign Currency Program request, as in the past, is based on budget projections for on-going research and on pending and new research proposals which include firm research proposals, those postponed by lack of sufficient funds, and other sample or illustrative proposals based on firm indications of interest both within and without the Smithsonian. They represent the Institution's selection of possible projects which appear most promising for successful development and implementation during fiscal year 1972. It should be noted, however, that actual implementation of these projects, and the distribution among disciplines and countries of "excess" currencies appropriated will be contingent upon three factors: review by the Smithsonian's national scientific advisory councils, review and approval by American embassies overseas, and appropriate cooperative arrangements with host-country institutions or Governmental authorities.

MUSEUM PROGRAMS AND RELATED RESEARCH
(SPECIAL FOREIGN CURRENCY PROGRAM)

1. Archeology and Related Disciplines

A. On-going Projects

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>	
1. American Institute of Indian Studies (a non-profit organization of 24 American colleges and universities)	To continue support of the Center for Art and Archeology a research center for South Asian archeology and art history.	1972est.	80,000
		1971	121,012
		1970	150,000
		1969	139,230
		1968	144,500
		1967	130,750
		1966	76,850
2. American Research Center in Egypt (a nonprofit study center supported by ten American universities)	To continue support of the Center's research and excavation program in the archeology of Egypt, which includes Pharaonic, Hellenistic, Roman, and early Christian sites.	1972est.	100,000
		1971	164,315
		1970	25,955
		1969	109,415
		1968	202,071
		1967	176,777
		1966	259,200
3. Jerusalem School of Archeology of the Hebrew Union College	To continue the survey and exploration of archeological sites in the Negev and the excavation at Tel Gezer.	1972est.	85,000
		1971est.	85,000
		1970	248,340
		1969	68,500
		1968	216,200
		1967	300,000
		1966	150,000
4. University Museum, University of Pennsylvania	To terminate the study of the Temple of Akhnaten at Luxor, Egypt and to prepare the publication on this study.	1972est.	30,000
		1971	28,000
		1970	67,000
		1969	60,000
		1968	9,730
		1967	65,070
5. University of Missouri	To continue to excavate at Tell Anafa, Israel, to understand better the nature of Greek trade with Palestine and Egypt in the period after 800 B. C.	1972est.	45,000
		1970	35,500
		1969	40,000
		1968	60,500
6. University of Minnesota	To continue a program of research in Yugoslavia with excavations of the unique Roman Palace of Diocletian at Split, Yugoslavia.	1972est.	40,000
		1971est.	55,000
		1970	60,288
		1969	78,184
		1968	32,505

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>	
✓ 7. Smithsonian Institution Office of Anthropology	To study disappearing metal- working crafts of Pakistan and Ceylon as part of a worldwide study of ancient technologies and their development.	1972est. 1971 1970 1969 1968 1967	30,000 51,030 76,133 43,742 25,128 6,739
8. Dumbarton Oaks (Harvard) Center of Byzantine Studies; American Academy in Rome	To continue studies of the unique but rapidly disintegrating Roman and Byzantine mosaics at historic Utica and extend them to Thurbarbo Majus, Tunisia.	1972est. 1971 1970 1969	150,000 ^{1/} 58,112 58,691 28,628
9. University of Illinois	To continue comparative studies of the effects of cultural change on folk music in Israel and Tunisia.	1972est. 1971 1970	22,000 30,000 31,575
10. American Institute of Indian Studies	To continue support for post- doctoral research in social and cultural anthropology and lin- guistics of India and to support the Institute's center in Poona, India as an American research center abroad serving American scholars in all fields.	1972est. 1971 1970 1968	100,000 239,654 133,920 147,930
11. American Schools of Oriental Research, Boston, Mass. (a consortium of 5 United States institu- tions of higher learning)	To continue support for two archeological excavations at Tell el Hesi and Kirbet Shema embrac- ing biblical, Greek, Roman and Byzantine periods.	1972est. 1971 1970 1969 1968	140,000 117,492 166,713 50,000 80,000
12. State University of New York at Buffalo (formerly under Univer- sity of Michigan)	To continue excavations of the earliest Neolithic settlements in Poland.	1972est. 1971 1969 1968 1967	26,000 36,220 37,251 36,107 21,684
13. Denison University	To continue excavations at Sirmium, a Roman provincial capital along the fortifications erected against the "barbarians."	1972est. 1971est. 1970 1969 1968	40,000 61,000 61,599 65,223 34,285

^{1/} Multi-year obligation to ensure orderly completion of research in countries where "excess" accounts are small.

<u>Recipient</u>	<u>Project</u>	<u>Trant Expressed in U. S. Dollars</u>	
✓ 14. Office of Anthropology Smithsonian Institution	To continue to study the impact on the culture of Palestine of the Phoenician, Cypriot, Egyptian and Arabian cultures from the Middle Bronze age through the Persian period through excavations at Tell Jemmeh in Southern Israel.	1972est. 1971 1970	85,000 63,536 63,272
15. University Museum University of Pennsylvania	To continue study of Dra Abu El Naga tomb inscriptions, Egypt.	1972est. 1970 1969 1968	20,000 17,000 17,300 9,750
16. University of California Los Angeles	To continue excavations of an early neolithic settlement at Anzibegovo Macedonia, Yugoslavia considered a cross road for formative cultures of western civilization.	1972est. 1971est 1970 1969	20,000 20,000 50,487 30,900
17. University of Michigan	To continue research and excavations into the Middle Paleolithic of Northern Bosnia, Yugoslavia	1972est. 1971est. 1969	20,000 25,000 15,220
18. University of Michigan	To document photographically the architecture, sculpture and paintings of the Bhuddists, Hindus and Jains during India's "Golden Age" from the fifth to the eight century A. D.	1972est. 1971est.	5,000 5,000
19. University of Texas	To excavate the classical site of Stobi in Macedonia, Yugoslavia which lies at the confluence of Greek, Roman and ancient Balkan cultures.	1972est. 1971est. 1970	35,000 35,000 40,000
20. Dumbarton Oaks (Harvard) Center for Byzantine Studies	To excavate the Byzantine provincial capital of Bargala in Macedonia which lies at the confluence of Greek, Roman and ancient Balkan cultures in a study supplementary to excavations at Stobi and at Azibegovo which covers the earlier classical and pre-historic periods respectively.	1972est. 1970	35,000 35,275

1972 Subtotal Estimate for On-going Research

1,108,000

B. Pending Research Proposals

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U.S. Dollars</u>	
✓ 1. Smithsonian Institution Office of Anthropology	To study the rapidly disappearing crafts at village level in India	1972est.	25,000
2. American Museum of Natural History	To initiate archeological excava- tions together with the Archeological Survey of India with special pro- vision for the training of Americans in the archeology of South Asia, today an area largely neglected by U.S. scholarship.	1972est.	30,000
3. University of California Los Angeles	To excavate Islamic archeological sites in West Pakistan.	1972est.	30,000
4. Brandeis University	To survey and excavate a western Phoenician archeological site in Morocco.	1972est.	100,000 ^{1/}
5. Smithsonian Astro- physical Observatory, Cambridge, Mass., Dickinson College, Carlisle, Pennsylvania	To explore the significance to ancient Egyptian societies of the stars through study of the align- ment of the temples at Luxor through application of new techniques of aerial photography and compiles calculation of the positions of stars in ancient times.	1972est.	7,000
6. University of Hawaii	To initiate prehistoric archeolog- ical excavations in north- eastern India.	1972est.	30,000
7. Washington State University	To excavate a prehistoric flint mining complex work of the Kanienm River in Poland.	1972est.	25,000
8. Washington State University	To study pre-mesolithic fossils in Poland.	1972est.	10,000
9. University of Nevada	To excavate the prehistoric site of Kausambi in northern India.	1972est.	30,000
10. University of Washington	To study the relations of fishing boat crew members and how they relate to conflict groups in a peasant fishing town in Yugoslavia.	1972est.	15,000

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U.S. Dollars</u>	
11. University of Washington; the American Museum of Natural History, New York	To study the historical and religious documents of Tibet brought to India by the exiled Dalai Lama.	1972est.	30,000
12. Southern Illinois University	To study the impact of rural road construction on social, cultural and economic change in Yugoslavia.	1972est.	28,000 ^{2/}
<u>Subtotal for Pending Research</u>			360,000

C. New Projects

1. Colgate University, New York	To document in film, tape recordings and through anthropological survey techniques, the disappearing performing arts of India.	1972est.	35,000 ^{2/}
2. University of Michigan	To study in Egypt the art and technology of Graeco-Roman lamps as one method of linking the chronology of ancient cities of Egypt with those of the rest of the Graeco-Roman world of antiquity.	1972est.	2,000 ^{2/}
3. University of Kansas	To study the pre-history of Lake Ludas in Yugoslavia through studies of fossil remains of plants and animals and the computer analysis of the distribution of prehistoric artifacts.	1972est.	20,000 ^{2/}
4. Association for Asian Studies, Ann Arbor, Michigan	To support linguistic research in India of the Committee on South Asian Languages.	1972est.	50,000
5. University of Michigan	To study the genetic effects of inbreeding on Indian children.	1972est.	25,000

^{2/} Fiscal year 1971 grant postponed for lack of funds.

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
✓ 6. Smithsonian Institution Department of Anthro- pology	To excavate the Moroccan Islamic city of Sijilmasa.	1972est.	150,000 ^{1/}
<u>Subtotal Estimate for New Research</u>			282,000
<u>Total Archeology and Related Disciplines</u>			1,750,000

II. Systematic and Environmental Biology

A. On-going Projects

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>	
1. University of Georgia	To study the flow of energy through small rodent popu- lations in different habitats in conjunction with the Ecological Institute of Poland.	1972est. 1969	40,000 73,468
✓ 2. Smithsonian Institution Office of Environmental Studies, Oceanography and Limnology Program	To study marine organisms of the Red Sea and Eastern Mediterranean in order to determine what biological interchange of species has occurred through the Suez Canal.	1972est. 1971est. 1970 1969 1967	75,000 75,000 119,462 133,473 122,000
✓ 3. Smithsonian Institution Office of Environmental Studies, Oceanography and Limnology Program	To accelerate the processing of marine organisms from the Mediterranean through the sorting facility known as the Mediterranean Marine Sorting Center operated in cooperation with the Tunisian Institute of Oceanography and Fisheries.	1972est. 1970 1969 1967	600,000 ^{1/} 478,736 ^{1/} 216,962 150,000
✓ 4. Smithsonian Institution Division of Birds	To continue investigations on the ecology of Palearctic birds mi- grating through northeastern Africa, including cooperative re- search on serology with the Rockefeller Virus Laboratory and ectoparasites with the Naval Medical Research Unit III in Egypt.	1972est. 1971 1970 1969 1967	25,000 26,680 24,680 33,780 34,593

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>	
5. University of Michigan	To continue taxonomic studies of Indian mollusks through caryotype analysis and the cytogenetics of closely related species which will contribute to medical, public health, and veterinary programs.	1972est. 1971est. 1970 1969	25,000 25,000 25,562 25,414
6. State University of New York at Stony Brook	To continue theoretical ecological studies of a living coral reef and the organisms related to it in Israel.	1972est. 1971est. 1970 1968	20,000 20,000 7,122 12,036
✓ 7. Smithsonian Institution Department of Vertebrate Zoology	To continue studies of South Asian birds and their migration and the preparation of a handbook.	1972est. 1971 1970 1969	20,000 20,133 17,800 3,417
8. University of Missouri	To continue studies of the behavior and ecology of gazelles in Israel.	1972est. 1971est. 1970	30,000 30,000 45,070
✓ 9. Library, Smithsonian Institution	To continue accelerated translation and publication of reference works and monographs through the National Science Foundation's translations program.	1972est. 1971est. 1970	50,000 25,000 25,000
✓ 10. Office of Vertebrate Zoology, National Museum of Natural History, Smithsonian Institution	To continue to study the geographic distribution and the ecology of the mammals of Morocco.	1972est. 1971 1970	45,000 43,650 66,840
11. University of Michigan	To study productivity of tropical lakes in Southern India.	1972est. 1971est.	30,000 30,000
12. University of Washington	To study the ecology and behavior of the wild boar in West Pakistan, a little studied animal which is nevertheless a significant agricultural pest.	1972est. 1971est.	50,000 47,000
13. Duke University, Durham, North Carolina	To conduct studies for the classification of Moroccan lichen with special emphasis on their chemical characteristics.	1972est. 1971est.	3,000 3,000

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>	
14. International Biological Program, U.S. National Committee, National Academy of Sciences	To continue direct support to the U.S. National Committee for planning symposia, training U.S. scientists, developing research programs and coordinating U.S. and foreign research in each of the "excess" currency countries.	1972est. 1971 1970 1968	75,000 30,000 50,000 10,000
15. International Biological Program, Yale University New Haven, Conn.	To continue to study habitat relationships, numbers and distribution of wild antelope, deer and boar in the Gir Forest in India as a part of a broad study of this tropical forest has included the Asiatic lion.	1972est. 1971est. 1970	25,000 26,000 35,055
✓ 16. Office of Environmental Studies, Oceanography and Limnology Program, Smithsonian Institution	International Decade of Ocean Exploration (IDOE), cooperative investigations of the Mediterranean aboard the Smithsonian research vessel PHYKOS as follows:	1972est. 1971 1969	220,000
--University of Southern California	Dredging, coring and bottom grab sampling in studies of microscopic sea life and fossils of such life.		
--National Museum of Natural History, Smithsonian Institution	Deep sea dredging to study recent changes in the geography of biological regions through study of the changing conformation of the highly adaptable animal, the ostracod.		
--Duke University Durham, North Carolina	Bi-monthly cruises to collect samples for the study of the development, distribution and biology of crab larvae.		
--Washington State University	Biological sampling for studies of the paleontology of Pteropods		
--University of North Carolina	Isolation and study of pure cultures of marine fungi.		
--National Museum of Natural History Smithsonian Institution	Plankton tows for studies of planktonic foraminifera.		
--Florida State University	Sampling for studies of deep sea biology and geology.		

Date		Description		Amount	
1891	Jan 1	Balance		100.00	
1891	Jan 15	Received from A. B.		50.00	
1891	Feb 1	Received from C. D.		25.00	
1891	Mar 1	Received from E. F.		75.00	
1891	Apr 1	Received from G. H.		100.00	
1891	May 1	Received from I. J.		150.00	
1891	Jun 1	Received from K. L.		200.00	
1891	Jul 1	Received from M. N.		250.00	
1891	Aug 1	Received from O. P.		300.00	
1891	Sep 1	Received from Q. R.		350.00	
1891	Oct 1	Received from S. T.		400.00	
1891	Nov 1	Received from U. V.		450.00	
1891	Dec 1	Received from W. X.		500.00	
1891	Dec 31	Total		2000.00	

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>
--University of Delaware	Towing multiple plankton samplers to study the verticle distribution of the cosomatous pteropods in relation to water masses.	
--University of California	Sampling deeper than 200 meters to study the systematics and distribution of marine mites.	
--Division of Fishes National Museum of Natural History Smithsonian Institution	Long line fishing for several hundred specimens for a study of the distribution of the common sharksucker.	
--University of North Carolina	Trawling, gill net, and long line collection of samples for systematic and distribution studies of sharks and their relatives.	
--Department of invertebrate Zoo- logy, Smithsonian Institution	Mid-water trawling for studies of the systematics, distribution and ecology of pelagic Cephalopods.	
--Department of Paleobiology Smithsonian Institution	Dredging, coring and bottom photography to study the morphology of sediments and sub-bottom.	
--Massachusetts Institute of Technology	Deep lowerings of coring and grab sampling equipment for study of the deepest Mediteranean geological structures.	
--Woods Hole Oceanographic Institution, Massachusetts	Submergible dives to explore the water transport over the Scarpanta sill in the Eastern Mediterranean.	
--University of New Hampshire	Ecology of deep sea animals.	
--Lamont-Doherty Geological Observatory, Columbia	Ecology of skeletal plankton (foraminifera and pteropods)	
--University of Georgia	Distribution of organic chemicals and trace elements.	

FY 1972 Subtotal Estimate for On-going Research

1,333,000

C-15

B. Pending Projects

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
✓ 1. Smithsonian Institution Department of Botany	To initiate flora and vegetation studies of a district of Mysore State in the Ghat Mountains of Southwest India and to prepare collections for the Smithsonian's National Herbarium.	1972est.	20, 000
2. University of Georgia	To initiate studies of the interaction of human and small rodent populations in a variety of temperate zone environments in conjunction with the Ecological Institute of the Polish Academy of Sciences.	1972est.	25, 000
✓ 3. Smithsonian Institution Office of Environmental Studies	To initiate studies of the behavior of elephants and primates in India coordinated with base line studies already conducted in Ceylon.	1972est.	50, 000
4. Union College, Schenectady, N. Y.	To collect and study the plankton communities of the Nile River Delta with special reference to the changes in salinity and circulation caused by interruption of seasonal river fluctuation by the Aswan Dam.	1972est.	50, 000
✓ 5. Smithsonian Institution, Program of Oceanography and Limnology	To collect and conduct taxonomic studies of the marine fauna of West Pakistan's continental shelf.	1972est.	50, 000
✓ 6. Gulf Coast Marine Lab., Mississippi, and Division of Fishes, National Museum of Natural History, Smithsonian Institution	To conduct systematic and behavioral studies of flatfishes and gobioid fishes in collaboration with the Zoological Survey of India.	1972est.	25, 000
✓ 7. Smithsonian Institution Division of Invertebrate Paleontology	To study in Tunisia the broadly distributed fossil ostracod which reveals through its varied physical appearance much about the climate and geography of the geologic era in which it lived.	1972est.	75. 000 <u>1</u> /

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
✓ 8. Smithsonian Institution Office of Environmental Sciences	To conduct in Egypt a symposium on the Biological control of the snail, carrier of the disease, bilharzia, in the newly formed reservoirs and canals associated with the Aswan dam in Egypt.	1972est.	20,000
✓ 9. Smithsonian Institution Office of Environmental Studies	To collect for the U.S. National Museum and study the flora of the long neglected areas of India particularly the Malabar and the Karomandel Coasts, and the Nilghiri and Khasis Hills--areas which served as sources of materials for classic botanical studies made as long ago as the 17th Century and badly in need of revision.	1972est.	20,000
10. University of Georgia	To study organic productivity and nutrient cycling in tropical ecosystems in collaboration with the Hindu University of Benares, India. This study has been proposed to the National Committees for the International Biological Program of both the United States and India.	1972est.	42,000
11. Missouri Botanical Gardens	To initiate a comprehensive program of the study of the flora of Morocco with bio-systematic studies of flowering plants.	1972est.	100,000 ^{1/}
12. Ohio University	To study the pollution condition of Lake Tunis in Tunisia.	1972est.	100,000 ^{1/}
13. Queens College, University of the City of New York	To conduct museum studies of unique specimens of fossil mammals in Poland in connection with studies of evolution.	1972est.	2,000 ^{2/}
✓ 14. Office of Environmental Studies, Oceanography and Limnology Program Smithsonian Institution	To initiate study of the existing ecosystem of the Eastern Arabian Sea through oceanographic cruises undertaken in cooperation with the Indian National Institute of Oceanography.	1972est.	40,000

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U.S. Dollars</u>	
✓ 15. Office of Environmental Studies, Oceanography and Limnology Program Smithsonian Institution	To initiate a multi-year program of study of the ecology of coral reefs in India.	1972est.	56,000
16. Oak Ridge National Laboratory Oak Ridge, Tenn.	As a part of United States research under the International Biological Program, to conduct cooperative research in Poland on temperate zone forest and grassland ecosystems supplementing studies conducted in the United States.	1972est.	25,000
17. Pennsylvania State University	As a part of United States research under the International Biological Program, to conduct comparative studies of human adaptability at high altitudes in India.	1972est.	50,000
18. University of Minnesota	As a part of United States research under the International Biological Program, to study biological rhythms in the catfish in India.	1972est.	25,000
19. Pennsylvania State University and the University of Minnesota	As a part of United States research under the International Biological Program, to study in South Asia the international spread of plant disease by means of airborne organisms.	1972est.	50,000
20. University of Utah	As a part of United States research under the International Biological Program, to conduct comparative studies in the arid climates of Tunisia and India supplementing studies conducted in the United States.	1972est.	175,000 ^{1/}
21. University of Colorado	To initiate systematic studies of the flora of Yugoslavia.	1972est.	49,000 ^{2/}
<u>Subtotal Pending Biological Research</u>			1,049,000

C. New Projects

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
1. Utah State University	To study in India, the ecology and behavior of the one-horned rhinoceros, an endangered species, surviving in the Kaziranga Wildlife Sanctuary.	1972est.	69,000 ^{2/}
2. University of Texas	To conduct studies of the ecology of Indian ungulates in the wildlife sanctuaries of Rajasthan.	1972est.	30,000
3. University of Nevada Desert Research Institute	To conduct in Morocco studies in desert ecology parallel to those conducted in Nevada.	1972est.	200,000 ^{1/}
4. University of California, Davis	To conduct in East Pakistan studies related to man's evolution through research in the ecology and behavior of the Hoolock Gibbon which seasonally changes its single-family territorial behavior to multi-family foraging group organization.	1972est.	25,000
✓ 5. National Museum of Natural History, Smithsonian Institution	To initiate ecological and behavioral studies of rhesus monkeys and langurs in India.	1972est.	30,000
6. Dartmouth College Hanover, New Hampshire	To conduct studies of the ecology of Lake Ohrid and its drainage basin in Yugoslavia.	1972est.	50,000
✓ 7. Office of Environ- mental Sciences, Smithsonian Institution	To develop a cooperative program in environmental management employing Lake Skadar in Yugoslavia and the Smithsonian's Chesapeake Bay Center for Environmental studies as the study areas. Such studies will provide the foundation for sound economic planning and development limiting man's degradation of his environment.	1972est.	100,000
✓ 8. Department of Invertebrate Zoo- logy, National Museum of Natural History	To initiate studies of the systematics and zoogeography of the stomatopod crustaceans on the eastern coast of India.	1972est.	20,000

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
9. Chico State College, Californai	To collect for systematic studies, ants and parasites associated with man in Tunisia and Guinea.	1972est.	15,000
10. University of Washington, College of Forest Resources	To study geographic variation of the forest tree species <u>Shorea</u> <u>robusta</u> and the ecological basis for the variations, and to detect seed sources best for reforestation.	1972est.	14,000
11. University of Illinois at Chicago Circle	To trace the evolutionary relation- ships among Upper Cretaceous teleostean fishes through collection and study of those found in the Yugoslav Dalmatian Cretaceous outcroppings.	1972est.	10,000
✓ 12. Office of Environ- mental Sciences, Smithsonian Institution	To initiate a survey of the rapidly disappearing India tiger and to study its ecology preliminary to development of conservation plans.	1972est.	15,000
✓ 13. Smithsonian Tropical Research Institute, Panama	To initiate a program for com- parative studies in evolutionary ecology in India including environ- mental monitoring.	1972est.	40,000
<u>Subtotal New Biological Research Proposals</u>			618,000
<u>Total Biological Research</u>			3,000,000

IV. Museum Programs

A. On-going Projects

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U.S. Dollars</u>	
✓ 1. U.S. National Museum	To assist, under the U.S. National Museum Act, with museum expertise and support the program of the International Council of Museums (ICOM), a UNESCO affiliate, to develop teaching museums of science and technology in Asia and Africa. For example, the Smithsonian contributed in FY 1969 to studies resulting in recommendations to ICOM that there be established in India a laboratory for basic exhibits in science and technology where teaching exhibits will be built for circulation in industrializing countries. The experiment will provide opportunities to American Museum Specialists to observe the effectiveness of exhibits in teaching basic science and technology to people of all cultural backgrounds.	1972est. 1971est. 1970 1969	80,000 55,000 19,056 20,000
<u>Subtotal On-going Museum Programs</u>			80,000

B. Pending Projects

✓ 1. National Collection of Fine Arts and Smithsonian Traveling Exhibition Service	To prepare an exhibit catalogue, to be the first scholarly publication on a unique collection at Benares Hindu University, of miniature paintings of the Moghul period of Indian art for distribution through American museums exhibiting such art treasures, for the first time, in the United States.	1972est.	5,000
✓ 2. American Association of Museums and the United States National Museum	To initiate a program of professional training for museum curators and technicians in collaboration with museums of India, Pakistan, Tunisia and Egypt through two-way exchanges of personnel for on-the-job training. Participants would be expected to serve at least six months in a museum housing collections of direct importance to their professional development.	1972est.	85,000
<u>Subtotal Pending Museum Programs</u>			90,000

C. New Projects

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
✓ 1. Smithsonian Traveling Exhibition Service	To prepare an exhibition of Pakistani ethnographic materials and accompanying scholarly catalogue for circulation to United States Museums and universities.	1972est.	20, 000
✓ 2. Division of Ethnic and Western Cultural History, National Museum of History and Technology	To study and collect in Poland ethnographic materials to supplement national collections for circulation to United States educational and cultural organizations.	1972est.	20, 000
✓ 3. National Museum of History and Technology	To study in Poland and Yugoslavia the cultures of origin of im- migrant Americans and make ethnographic collections to be used in preparing U. S. Bicen- tennial Exhibits.	1972est.	10, 000
<u>Subtotal New Museum Programs</u>			50, 000
<u>Estimated Total Museum Programs</u>			220, 000

V. Astrophysics

A. On-going Projects

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>	
✓ 1. Hunter College of the City University of New York and Smithsonian Astro- physical Observatory	To continue computer analysis in Israel of the application of principles of plasma physics concerning the movement of particles at extremely high speeds to the movement of celestial bodies in galaxies-- a study of the collective be- havior of self-gravitating systems.	1972est. 1971est. 1970 1969 1968	15, 000 15, 000 13, 450 5, 400 41, 810
✓ 2. Smithsonian Astro- physical Observatory	To continue studies in Israel comparing theories developed separately of the nature of the interior and of the exterior of evolving stars.	1972est. 1971est. 1970 1969	15, 000 15, 000 11, 200 27, 270

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>	
✓ 3. Smithsonian Institution Office of the Secretary	To assist in studies sponsored by newly created Center for Short-Lived Phenomena, a clearing house for the receipt and dissemination of information concerning rare or infrequent natural events that might otherwise go unobserved or uninvestigated, such as remote volcanic eruptions, the birth of new islands the fall of meteorites and large fire balls and sudden changes in biological and ecological systems.	1972est. 1969	10,000 9,540
✓ 4. Smithsonian Astro- physical Observatory	To record and analyze, together with data from around the world, at the Uttar Pradesh State Observatory, India, film exposures of suspected flare stars, a relatively newly discovered class of variable stars, with radio and optical energies several orders of magnitude higher than emissions from the largest solar flares.	1972est. 1970	12,000 11,440
✓ 5. American University in Cairo and Smith- sonian Astrophysical Observatory	To conduct research in theories of planetary motion in Egypt.	1972est. 1971	20,000 23,634
✓ 6. Harvard University and Smithsonian Astrophysical Observatory	To conduct studies of thermal emission and absorption of diatomic molecules in India.	1972est. 1971est.	20,000 20,000
✓ 7. Smithsonian Astro- physical Observatory and consortium of United States Astro- nomical Research Institutions	To conduct coordinated 24 hour observation of astronomical phenomena in collaboration with Israeli institutions employing telescopes in the western United States, Chile and Israel.	1972est. 1971est. 1970	70,000 142,000 275,200
-- U. S. Naval Research Laboratory, Washington, D. C. and Massachusetts Institute of Tech- nology	To conduct optical and photo- electric monitoring of X-ray sources.		

<u>Recipient</u>	<u>Project</u>	<u>Grant Expressed in U. S. Dollars</u>	
--California Institute of Technology	To conduct photoelectric monitoring of the continuum and line emission from quasi-stellar objects (QSO) and the nuclei of N-type galaxies.		
--Smithsonian Astro- physical Observatory	To conduct a high-dispersion abundance analysis of stars in the Pleiades.		
--State University of New York at Stony Brook	To determine the rate of star formation in young clusters.		
--Harvard College Observatory, Cambridge, Mass.	To conduct photometric obser- vations of the High Balmer Lines (near the Balmer Limit) and the Balmer Continuum in Planetary Nebulas.		
8. Harvard University	To conduct laboratory studies in India of the excitation pro- cesses in stellar, planetary and cometary atmospheres.	1972est. 30,000 1971est. 41,700	
<u>Subtotal Estimate for On-going Research</u>			192,000

B. Pending Projects

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
✓ 1. Smithsonian Astro- physical Observatory Cambridge, Mass.	To investigate solar radiation pressure perturbations upon the Passive Geodetic Earth-Orbiting Satellite (PAGEOS) in collabo- ration with the University of Warsaw and the Polish Academy of Sciences.	1972est. 72,000	
✓ 2. Smithsonian Astro- physical Observatory	To measure air glow and iono- spheric characteristics at the magnetic equator in studies con- tributing to the understanding of the nature of the upper atmosphere and of some of its effects on satellites.	1972est. 18,000	

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U.S. Dollars</u>	
✓ 3. Smithsonian Astro- physical Observatory	To initiate support for studies in geodesy, geophysics and celestial mechanics based on the tracking of man-made satellites at the Naini Tal astrophysical observing station in India.	1972est.	10,000 ^{2/}
4. University of Hawaii	To study the variations in the earth's gravity in India for a better understanding of its geological diversity and tectonic history particularly as it contributes to an understanding of continental drift.	1972est.	20,000 ^{2/}
5. University of California San Diego	To study in India the effects of cosmic rays on terrestrial and extra-terrestrial materials.	1972est.	8,000 ^{2/}
<u>Subtotal Pending Research</u>			128,000

C. New Projects

1. Duke University Durham, North Carolina	To study sedimentation at Bahiret el Bibane on the shores of Tunisia.	1972est.	32,000 ^{2/}
✓ 2. Smithsonian Astro- physical Observatory	To initiate in India a program in indirect atmospheric measurements using radio tropospheric scatter techniques.	1972est.	12,000
✓ 3. Smithsonian Astro- physical Observatory	To initiate in Poland geophysical studies employing very long base-line interferometry techniques particularly studies of continental drift, polar wandering and satellite tracking.	1972est.	76,000
✓ 4. Smithsonian Astro- physical Observatory	To study in Poland the nature of stellar atmospheres.	1972est.	30,000

<u>Recipient</u>	<u>Project</u>	<u>Estimated Request in U. S. Dollars</u>	
✓ 5. Smithsonian Astro- physical Observatory	To supplement in Poland, United States contributions to the International Satellite Geodesy Experiment, a world-wide program sponsored primarily by the Committee on Space Research of the International Council of Scientific Unions.	1972est.	30,000
<u>Subtotal Estimate for New Research</u>			180,000
<u>Total Astrophysical Research</u>			500,000
VI. <u>Program Development and Administration</u>			
✓ 1. Smithsonian Institution Office of International Activities	To defray costs of inspection and audit of field research sites and costs of negotiation with host governments on program operations--costs which increase in step with the increasing numbers of active grants.	1972est. 1971 1970 1969 1968	30,000 20,000 20,000 15,000 10,000
<u>Total Program Development and Administration</u>			30,000
GRAND TOTAL			\$5,500,000

MUSEUM PROGRAMS AND RELATED RESEARCH
(SPECIAL FOREIGN CURRENCY PROGRAM)

Commitment of Funds by Country

Fiscal Years 1970, 1971 and 1972

Country	1970 Actual	1971 Estimate	1972 Estimate
Burma	\$ --	\$ 1,000	\$ --
Ceylon	661,242	--	--
Egypt	154,411	250,000	300,000
Guinea	--	5,000	10,000
India	475,348	600,000	1,500,000
Israel	946,659	750,000	600,000
Morocco	72,947	150,000	600,000
Pakistan.....	27,048	140,000	250,000
Poland	71,938	64,000	420,000
Tunisia.....	623,883	200,000	1,200,000
Yugoslavia.....	532,773	340,000	620,000
	<u>\$3,566,249</u>	<u>\$2,500,000</u>	<u>\$5,500,000</u>

CONSTRUCTION AND IMPROVEMENTS
NATIONAL ZOOLOGICAL PARK

1970 Appropriation \$600,000
1971 Appropriation \$200,000
1972 Estimate \$200,000

In 1963, Congress approved the concept of a 10-year master development plan for the National Zoological Park. Funds, averaging \$1.8 million a year, were appropriated from 1963 to 1968 in support of the master plan. The Bird House, Great Flight cage, deer area, hoofed-stock area, Hospital and Research building, roads and parking lots, utilities, sewerage, heating plant, and improvements in the electrical distribution system were all completed using the original master plan and the funds appropriated by Congress. In fiscal year 1968, Congress appropriated only \$400,000 and work was scaled down to only those improvements required to extend the useful life of the facilities not yet replaced and some minor repair projects. Improvements to the Zoo's facilities were further slowed in 1970 because the Zoo was required to reimburse the District of Columbia \$168,000 for contractor claims resulting from fiscal years 1964 and 1965 work. In addition, in February 1970 a portion of the master plan was rejected by the Commission of Fine Arts. This rejection means that the plans for the future physical development of the Zoo must be revised embodying a different philosophy of design. We have just entered into a contract with the architectural firm of Faulkner, Fryer & Vanderpool for a revision and updating of the Master Plan, including schematic drawings for all facilities. This will give us the most complete overall plan we have ever had. We will have more reliable cost estimates at today's construction cost levels. We plan to take a hard look at the construction and rehabilitation of the entire Zoo at this time. We will have an opportunity to take advantage of the very latest techniques in animal habitat as well as the accommodation of the visitor. This will require a minimum of one to two years' design effort. In the interim, an appropriation of \$200,000 is requested to continue to work on the large backlog of deferred renovation and repair projects such as the following.

- The perimeter fence is in a bad state of repair and presently, due to vandalism, floods in Rock Creek, as well as deterioration from age, does not afford the security that the Zoo requires. In August 1970, the Zoo lost four waterbucks as the result of an attack by two stray dogs that entered through openings in the fence. The length of the present fence is 3.7 miles. It crosses Rock Creek twice. Probably 70 percent of the fence will have to be replaced and an engineering design will be required at the points where the enclosure crosses Rock Creek in order to prevent future washouts by the creek when at flood stage.
- The addition of a new water main loop at the south end of the Zoo is needed in order to correct water pressure deficiencies in the area of the Lion House and to insure an adequate supply of water for the boiler plant, which has been rehabilitated.

- Many of the existing buildings are in need of attention beyond the routine maintenance accorded them. The Commissary in the basement of the Reptile House that handles food for the entire animal population of the Zoo requires new equipment along with replacement and remodeling of much of the present equipment. The old Hospital, which has been vacated by the Animal Health Department, requires remodeling to accommodate the Department of Living Vertebrates. The Bird House area requires replacement of the existing crane, pheasant, and owl cages which are badly deteriorated and require repair.
- The sidewalks are in need of repair and some need to be replaced.

RESTORATION AND RENOVATION OF BUILDINGS

1970 Appropriation.....	\$425,000
1971 Appropriation.....	\$1,725,000
1972 Estimate.....	\$1,050,000

An appropriation of \$1,050,000 is requested for the following projects:

Renwick Gallery	\$400,000
National Museum of History and Technology	500,000
Sewer System Improvement-South Buildings	125,000
Lamont Street Library Improvements	25,000
Total estimate 1972	<u>1,050,000</u>
Less amount appropriated in 1971	<u>1,725,000</u>
Decrease in 1972	<u>\$-675,000</u>

Renwick Gallery

An appropriation of \$400,000 is requested to complete the program of exterior and interior restoration of the Renwick Gallery.

Using funds previously appropriated, the Smithsonian has directed its efforts at the restoration of the Renwick Gallery's basic structure. An air cooling plant was installed in the Gallery. The need for this system was not anticipated in the FY 1971 budget request. As part of the restoration process, an air conditioning system was installed in the building which could use cold water supplied by the General Services Administration. The Smithsonian was informed late last year by the GSA that cooling water could only be supplied on a 5-day week, 8-hour, basis. In order to meet the needs of the museum which must maintain a constant temperature and humidity to safeguard the collections; it was necessary to install a revised cooling plant. The exterior stonework, entranceways, and the interior corridors, lobbies and galleries have been renovated to the point where the final or finishing work can be started. This finishing work, the full extent of which could not be determined until the basic structural work was completed, includes the replacement of the sidewalk around the building, exterior lighting fixtures, the cast iron grillwork on the roof and windows, the finishing, painting and gilding of arches and columns, marbleizing of woodwork in the central halls and stairways, and the replacement of damaged marble in the floor of the building. This work will be designed to restore the exterior and certain areas of the interior of the building to their original appearance, as designed by James Renwick in 1859.

In addition, it is necessary to complete storage facilities, to provide gallery furnishings for use by the public in the restored interior areas of the building, and to recast exterior sculpture for the facade as well as to install an essential bird-proofing system.

National Museum of History and Technology Bicentennial Facilities

An appropriation of \$500,000 is requested for the preparation of plans and specifications for the Bicentennial facilities to be added to the National Museum of History and Technology, and to design exhibits for these facilities.

As part of the Smithsonian's contribution to the American Revolution Bicentennial celebrations, the National Museum of History and Technology plans to convert the terraces of its building into usable space by the construction of structures on the sides of the building. The purpose of these structures will be to house certain national treasures and exhibits relating to the twin themes

of the Museum's Bicentennial participation--what the nations of the world gave to make the United States of America, and in turn what the United States has given to the nations of the world.

The National Museum of History and Technology will conclude a feasibility study for the Bicentennial structure project in fiscal year 1971. The completion of the study will permit the Museum to proceed on July 1, 1971, with developing final architectural plans. Construction would begin in fiscal year 1973 and be completed no later than January 1, 1975, to allow one year for installation of exhibitions. Total structural costs are estimated to be \$4,500,000, while the exhibits will cost an additional \$1,000,000.

Sewer Systems Improvements-South Buildings

An appropriation of \$125,000 is requested to correct a serious sewer problem for the buildings on the south side of the mall.

The three Smithsonian buildings on the south side of the Mall, Smithsonian Building, Arts and Industries Building, and the Freer Gallery of Art, empty both their sanitary wastes and rainwater runoff into the District of Columbia sewage system through single pipe systems. This type of system has two serious drawbacks--overloading the treatment plants and a tendency to backflow during heavy rains. Because the rainwater runoff and the sanitary system wastes are mixed, large quantities of polluted water are discharged into the river. The District of Columbia is in the process of converting to a separate system to reduce the load upon the already overloaded sewage treatment plants. The Smithsonian must be able to tie into this system. In addition, flooding of the buildings during heavy rains, because of the limited ability of the pipes to carry off rain water, occurs frequently. By replacing the single pipe system with separate and larger sanitary and drain pipes, flooding can be eliminated.

Lamont Street Library Modifications

An appropriation of \$25,000 is requested to modify space at the Smithsonian's Lamont Street facility to house library materials.

At the present time, the library is extremely short of shelf space for library materials. A study of available space at the Smithsonian showed that the space formerly occupied by the Department of Entomology at Lamont Street, which recently moved back to the Natural History Building, could be modified by the addition of flooring, partitions, shelving and lighting to serve as an overflow facility for library materials. The library is temporarily storing about 40,000 books in cartons and boxes at the Lamont Street facility because of lack of space in the Mall buildings. With the modifications about 50,000 volumes could be handled at this facility, all of which would be accessible for use by researchers.

CONSTRUCTION

1970 Appropriation.....\$3,500,000 $\frac{1}{/}$
1971 Appropriation.....\$5,200,000 $\frac{1}{/}$
1972 Estimate.....\$5,597,000 $\frac{1}{/}$

CONSTRUCTION

Joseph H. Hirshhorn Museum and Sculpture Garden

By the Act of November 7, 1966, the Congress provided a site on the Mall for the construction of the Joseph H. Hirshhorn Museum and Sculpture Garden, and provided statutory authority for the appropriation of construction and operating funds. Within this appropriation authority, \$803,000 were appropriated in fiscal year 1968 for the preparation of plans and specifications. In fiscal year 1969, \$2,000,000 were appropriated for plans and to start construction. Contract authorization was granted by language in that appropriation bill in an amount not to exceed \$14,197,000. An additional \$3,300,000 was appropriated in 1970 and \$5,200,000 in 1971 toward liquidation of the contract authority.

Construction was started in March 1970 and the excavation and foundation construction is in progress. Construction is proceeding on schedule with no major delays being anticipated at this time. An appropriation of \$3,697,000 is requested for fiscal year 1972 in order to liquidate the remaining contract authority. This appropriation, with the \$1,000,000 legally committed by Mr. Hirshhorn, will complete funding of construction contracts and finance supervision and related construction management costs. This will allow for the completion of the construction in time for the planned opening of the Museum in late fiscal year 1973.

CONSTRUCTION

National Air and Space Museum Planning

The Act of August 12, 1946, established the National Air Museum as a bureau of the Smithsonian Institution. The Congress included provisions for selecting a site for a National Air Museum building to be located in the Nation's Capital. By the Act of September 6, 1958, the Congress designated a site for a building to be on the Mall from Fourth Street to Seventh Street, Independence Avenue to Jefferson Drive. Planning appropriations in the amount of \$511,000 and \$1,364,000 were made available to the Smithsonian by the Congress for the fiscal year 1964 and 1965 respectively. In 1966, the Congress enacted legislation authorizing the construction of the National Air and Space Museum but deferred appropriations for construction until expenditures for the Vietnam conflict had shown a substantial reduction. Construction plans and specifications for the proposed museum building were completed and were accepted by the Commission of Fine Arts and the National Capital Planning Commission. The cost of the buildings, built to those plans and specifications, was estimated to be \$40 million dollars in 1965. Unfortunately due to the rising costs of labor and materials, this same building would cost between \$60 million and \$70 million, to construct depending on the increase in costs and the date of the beginning of construction.

The space program, with its Mercury, Gemini, and Apollo flights, has caused a considerable increase in the public's interest in aeronautical and aerospace matters. During 1970, almost 4.5 million visitors were counted in the Arts and Industries Building and the Air and Space Building, both of which

1/ Fiscal year 1970 and fiscal year 1971 liquidation of Contract Authority.
Fiscal year 1972 \$3,697,000 liquidation of Contract Authority. \$200,000 in 1970 was appropriated to move the Armed Forces Institute of Pathology.

are used to house temporarily a very small portion of the collections and exhibits of the National Air and Space Museum. With the additional space available in the new building, the National Air and Space Museum will be able to use a wide range of the more than 200 aircraft and thousands of aerospace objects in the collections to interpret the historical and technological progress of aviation and aerospace science to the millions of visitors that will come to the Museum annually. The Air and Space Museum already has in its collections such historically significant aircraft as the original Wright Brothers Flyer, Lindburgh's "Spirit of St. Louis," the NC-4 (the first to fly the Atlantic), the Bell X-1 (first to exceed the speed of sound) as well as Mercury, Gemini, and Apollo spacecrafts. To demonstrate and exhibit technological progress, the Museum can choose from literally hundreds of engines, power plants, and ancilliary equipment ranging from simple rotary engines built at the turn of the century to the huge Saturn F-1 engine which produces millions of pounds of thrust. This collection of aeronautical and aerospace items which many consider the finest in the world, needs only the additional space provided by a new Museum to be displayed properly to the public.

During a Symposium on the National Air and Space Museum which was held on January 18, 1971, Senator Barry Goldwater, Dr. Wernher von Braun, Congressman Frank T. Bow, and Congressman James G. Fulton jointly proposed the following resolution be presented to the Board of Regents of the Smithsonian Institution.

--That the Smithsonian Institution should press for construction of the authorized National Air and Space Museum building;

--That a study of changes in the original approved design should be undertaken immediately in order to determine the feasibility of lowering construction costs;

--That a firm date of July 4, 1976, should be established for the opening of the new museum building as a major element of the Smithsonian Institution's contribution to the commemoration of the Bicentennial of the American Revolution;

--That consideration be given to constructing a major underground parking facility beneath the Mall in order to alleviate the increasing problem of automobile parking in the vicinity of the Mall;

--That consideration of the joint venture by the National Park Service and private capital be explored. This action would complement the requirement for parking facilities as a significant factor in construction of the National Air and Space Museum.

In consideration of the rising costs of the building and the increased public interest in air and space activities, an appropriation of \$1,900,000 for planning and redesign, and for the specifying of programs, facilities, and installations is requested. The object of this redesign would be to utilize the latest design, construction, and exhibit techniques to lower the cost of the building to approximately \$40 million, ~~which~~ still providing outstanding facilities to display properly the many unique aeronautical and astronautical items in the collections.

The Senate Committee on Rules and Administration has advised that a request by the Smithsonian for redesign funds would be consistent with the Committee's 1966 recommendation regarding construction funding.

Smithsonian Institution Current Building Program

<u>Project</u>	<u>Est. Total Cost</u>	<u>Appropriated to Date</u>	<u>Fiscal Year 1972 Request</u>
Construction and Improvements, National Zoological Park	\$20,000,000 (depending on redesign)	\$8,703,000	200,000 ^{1/}
Restoration and Renovation of Buildings	Continuing Program	8,323,000	1,050,000 ^{2/}
Construction, Joseph H. Hirshhorn Museum and Sculpture Garden	15,000,000 ^{3/}	11,303,000	3,697,000 ^{4/}
Construction, National Air and Space Museum	44,775,000 (depending on redesign)	1,875,000	1,900,000 ^{5/}

1. Buildings and facilities repair and maintenance.
2. Renwick Gallery completion (\$400,000) planning and design of Bicentennial facilities and exhibits on the History and Technology Building (\$500,000), sewer system improvements (\$125,000), and library improvements at Lamont Street (\$25,000). Total estimated cost of Bicentennial facilities is \$4,500,000.
3. Excludes \$200,000 for relocation of the Armed Forces Institute of Pathology and \$1,000,000 legally committed by Mr. Joseph H. Hirshhorn for construction.
4. Liquidation of contract authority of \$14,197,000 provided in fiscal year 1969 appropriation act.
5. Building planning and redesign.

SMITHSONIAN INSTITUTION

"SALARIES AND EXPENSES"

Report on the Number of Permanent Positions by Organization Unit

	1970 <u>Actual</u>	1971 <u>Estimate</u>	1972 <u>Estimate</u>	Increase 197 1 ² over <u>1970</u>
National Museum of Natural History	258	271	349	78
Smithsonian Astrophysical Observatory . . .	57	57	57	0
Smithsonian Tropical Research Insititute	40	45	57	12
Radiation Biology Laboratory	36	40	46	6
Office of Environmental Sciences	23	34	42	8
National Air and Space Museum	41	41	44	3
Center for the Study of Man	6	7	10	3
Center for Short-Lived Phenomena	0	1	4	3
National Zoological Park	0	249	297	48
Museum of History and Technology	158	158	157	-1
National Collection of Fine Arts	59	70	72	2
National Portrait Gallery	30	37	38	1
Joseph H. Hirshhorn Museum and Sculpture Garden	13	18	21	3
Freer Gallery of Art	7	7	8	1
Archives of American Art	0	0	11	11
National Armed Forces Museum Adv. Bd.	8	8	6	-2
Office of Museum Programs	7	9	9	0
Exhibits	167	167	164	-3
Conservation Analytical Laboratory	11	11	14	3
Registrar	29	29	30	1
Anacostia Neighborhood Museum	9	11	15	4
Office of International Activities	8	8	9	1
International Exchange Service	9	9	9	0
Performing Arts	7	7	7	0
Public Affairs	12	12	12	0
American Revolution Bicentennial	0	2	2	0
Environmental Sciences Program	0	3	8	5
Major Exhibitions	0	0	0	0
National Museum Act	0	0	3	3
Academic & Educational Programs	18	20	23	3
Research Awards	0	0	0	0
Secretary	38	38	40	2
General Counsel	8	8	9	1
Treasurer	31	31	33	2
Personnel	26	28	29	1
Libraries	49	54	63	9
Press	23	25	25	0
Information Systems Division	13	14	16	2
Archives	6	6	6	0
Photographic Services Division	20	20	20	0
Supply Division	21	21	21	0
Administrative Systems Division	9	9	9	0
Duplicating	7	7	7	0
Other Central Support	13	13	13	0
Buildings Management Department	748	768	793	25
Woodrow Wilson International Center for Scholars	8	0	0	0
Total	2,033	2,373	2,608	235

SMITHSONIAN INSTITUTION
"Salaries and Expenses"

Report of Obligations by Objects

	1970 Actual	1970 ¹ Estimate	1972 Estimate	Increase or Decrease(-) '72 over '71
11 Personnel Compensation ..	\$20,631,000	\$25,126,000	\$28,000,000	\$2,874,000
12 Personnel Benefits.....	1,564,000	1,942,000	2,177,000	235,000
21 Travel & Transportation of Persons.....	313,000	329,000	527,000	198,000
22 Transportation of Things..	210,000	180,000	253,000	73,000
23 Rent, Communications, and Utilities.....	1,889,000	2,349,000	2,656,000	307,000
24 Printing and Reproduction.	597,000	885,000	1,095,000	210,000
25 Other Services.....	2,397,000	3,297,000	5,376,000	2,079,000
26 Supplies and Materials....	1,048,000	1,204,000	1,763,000	559,000
31 Equipment.....	1,355,000	1,012,000	3,134,000	2,122,000
41 Grants.....	8,000	8,000	23,000	15,000
Total Obligations	\$30,012,000	\$36,332,000	\$45,004,000	\$8,672,000

Appropriation Adjustments:

Receipts and Reimbursements from Federal Funds.....	-61,000	0	0	0
Unobligated balance lapsing...	14,000	0	0	0
<u>Appropriation or estimate....</u>	<u>\$29,965,000</u>	<u>\$36,332,000*</u>	<u>\$45,004,000</u>	<u>\$8,672,000</u>

* Includes anticipated supplemental
of \$1,630,000.

SMITHSONIAN VISITORS
(by fiscal year)

Fiscal Year	Smithsonian Institution Building	Arts and Industries Building	Museum of Natural History	National Air and Space Building	Freer Gallery of Art	Museum of History and Technology	Fine Art and Portrait Galleries	Total ^j
1961	1,024,526	2,912,371	2,047,973	987,853	130,746	a	c	7,103,474
1962	1,222,112	3,471,050	2,113,053	1,986,319	130,597	a	c	8,923,131
1963	1,630,280	3,534,182	2,288,397	2,673,618	183,359	a	c	10,309,836
1964	1,311,061	2,457,243	2,512,306	1,854,186	168,625	2,509,774 ^a	c	10,813,195 ^b
1965	1,065,635	2,028,175	3,051,472	1,705,683	210,972	5,091,776	c	13,153,713
1966	870,010	1,746,715	2,988,006	1,494,922	222,089	4,829,112	c	12,150,854
1967	1,020,312	1,638,873	3,409,957	1,484,422	212,920	5,546,102	c	13,312,586
1968	847,176	1,344,622	3,257,957	1,123,698	169,533	4,750,023	30,888	11,523,897 ^d
1969	275,259 ^e	1,493,141	2,916,749	1,225,959	179,374	4,174,071	166,177	10,430,730 ^e
1970	^e	2,557,155 ^f	3,269,791	1,839,373	217,305	5,483,555	216,523	13,583,702 ^h
1971	681,255	1,985,732	3,454,755	1,337,445	190,425	5,955,128	194,468	13,801,208

a Museum of History and Technology opened January 1964.

b July-August 1964, certain Smithsonian Institution buildings were open 4:30 to 10 p.m. for the first time.

c National Collection of Fine Arts opened May 1968, and the National Portrait Gallery in October 1968.

d Reflects the significant decrease in visitors to the Nation's Capital in the first six months of CY 1968, due to unsettled local conditions.

e Building closed for renovation October 1968.

f Since the first display of the lunar sample in September 1969, visitors to this building have averaged approximately 213,000 per month.

g Fiscal year 1969 visitor totals represent the effect of local conditions in late 1968 on visitor attendance. During CY 1969, a total of 12,438,909 visitors came to the Smithsonian, an increase of 25 percent over CY 1968.

h Reflects a significant increase of 30 percent in visitors to the Smithsonian's museums and galleries.

j An additional 5,000,000 visitors visit the National Zoological Park annually, and 50,000 to the Anacostia Museum.



SIGNIFICANT EXHIBITS, FISCAL YEAR 1970

Natural History Building

John Wesley Powell: The Indomitable Major	Malay Archipelago
Smithsonian Science Illustrators	Annand Hammer Exhibit
Bengal Tiger	A Heritage in Peril - Alaska's Vanishing Totems
Dead Sea Scrolls, Parts I and II	Studies of South African Costumes
Daco-Roman Traces in Romania	

Arts and Industries Building

Contemporary Black American Artists	Louis Corinth
British Designer Crafts	Moon Rock
Yugoslavian Tapestry & Graphics	Toledo Glass
Urban Transit	Johannes Gutenberg
Apollo Art	Art Protis
White House Press Photographers	Polish Folk Art

History and Technology Building

Historical machinery and products of the American textile industry	"The Roots of California Culture"
Energy Conversion	"Women and Politics"
	"Laser 10"

Fine Arts and Portrait Galleries

Retrospective of the work of Milton Avery	Tibetan Art
"Explorations"	Winslow Homer
Mid-career retrospective of Leonard Baskin	Paintings and sculpture from the 1930's
	Augustus Saint-Gaudens: "The Portrait Reliefs"

Cooper-Hewitt Museum of Decorative Arts and Design

"Kabuki Prints"	Posters by E. McKnight Kauffer
Contemporary Japanese Posters	1890-1965
A Stately Pleasure Dome: "The Royal Pavilion at Brighton"	Contemporary Drawings by New York Artists
Light and Line: Etchings by Rembrandt	India Chintz

Smithsonian Institution Traveling Exhibitions

The exhibits originated at the Smithsonian with Smithsonian collections and were planned and produced by Smithsonian programs.

Jean Louis Berlandier	Werner Drewes Woodcuts
Photography and The City	The People's Choice

Performing Arts

Folk Festival on the Mall - Third Annual Event

Anacostia

The Rat: Man's Invited Affliction	"The Douglass Years" Frederick Douglass
-----------------------------------	---

CONTRACTS AND GRANTS TO THE SMITHSONIAN INSTITUTION
Fiscal Years 1970 and 1971

<u>Contracts</u>	<u>1970</u>	<u>1971</u>	<u>Grants</u>	<u>1970</u>	<u>1971</u>
<u>National Aeronautics and Space Administration</u>					
Interdisciplinary Communication	\$ 199,606	\$ 155,379	Satellite Tracking Program...	\$1,635,000	\$2,100,000
Radio Meteor Research.....	500,839	300,000	Recovery of Meteorites.....	130,000	150,000
Celelescope	747,000	900,000	Miscellaneous	155,000	275,000
Barium Cloud Experiments	132,000	201,603			
Miscellaneous	300,000	400,000			
	\$1,879,445	\$1,956,982		\$1,920,000	\$2,525,000
<u>Department of Defense</u>					
Mosquitoes in Southeast Asia...	\$ 161,895	\$ 170,000			
Diseases in Overseas Areas...	119,300	73,580			
Mammalian Parasites	100,937	95,999			
Mediterranean Biological Studies	0	133,068			
Ocean Acre	38,505	0			
Miscellaneous (Dept. Army) ...	100,000	175,000			
Miscellaneous (Dept. Navy)	95,000	125,000			
	\$ 615,637	\$ 772,647			
<u>Department of Health, Education, and Welfare</u>					
Drug Exhibit	\$ 87,538	\$ 40,000	Human Osteon Chemistry.....	\$ 41,124	\$ 35,069
			Interdisciplinary Exploration		
			of Carcinogenises Problems	94,097	86,000
				\$ 135,221	\$ 121,069
<u>Atomic Energy Commission</u>					
Protein Properties.....	\$ 15,634	\$ 15,634			
Radiation & Plant Metabolism..	70,000	70,313			
	\$ 85,634	\$ 85,947			

<u>Contracts</u>	<u>1970</u>	<u>1971</u>	<u>Grants</u>	<u>1970</u>	<u>1971</u>
			<u>National Science Foundation</u>		
Processing Antarctic Collections	\$ 136,862	\$ 142,297	Study of Neotropical		
Science Information Exchange..	1,637,367	1,600,000	Phanerograms	\$ 38,500	\$ 0
Miscellaneous	18,000	25,212	Papers of Joseph Henry	30,000	30,000
			Undergraduate Research		
	\$1,792,229	\$1,767,509	Program	24,910	0
			Miscellaneous	121,191	291,290
				\$ 214,601	\$ 321,290
			<u>National Institutes of Health</u>		
Miscellaneous	\$ 60,000	\$ 65,000			
			<u>Department of the Interior</u>		
Oil Pollution	\$ 79,375	\$ 60,000			
Water Pollution Control	86,500	75,000			
Miscellaneous	35,000	50,000			
	\$ 200,875	\$ 185,000			
			<u>Department of State - A.I.D.</u>		
MeKong Basin Project	\$ 149,276	\$ 150,000			
Int'l. Environment Assess. ...	98,370	100,000			
Miscellaneous	0	10,000			
	\$ 247,646	\$ 260,000			
			<u>Other</u>		
			Miscellaneous	\$ 30,000	\$ 50,000
Total, Contracts	\$4,969,004	\$5,133,085	Total, Grants	\$2,299,822	\$3,017,359

