A SURVEY OF ECOLOGICAL INVENTORY, MONITORING AND RESEARCH IN U.S. NATIONAL PARK SERVICE BIOSPHERE RESERVES

RESEARCH/RESOURCES MANAGEMENT REPORT No. 49

U.S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
SOUTHEAST REGION

UPLANDS FIELD RESEARCH LABORATORY
GREAT SMOKY MOUNTAINS NATIONAL PARK
TWIN CREEKS AREA
GATLINBURG, TENNESSEE 37738

The Research/Resources Management Series of the Natural Science and Research Division, National Park Service, Southeast Regional Office, was established as a medium for distributing scientific information originally prepared for park Superintendents, resource management specialists, and other National Park Service personnel in the parks of the Southeast Region. The papers in the Series also contain information potentially useful to other Park Service areas outside the Southeast Region and often benefit independent researchers working in the parks. The Series provides for the retention of research information in the biological, physical, and social sciences and makes possible more complete in-house evaluation of non-refereed research, technical, and consultant reports.

The Research/Resources Management Series is not intended as a substitute for refereed scientific or technical journals. However, when the occasion warrants, a copyrighted journal paper authored by a National Park Service scientist may be reprinted as a Series report in order to meet park informational and disseminative needs. In such cases permission to reprint the copyrighted article is sought. The Series includes:

1. Research reports which directly address resource management problems in the parks.

2. Papers which are primarily literature reviews and/or bibliographies of existing information relative to park resource management problems.

3. Presentations of basic resource inventory data.

4. Reports of contracted scientific research studies which are reprinted due to the demand.

5. Other reports and papers considered compatible to the Series, including approved reprints of copyrighted journal papers and results of applicable university or independent research.

The Series is flexible in format and the degree of editing depends on content.

Research/Resources Management Reports are produced by the Natural Science and Research Division, Southeast Regional Office, in limited quantities. As long as the supply lasts, copies may be obtained from:

Natural Science and Research Division
National Park Service
Southeast Regional Office
75 Spring Street, SW
Atlanta, Georgia 30303

A SURVEY OF ECOLOGICAL INVENTORY, MONITORING, AND RESEARCH IN U. S. NATIONAL PARK SERVICE BIOSPHERE RESERVES

Research/Resources Management Report No. 49

Alison Mack*

William P. Gregg, Jr.**

Susan P. Bratton

Peter S. White

*Cornell University
Ithaca, New York 14853

**Department of the Interior
National Park Service
Office of Science and Technology
Washington, DC 20240

Department of the Interior
National Park Service
Southeast Region
Uplands Field Research Laboratory
Great Smoky Mountains National Park
Twin Creeks Area
Gatlinburg, Tennessee 37738

August, 1981

Mack, Alison, William P. Gregg, Jr., Susan P. Bratton and Peter S. White. 1981. A Survey of Ecological Inventory, Monitoring and Research in U.S. National Park Service Biosphere Reserves. U.S. Department of the Interior, National Park Service, NPS-SER Research/Resources Management Report No. 49. 23 pp.

ABSTRACT

The investigators conducted a telephone survey of the 14 Biosphere Reserve units managed by the U.S. National Park Service. Questions assessed the completeness of the reserves' baseline resource inventory, long term monitoring, and long term ecological research programs. Geographical features and archives were the most completely represented and disturbance and aquatic systems the least completely represented items of inventory. On the average, long term ecological research of all types was poorly represented, eight of the areas having 10 percent or less of the possible research coverage. Carbon or nutrient cycling were exceptionally weak. Temperate and mountain parks tended to have more complete programs than desert and island parks. Units with in-park research laboratories and resident scientists had more complete programs than those without.

TABLE OF CONTENTS

	Page
Abstract	i
Introduction	1
Methods	2
Results	11
Discussion and Conclusions	13
Table 1. Survey of science activities in NPS-administered international Biosphere Reserves	3
Table 2. Index ratings for major science activities by Biosphere Reserve	6
Table 3. Ranking of threatened resources in U.S. National Park Service areas (from NPS 1980)	15
Table 4. Number of known and suspected threats to U.S. National Parks which are adequately documented as compared to those which require research to adequately document (from NPS 1980)	18
Figure 1. Average index ratings for baseline research by topic	8
Figure 2. Average index ratings for long term environmental monitoring	9
Figure 3. Average index ratings for long term ecological research	10
Figure 4. The number of threats reported for the Biosphere Reserves compared to the average number of threats reported for all national parks	19

INTRODUCTION

As human activities modify ecosystems and disturb an ever-increasing area of relatively pristine lands, the protection of representative ecological study sites becomes a worldwide concern. Such sites serve not only as floral and faunal conservation areas but also as examples of functioning natural ecosystems. In addition, scientists require a selected number of sites for manipulative research which quantitatively analyzes the long term effects of human interference (Johnson and Bratton 1978).

In order to meet these needs, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) Man and the Biosphere Program (MAB-8) has estabished a system of World Biosphere Reserves, available for long term ecological monitoring and research. UNESCO has designated 36 reserves in the United States, including 15 units of the National Park Service (NPS). The U.S. MAB program, jointly coordinated by the Departments of State, Interior, and Agriculture, has as a major goal the establishment of a broad-based, interdisciplinary exchange of information toward the improvement of natural reserve management (Franklin 1977, Johnson and Bratton 1978). The international MAB program is unique in its emphasis on international, multidisciplinary, multi-institutional activities, and research on long term ecosystem trends.

This paper presents the results of a preliminary survey, conducted in July and August 1980, of baseline resource inventory, long term monitoring, and long term ecological research in all U.S. NPS Biosphere Reserves. Data for 14 units (15 reserves) are reported. At the time this report was prepared, Hawaii Volcanoes and Haleakala National Parks had been recommended by U.S. MAB for designation as a single Biosphere Reserve. They were therefore surveyed together. Although officially designated as separate reserves in November 1980, the bureau presently intends to request UNESCO to redesignate these areas as the Hawaiian Parks Biosphere Reserve because of their complementary ecological resources and research programs.

METHODS

The survey was conducted by telephone over a two-week period. The major topics covered are shown in Table 1. The reserves are listed in Table 2. Each reserve's science program was discussed under six general topics: aquatic systems, macroclimate, disturbance, geological features, vegetation, and fauna, and then assessed for project representation within the broad categories of baseline inventory, environmental monitoring, and long term scientific research. Baseline inventory was defined as short term analysis of a particular ecosystem parameter; for example, measuring daily temperature for one year. Long term environmental monitoring was defined as continuous, cyclical, or periodic ongoing evaluation of a parameter normally extending (or expected to extend) for five years or more. Scientific research consisted of interpretative long term ecological studies that provide insights on structure and function at the population, community, or ecosystem level.

The form was completed in telephone conference with the park staff member(s) best qualified to report on a particular topic, whether they were scientists, resource managers, or park administrators. In most cases, the contact was requested to assess the reserve's participation in a particular topic. On the basis of the information provided, point scores were assigned according to a 4-point rating system; a program described

Table 1. Survey of science activities in NPS-administered international Biosphere Reserves.

Survey Item	Index Rating
BASELINE INVENTORY	
Geographical Features	74
Topographic maps, surface geology maps, sediment maps, aerial photography (b&w, color, satellite/high altitude)	
Bibliography of Published Work	68
Bibliographic summaries and archives	
Vegetation	44
Vegetation maps, quantitative description, floristic checklists, herbarium collection, permanent plots, aquatic community maps, site-specific floral keys, ground truth or survey	
Macroclimate	42
Air temperature, relative humidity, total/sensible/long wave radiation, precipitation, dew point, wind speed, wind direction, soil temperature, soil moisture, depth of water table, shortwave insolation, runoff/erosion, soil (composite sampling), lysimetry, snow depth, air quality--ozone, total suspended particulates, fine suspended particulates, NO_x, SO_2, CO, visibility, trace elements, pesticides, wet-fall chemistry, dry-fall chemistry	
Disturbances, anthropogenic	41
Agriculture, fire, logging, park development, visitor impact	
Fauna	39
Abundance indicator, faunal checklists, site-specific keys, specimen collection	
Aquatic Systems, Chemical Factors	34
Anions/cations, conductivity, dissolved organic carbon, heavy metals, nitrate, phosphate	

Table 1. Continued.

Survey Item	Index Rating
Disturbances, Natural	30
Alluvial processes, coastal erosion, drought, dune movement, fire, freeze-thaw processes, insert infestations, landslides/earth movements, pathogen outbreaks, windstorms	
Disturbances, Exotic Species	28
Birds, diseases, fish, insects, mammals, plants, soil fauna	
Aquatic Systems, Physical Factors	26
Dissolved oxygen, ice cover, morphology of aquatic features, pH, salinity, sediment temperature, snow depth on lakes, stream discharge, tides/lake water levels, transparency, turbidity, water levels (non tidal), water hardness, water temperature, weather monitoring at aquatic sites	
Aquatic Systems, Biological Factors	26
Bacteria, benthic invertebrates, periphyton, phytoplankton, vertebrates, zooplankton	
LONG TERM ENVIRONMENTAL MONITORING	
(see Baseline Inventory for list of factors under each principal element)	
Macroclimate	38
Aquatic Systems, Chemical Factors	31
Disturbances, Anthropogenic (causes)	25
Disturbance, Exotic Species (causes)	23
Disturbances, Anthropogenic (vegetation recovery)	22
Disturbances, Natural (causes)	22
Aquatic Systems, Physical Factors	15

Table 1. Continued.

Survey Item	Index Rating
Disturbances, Natural (vegetation recovery)	14
Disturbances, Exotic Species (vegetation recovery)	11
Aquatic Systems, Biological Factors	7
LONG TERM BIOLOGICAL RESEARCH	
Succession Studies	25
Aquatic ecosystems, terrestrial fauna, terrestrial vegetation	
Population Dynamics	19
Aquatic: amphibians, fish, invertebrates, mammals, nonvascular plants, reptiles, vascular plants, water birds	
Terrestrial: amphibians, birds, invertebrates, mammals, nonvascular plants, reptiles, vascular plants	
Primary Productivity	14
Aquatic ecosystems, terrestrial ecosystems	
Modeling	12
Aquatic ecosystems, terrestrial ecosystems (vegetation and animals)	
Inorganic Cycles	6
Nutrient cycles in nutrient and terrestrial ecosystems	
Carbon Cycle	5
Aquatic ecosystems, terrestrial ecosystems	

Table 2. Index ratings for major science activities by Biosphere Reserve

Biosphere Reserve	Index Ratings: Baseline Inventory	Index Ratings: Long Term Environ. Monitoring	Index Ratings: Long Term Ecological Research
Big Bend	23	11	0
Channel Islands	37	14	9
Everglades	61	38	30
Glacier	35	14	10
Great Smoky Mountains	62	63	35
Hawaiian Parks 1/	40	13	8
Isle Royale	34	20	29
Mt. McKinley (Denali)	32	21	5
Olympic	41	21	12
Organ Pipe Cactus	35	8	9
Rocky Mountains	48	25	15
Sequoia-Kings Canyon	47	23	10
Virgin Islands	33	7	0
Yellowstone	53	15	20
Average rating: (mean)	41	21	14

1/ Hawaiian Parks Biosphere Reserve consists of Hawaii Volcanoes and Haleakala National Parks as "comprehensive", up to date, and representative of the entire reserve was given a score of 4; a program which was in progress but not comprehensive or not entirely representative of the reserve as a whole was considered incomplete and given a score of 2; past programs, typically somewhat outdated, were given a score of 1; if no program had been instituted, a score of 0 was given. Parks were not scored on inapplicable programs (for example, measuring snow depth in the Virgin Islands). The survey responses were mailed to each participating reserve for correction to ensure accuracy and completeness.

To evaluate the detailed results of the survey, a system of index ratings was developed from the numerical scores assigned to each applicable factor in each reserve and cumulated over all applicable factors constituting a general category or topic. The index rating was then calculated as a percent of the maximum possible score for all applicable factors. The index rating, on a 100-point scale, thus indicates comprehensiveness of scientific activities by topic (Table 1; Figs. 1-3) as well as by reserve (Table 2).

We emphasize that the purpose of the survey was to document large scale strengths and deficiencies of the NPS Biosphere Reserve science program as a whole rather than to compare reserves in detail.

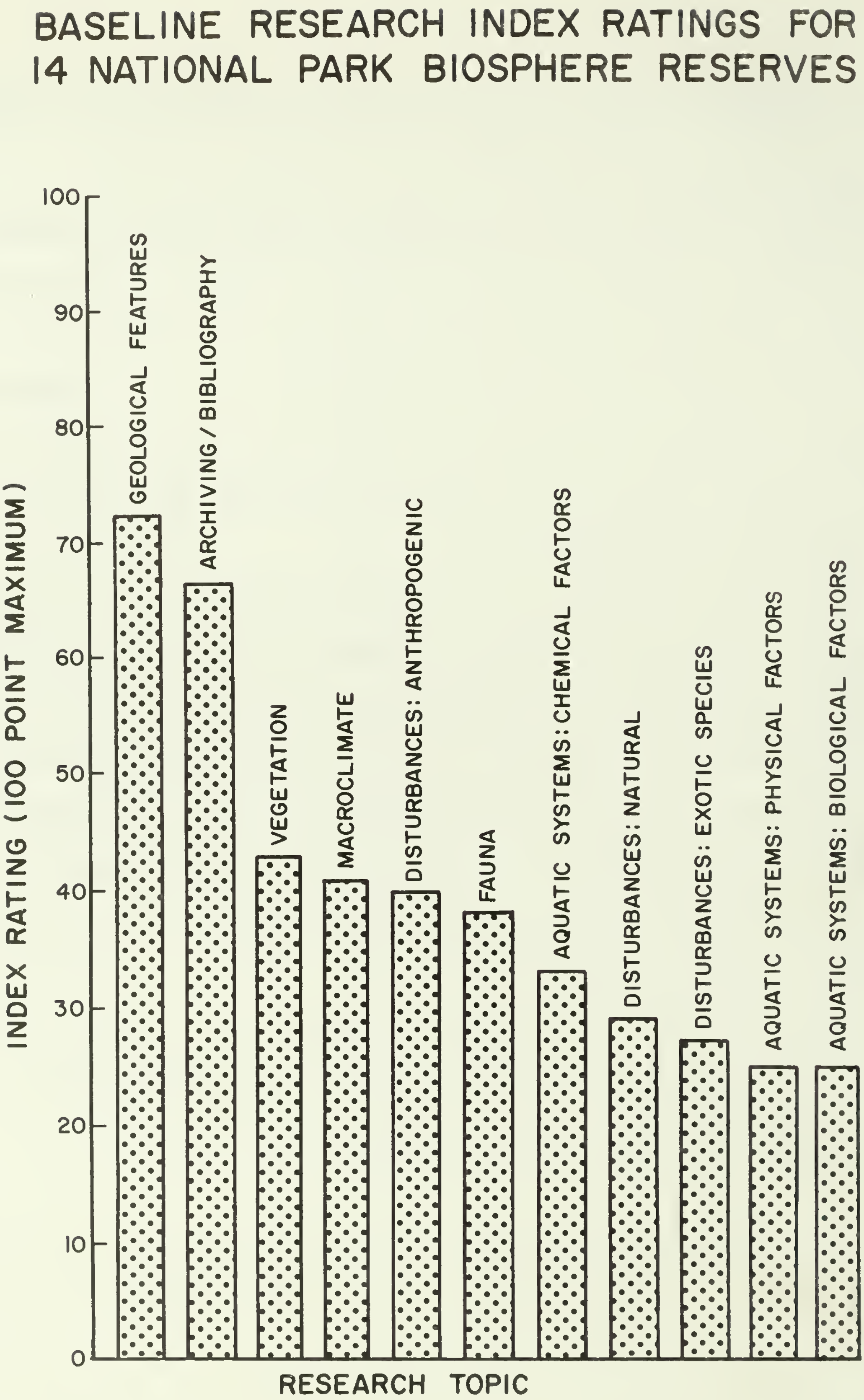

Figure 1. Average index ratings for baseline research by topic. Note the declining ratings from physical/botanical topics to aquatic and disturbance topics.

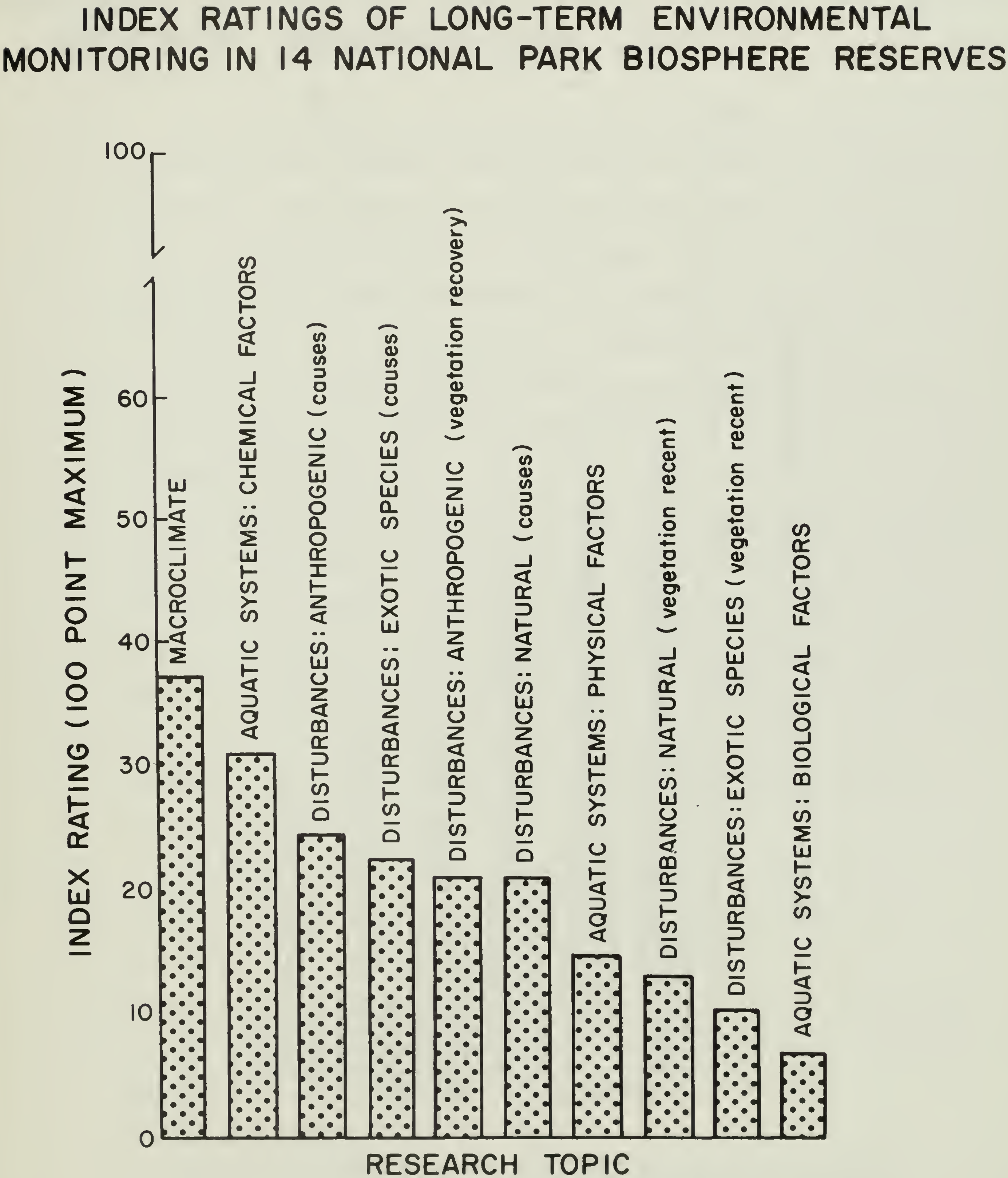

Figure 2. Average index ratings for long term environmental monitoring. Note the lower average ratings and the similiarity in trends to Figure 1.

INDEX RATINGS OF LONG-TERM ECOLOGICAL RESEARCH IN 14 NATIONAL PARK BIOSPHERE RESERVES

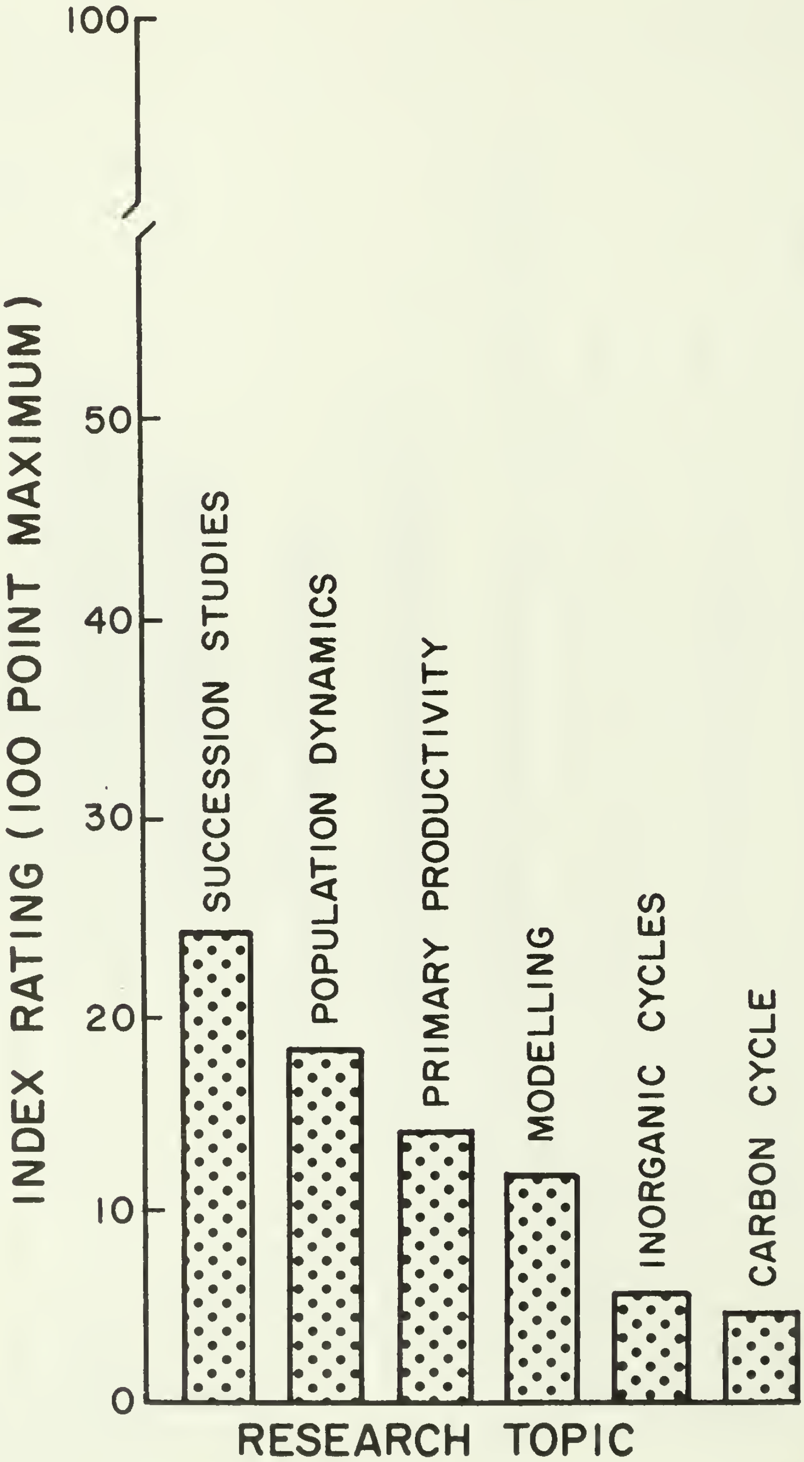

Figure 3. Average index ratings for long term ecological research. Note the very low average ratings.

RESULTS

Table 1 and Figure 1, on the status of baseline inventory, show a relatively strong information base, particularly for geographical features and archives. Topographic and surface geology maps, usually developed by the U.S. Geological Survey, and aerial photography from a variety of agency sources contribute valuable information to the reserves. Other agencies outside the NPS, such as the Department of Commerce (National Weather Service) and Environmental Protection Agency, which monitors air quality on a national scale, have cooperated in developing much of the reserves' baseline macroclimatic data.

Disturbance and aquatic systems information are among the least complete inventory items. Relatively little is known about disturbances which do not represent obvious threats to park resources. Park science programs have apparently treated each case as a separate phenomenon; therefore, comprehensive analysis of a full range of disturbance factors is not being undertaken in most reserves. Baseline data on aquatic systems are exceptionally sparse--a finding of some concern, considering the importance of aquatic systems in most of the U.S. Biosphere Reserves.

Vegetation baseline data had a much higher score, but this may be deceptive. Although many parks reported complete vegetation maps, some were prepared too long ago to provide reliable support for current management needs, and others have not been sufficiently verified in the field to ensure a high level of accuracy. Checklists and collections are relatively complete for vascular plants but normally lack adequate specimens of nonvascular plants and are nearly nonexistent for aquatic species.

Critical to effective baseline inventory is systematic preservation and cataloging of data, without which the potential utility of baseline data is limited. Most reserves either have or are currently establishing their own comprehensive archives, although development of integrated scientific information systems involving the reserves as a group is presently not an NPS program emphasis.

The patterns displayed by baseline inventory also apply to long term monitoring. As shown in Table 1 and Figure 2, index scores on the whole are lower than in Figure 1 (see also Table 2), indicating that long term monitoring activities are not as well represented in the total program as short term projects. Macroclimate is the most heavily researched topic on the list. Aquatic system monitoring and disturbance-related topics are poorly represented. Monitoring of disturbance is being carried out with more emphasis on the causal agents themselves than on ecosystem response.

The survey found long term ecological research to be the weakest category (Fig. 3). Nutrient and carbon cycle research had average scores of 6 and 5 (of 100), respectively, and the maximum average score was 25 for successional studies, indicating none of the topics are covered by comprehensive research.

The figures in Table 3 are a general comparison of the status of scientific research programs in the 14 reserves surveyed. The programs vary widely in their emphasis and comprehensiveness. Note that the desert and island parks - Organ Pipe Cactus, Big Bend, Channel Islands, Virgin Islands, and Hawaiian units - tend to have below-average total indices. The average ratings shown in Table 2 indicate the NPS Reserves' scientific efforts are focused on short term baseline inventory (average rating 41), followed by monitoring (average rating 21), and finally by long term ecological pursuits (average rating 14).

DISCUSSION AND CONCLUSIONS

Despite the apparent straightforwardness of the above results, they must be interpreted with the limitations of the survey in mind. A telephone questionnaire has both advantages and disadvantages: response is quick and relatively uniform; however, misinterpretation and mistakes are possible, especially in a survey this lengthy. Only six reserves submitted corrections after they received copies of their telephone survey response, however, and the corrections submitted made almost no difference in the final scores.

Of the topics investigated, baseline inventory studies were nearly twice as well represented as long term environmental monitoring and almost three times as well represented as long term ecological research. Several factors may have influenced this trend. New parks tend to conduct inventory and construct a "static" data base but overlook monitoring programs unless resources management difficulties require them. Further, managers may associate preservation of park ecosystems with a lack of natural change and may not fully recognize the importance of understanding ecosystem dynamics in parks (Dolan et al. 1978; White and Bratton 1980). Historically, few U.S. parks have employed staff research biologists; thus, supervision has not been available for accumulation of data on diurnal, seasonal, and annual environmental changes. Even the resident Great Smoky Mountains and Everglades science programs are largely products of the last decade.

A related observation is that baseline inventory and monitoring efforts, partially sponsored by other federal agencies, are well represented in nearly all of the reserves. Topographic, geologic, and soils mapping, and climatological monitoring are supported by agencies such as the U.S.

Geological Survey, through direct funding or technical assistance, often to ensure the inclusion of the reserves in national data collection systems. Where execution of inventory or monitoring is solely the responsibility of U.S. NPS, the index ratings were generally less. As U.S. NPS does not presently have servicewide standards for scientific activities, the lack of NPS-sponsored monitoring may be due to a lack of incentive to create data bases which have only long term value. Present emphasis is on short term acqusition of data to meet immediate planning and management needs.

Within the areas of inventory, monitoring, and long term research, some topics have received much more emphasis than others. Baseline inventory and monitoring of aquatic systems and both natural and anthropogenic disturbances scored very low in this survey. The majority of controlling elements and processes in the natural ecosystems of these reserves have, in fact, not been studied. Long term research programs that focus on the structure and function of ecosystems (i.e., ecosystem modeling, nutrient cycling, and carbon cycling) are under way in only a few of the reserves.

The importance of these information gaps, both to the Biosphere Reserves and to all U.S. NPS areas, may be documented by comparing the results of this survey to those of the "State of the Parks 1980, a Report to the Congress" (U.S.NPS). For the Biosphere Reserves, which are among the most studied natural areas in the U.S. NPS system, monitoring of physical factors for aquatic systems scored an average of 15 index points (of 100), while biological aquatic monitoring scored a mere 7; yet in 1980, 87 U.S. parks (of 301 areas) reported threats to wetlands, 67 reported threats to fishes, and 130 reported threats to fresh water quality (Table 3). In addition, of 466 reported total threats to water quality or quantity (for 301 areas), only 70 (15 percent) were considered to be adequately

Table 3. Ranking of threatened resources in U.S. National Park Service areas (from NPS 1980).

Biological Resources	No. of Parks
1. Mammals (land and water)	136
2. Plant species (land & water)	132
3. Wetland communities/habitats	87
4. Birds (land & water)	71
5. Woodland communities/habitats	67
6. Fishes	67
7. Forest communities/habitats	60
8. Endangered species/threatened species	43
9. Intertebrates (land & water)	41
10. Grassland communities/habitats	34
11. Amphibians & reptiles	33
12. Desert communities/habitats	20
13. Meadow communities/habitats	18
14. Tropical communities/habitats	15
15. Scrub communities/habitats	10
16. Cave species (animals & plants)	8
17. Plankton	4
18. Tundra communities/habitats	4
19. Coral communities/species	3
Physical Resources	
1. Air quality	140
2. Fresh water quality	130
3. Soils	119
4. Visibility (air)	99

Table 3 (continued).

5.	Fresh water supply	41
6.	Marine water quality	27
7.	Beach-dunes	23
8.	Minerals	19
9.	Geological features (unique)	18
10.	Cave systems	18
11.	Paleontological features	5

documented by scientific research (Table 4).

In the case of exotic species disturbances, the Biosphere Reserves received average index ratings of 23 for monitoring of causes and 14 for monitoring of ecosystem recovery. The "State of the Parks" report cited 210 biotic exotic threats to all parks, and of 602 total exotic encroachment threats, only 30 percent were considered to be properly documented (Table 4).

Air pollution has been rated as second only to aesthetic degradation as a threat to parks (Table 4), but almost no work has been done on biological pathways in the relatively well-studied Biosphere Reserves. Considering the potential threats to ecosystems in all parks, the information on the effects of air pollution is very inadequate. These results indicate (1) that research needs for the Biosphere Reserves are similar to those of the U.S. National Park system as a whole, and (2) that lack of research on the weakly documented topics is not due to lack of applications for the data.

The "State of the Parks" report presents data on the threats to 12 individual reserves officially designated prior to 1980 (Fig. 4). The NPS Biosphere Reserves report almost three times the average number of threats for all other NPS areas. This is probably due partially to the large size and ecological diversity of the reserves, as well as to the additional scientific attention given these sites. With the exception of Glacier, the reserves reporting the most threats also have the most complete data bases. One might guess that where information is poor, many problems are overlooked. Virgin Islands, for instance, reported only 16 threats but is cited in a survey of botanical problems for southeastern NPS areas (Bratton et al.,

Table 4. Number of known and suspected threats to U.S. National Parks which are adequately documented as compared to those which require research to adequately document (from NPS 1980).

Threat	Adequately documented threats	%	Research required	%	Total threats
1. Aesthetic degradation	456	42	629	58	1085
2. Air pollution	55	7	637	93	692
3. Physical removal of resources	147	23	491	77	638
4. Exotic encroachment	181	30	421	70	602
5. Visitor impacts	101	20	404	80	505
6. Water quality/quantity	70	15	396	85	466
7. Park operations	100	28	257	72	357
TOTAL	1110	25%	3235	75%	4345

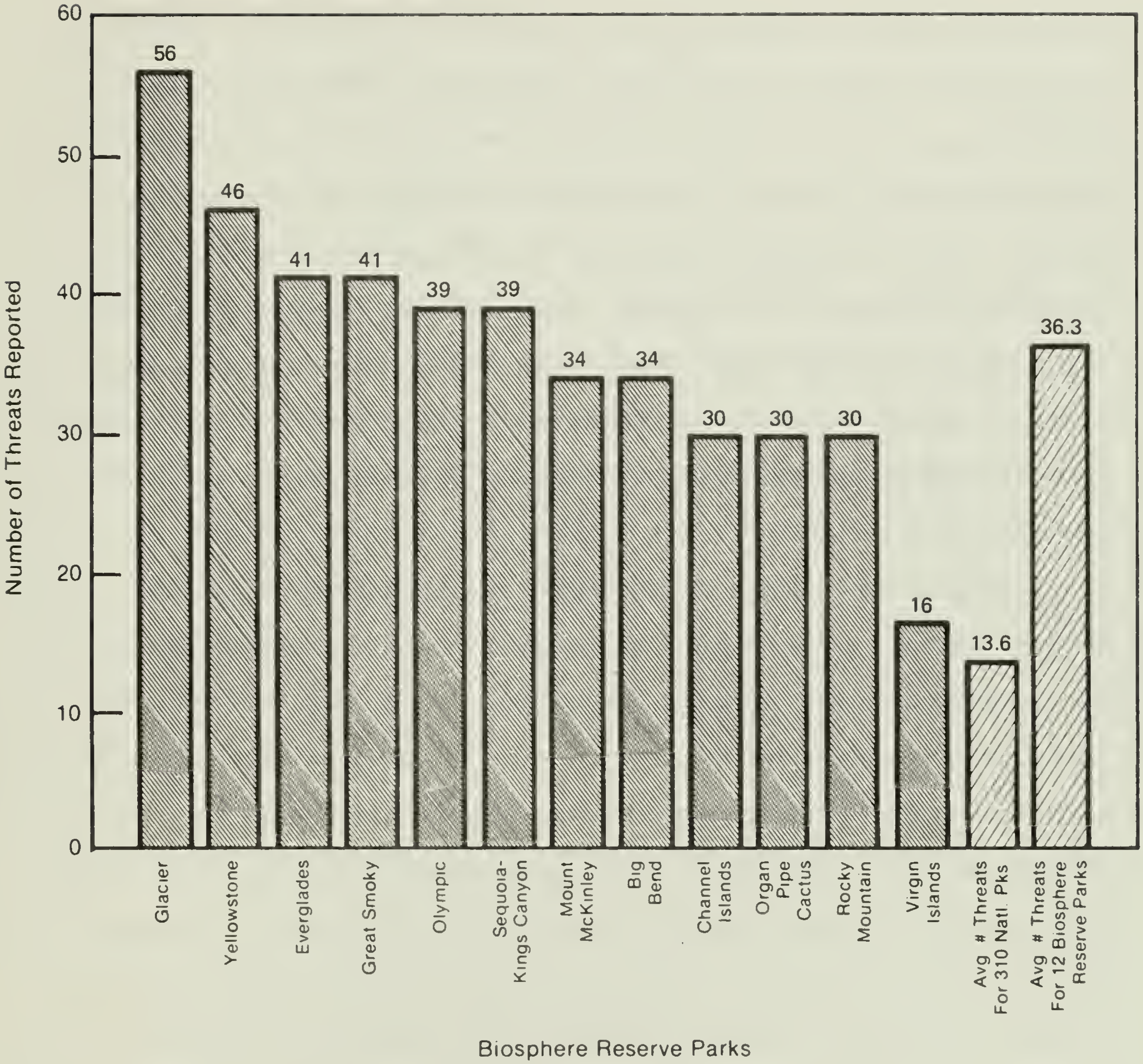

Figure 4. The number of threats reported for the Biosphere Reserves compared to the average number of threats reported for all national parks.

(from "State of the Parks--1980: A Report to Congress) in press) as having incomplete plant checklists, vegetation maps, and exotic species surveys. Not enough is known about visitor impacts or exotic plant or animal invasion, much less about natural successional processes in the Carribean, to determine the long term vegetation trends for the park. At Everglades, however, the adequacy of the information is directly correlated to the magnitude of the threats. Extensive man-caused modification of the hydrology of the region and the resulting disturbance of natural ecosystem processes throughout the entire park have been primary forces behind the establishment of a balanced research program at Everglades.

Comparing the reserves to each other, one notices that Biosphere Reserves having a longer history of employing scientists (Yellowstone) or having research laboratory units (Everglades) tend to have substantially more diverse and comprehensive programs. The two reserves with laboratory units and with both aquatic and terrestrial staffs (Everglades and Great Smoky Mountains) scored highest in all major categories of scientific study. Coincidentally, the most complete programs are in the temperate mountain reserves, while the deserts and tropical islands are more weakly covered by research. Geographic isolation probably affects programs in reserves like Big Bend, which are long distances from both U.S. NPS regional offices and from universities. The relationship between the availability of multidisciplinary scientific expertise and program effectiveness suggests that stationing NPS scientists in reserves improves program continuity, even if those scientists are largely coordinating or supervising university-based projects.

Finally, the results of this survey underscore the importance of comprehensive review of reserve scientific data bases, facilities, and programs to determine their adequacy to meet present and future needs. The accelerating changes in the physical and biological condition of the Biosphere will continue to increase the value of the reserves as benchmark areas. At the same time, the diversity of anthropogenic influences on the reserves will continue to increase and modify reserve ecosystems. The quality and comprehensiveness of the scientific data base will largely determine the managers' capability to distinguish and evaluate the significance of natural cycles and trends from man-caused changes. Such information is also necessary to eliminate or mitigate documented threats and to take cost effective action at the earliest possible time.

A second survey of U.S. Biosphere Reserves, which will include all the U.S. Reserves, is presently being conducted and will be published in:

Ecology in Practice: Establishing a Scientific Basis for Land Management. Intern. Conf. - Exhibit. Program on Man in the Biosphere, Paris, France, September 22-29, 1981.

REFERENCES

Bratton, S. P., I. Owen, and P. S. White. In press. Status of botanical information in southeastern Castanea. National Parks.

Dolan, R., B. P. Hayden, and G. Soucie. 1978. Environmental dynamics and resource management in the U.S. National Parks. Environ. Manage. 2:249-258.

Franklin, J. F. 1977. The biosphere reserve program in the United States. Science N. Y. 195, 262-267.

Johnson, W. C., and S. P. Bratton. 1978. Biological monitoring in UNESCO Biosphere Reserves with special reference to the Great Smoky Mountains National Park. Biol. Conserv. 13:105-115.

U.S. National Park Service. 1980. State of the Parks 1980: A Report to Congress. Office of Science and Technology, National Park Service, U.S. Department of the Interior, Washington, D. C. 57 pp.

White, P. S., and S. P. Bratton. 1980. After preservation: Philosophical and practical problems of change. Biol. Conserv. 18:241-255.

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environment and cultural value of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.