REPORT

to the

ASSISTANT SECRETARY OF THE INTERIOR

Review and Evaluation

of

National Park Service

Fisheries Policies and Practices

March, 1979

BY
Ad Hoc Fisheries Task Force
appointed by:
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U.S. Fish & Wildlife Service

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BACKGROUND

Procedures. On April 25, 1978, Assistant Secretary for Fish and Wildlife and Parks, Robert L. Herbst, in a memo to the Directors of the Fish and Wildlife Service (FWS) and the National Park Service (NPS) instructed that an Ad Hoc group of senior fisheries management and research specialists be convened to review and evaluate fisheries policies and operations of the NPS. In addition, the evaluation process would serve to identify how the FWS could best fulfill its functional responsibility to provide it's expertise to the NPS regarding fish resource management. The effort would also serve as a pilot model of how the two agencies each might best utilize the knowledge of the other to achieve broader perspectives and encourage cooperative activities in the future.

Mr. Gordon Watson, Special Assistant to the Director, FWS, was appointed Task Force leader; the FWS Assistant Regional Director for Fisheries from each Region and the Chiefs of the Office of Fisheries Assistance and Division of Fishery Ecology Research from the FWS Washington Office comprised the Task Force. Mr. Roger Allin (NPS retired) was appointed by the Director, NPS to serve in a liaison capacity to the Task Force. Each FWS Region appointed a Regional Work Group of from three to seven fisheries experts to meet with staff members of the NPS and to conduct an on-site review of fish resources management and operational practices at selected units of the National Park System. Members of the FWS Task Force and the Regional Work Groups are listed in Appendix 1.

Preliminary discussions were held with Regional Directors or their

representative in each NPS Region; mutual agreement was reached regarding which units of the Park System within the region merited field review. The seven regional work groups visited 34 of the 109 units reported to encompass fish resources.

This report is a compendium of observations and a consolidation of opinions by both NPS and FWS personnel concerning current aquatic resource policy, possible impact policy modifications might have upon planning and management of units of the National Park System and opportunities for further cooperative efforts. Management alternatives were discussed without constraint or limiting parameters. On-site reviews concentrated on determining extent and quality of waters on each unit, biological data available on which to base aquatic management recommendations and how well these data were used in managing the aquatic resource. In all on-site reviews there were extensive discussions relating to the current policy of permitting fishing in national parks and monuments.

The posture of the Task Force and Work Groups was to gain an understanding of the National Park Service's management prerogatives and philosophical motivations and at the same time to provide a fresh, unbiased, and critical analysis of the policies, operations and current status of aquatic resource management within the National Park System.

THE NATIONAL PARK SYSTEM

The National Park concept was founded in an Act of March 1, 1872, establishing Yellowstone National Park. In that Act, enunciated fundamental purposes were that the Yellowstone country be "set apart as a public park or pleasuring ground for the benefit and enjoyment of the people *** to be managed *** for *** preservation, from injury or spoilation, *** (and retained) in (its) natural condition."

From that Congressional action (which predated the establishment of the NPS by 44 years), the National Park System has grown to comprise nearly 300* areas covering more than 31 million acres located in 49 states, the District of Columbia, Puerto Rico, and the Virgin Islands. These lands total nearly 48,880 square miles, or about 1.3 percent of the total area of the United States (including Alaska and Hawaii). There are 37 national parks containing 15.6 million acres or almost 50 percent of the total Park System acreage. Another 9.9 million acres or about 36 percent of the System comprise the 82 national monuments. Of the remaining 5.7 million acres, almost 3.5 million acres consist of 16 national recreation areas and another 792,000 acres is within the boundaries of the 14 national seashores and lakeshores. The remaining 1.4 million acres make up the other 145 units (Table 1).

Following the establishment of Yellowstone, there evolved a body of legislation and Executive Orders which was important in the formulation

* This report specifically excludes 13 additional units withdrawn in Alaska on December 1, 1978, under Authority of the Antiquities Act. Because of the uncertainties of Congressional and/or administrative actions in the last quarter of 1978 and early 1979, and because of different potentials and options being considered for Alaska National Interest Lands, the Task Force believed it inappropriate to speculate on these potential NPS units.

Table 1. Summary of Areas Administered by the National Park Service and with Fishing Opportunities

Classification	Number*	Acreage*	Sport Fishing**	Commercial Fishing**
National Parks	37	15,619,634.31	30	5
National Monuments	82	9,880,980.09	18	4
National Lakeshores	4	196,678.92	4	1
National Seashores	10	595,211.45	10	8
National Preserves	2	654,550.00	2	
National Recreation Areas	16	3,493,112.51	16	1
National Rivers (includes Wild and Scenic Rivers and Riverways)	6	373,684.91	6	
National Scenic Trail	1	52,034.25	1	
National Parkways	4	159,060.07	4	
National Historic Sites	53	15,050.19	3	
National Memorials	22	6,019.08	3	
National Memorial Park	1	70,408.64	1	
National Historical Parks	18	78,502.19	5	1
National Military Parks	11	34,425.28	3	
National Battlefield Parks	3	6,685.18		
National Battlefields	8	6,611.20	1	
National Battlefield Sites	2	1,801.00		
National Cemeteries		1,616.35		
Parks (Other)	10	31,896.48	2	
Miscellaneous (includes National Capital Parks, National Mall, National Visitor Center and the White House)	4	5,556.63		
Totals	294	31,283,518.73	109	20

* From "Index of the National Park System and Affiliated Areas as of June 30, 1977." GPO: 1977-240-955/7

** From National Park Service map entitled "Areas with Sport Fishing Opportunities", revised April, 1978

of purpose, concepts and language included in the Organic Act of 1916 establishing the NPS. This act states:

> "The Service thus established shall promote and regulate the use of the Federal areas known as national parks, monuments and reservations....by such means and measures as conform to the fundamental purpose of the said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

In each subsequent Congressional Act or Presidential Proclamation bringing new units into the National Park System the above charge has been reconfirmed irrespective of the types of units added.

There are three basic kinds of units within the System: Natural areas which encompass national parks, national monuments, wild and scenic rivers, and national preserves; historic and archeological areas including military parks, battlefield sites, and other sites and structures historically associated with persons or events of national significance; and recreation areas which include not only the specifically identified national recreation areas but also national lakeshores, seashore, impoundments, and similar kinds of settings. In each of these three categories, there is often a broad overlap of permitted activity, resource use and national management philosophy. National parks, monuments, and wild and scenic riverways are managed with a strong emphasis on resource preservation; nevertheless, fishing is permitted and nonexploitive outdoor activities such as camping, hiking, and canoeing are encouraged. Hunting and other extractive

resource practices such as timber harvesting, mineral removal or trapping is considered inappropriate in national parks and national monuments. Historic and archeological sites are managed to preserve historic features and/or cultural and archeological resources of a unit. There is a strong emphasis on retention of the essential character and theme for which the area was set aside. In general, management philosophy is the same for historic and archeological units as it is for natural areas. In recreation areas the basic management philosophy is to encourage all kinds of outdoor recreation uses even to the extent of reasonable resource exploitation.

In some recreation areas hunting is specifically provided for by law. Within such units however, there are often areas reserved and protected because of predominant significance of selected resources. In all cases, there can be sites of historic significance which are fully protected.

Although the National Park System by management philosophy is categorized into three major groupings--natural, historical and recreational, the NPS planning process provides that all park lands be zoned into one or more of four land classifications: natural, historic, park development and special use. Each zone in turn may have various sub-zones. Each zone has a primary objective that serves as a guide to the predominant basis of land management in that zone. Thus, resource management policies may vary between each type zone and sub-zone but the management policies and objectives applicable to any zone or sub-zone are the same for all areas of the System, (natural, historical or recreational). Variances do occur where legal requirements or valid existing rights require exception by law.

A description of zones follows:

Natural Zone - Lands and waters in this zone are managed to ensure that natural resources and processes remain largely unaltered by human activity. Developments are either absent or limited to dispersed recreational and management facilities, such as picnic areas, interpretive displays, and small maintenance stations that are essential for proper management, use, and appreciation of the natural resources.

Historic Zone - Lands in this zone are managed primarily to preserve cultural resources or to commemorate historical subjects. Physical development in historic zones is held to the minimum needed for preservation and interpretation of cultural values. Activities in historic zones are generally limited to sightseeing and study of the cultural features. This limitation, however, does not preclude appropriate adaptive use of historic structures for utiliarian purposes or other uses permitted by these policies.

Park Development Zone - Lands in this zone are managed to support nonhistoric park development and intensive public use which may substantially alter the natural environment. Parking lots, public use roads, aggregations of buildings, and park utilities are included in this zone. Developments permitted within other zones do not constitute dedication of the site as a development zone. Development zones are restricted to the smallest area necessary to accommodate the required major development and intensive use. New development zones are designated only after considering alternative sites (including locations outside the park) and alternative levels of use, facilities, and services.

Special Use Zone - This zone includes lands and waters to be used by other agencies or interests for purposes not permitted in natural, historic, or development zones. Examples include reservoirs, private development, non-Federal open space, and areas supporting or proposed for mining, ranching, and lumbering.

Throughout this report reference is made to "exclusive, concurrent, and proprietary" jurisdiction. These categories relate to legal relationships between the NPS unit and surrounding governing entities. Type of jurisdiction is determined by the history of how the United States obtained the land, legislation or Executive Order establishing the unit.

Exclusive legislative jurisdiction means that state and local governments have no effective authority to function within the unit. Concurrent jurisdiction permits the joint administration of county, state, and federal regulations and laws in areas under Federal administrative control. In cases of conflict the more restrictive regulations would apply, or precedence of authority would shift to the ascending level of Government. Proprietary jurisdiction grants NPS the same rights and privileges given any landowner. Additionally, the Park Service is endowed with those special authorities needed to regulate for public safety and health.

AQUATIC RESOURCES

Aquatic resources are reported to be found on 109 or 37 percent of the units (Figure 1). Ninety of these units have aquatic resources regarded to be of substantial importance. Commercial fishing is authorized on 20 units. The other two-thirds of the system lack fishing opportunities because of the absence of aquatic ecosystems on such units--be it a historic site involving a house and grounds or a national monument of the southwest desert. With the exception of national battlefield parks, national battlefield sites and four miscellaneous units, sport-fishing opportunities are represented on at least one of each other type of park unit, i.e., national parks, national battlefields, national seashores, etc.

Fishing has traditionally been permitted by law on each type of unit classification. In the early history of the National Park System, fishing was encouraged. Thus, both public and political support for the fledgling agency was generated. In these early years, management was largely confined to stocking (often with exotic fish*) and distribution of fishing efforts to waters that had not yet been exploited. Over time, and as a better understanding and appreciation of ecological considerations and a recognition of the interdependency of other life forms with fish resources emerged, stocking of exotic species was largely discontinued. An effort was made to restore natural species and in some instances, to re-establish natural habitat conditions. Also important was the continuing development of a "naturalness concept," particularly in national parks and monuments.

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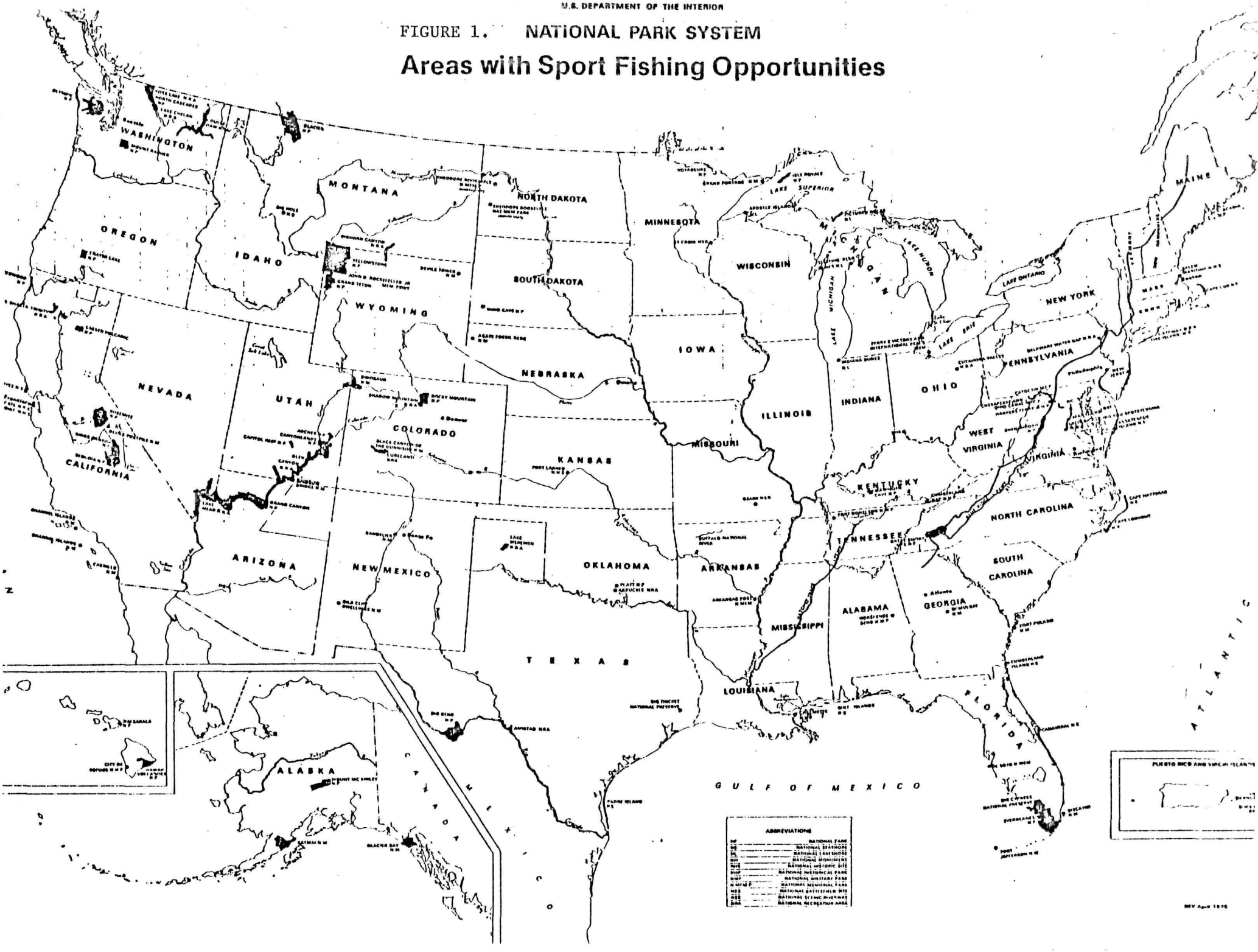
* Exotic fish as used in this report means any species of fish not indigenous to that specific NPS area.

U.S. DEPARTMENT OF THE INTERIOR

FIGURE 1. NATIONAL PARK SYSTEM

Areas with Sport Fishing Opportunities



Following World War II, visitation to the parks literally exploded. Concern of park managers and administrators alike changed from how to attract more visitors to how to spread the public-use pressures which had become intolerably high in the more accessible and popular areas. Similarly, how to save, maintain or restore fish resources, which in some places had been adversely affected by both heavy fishing pressures and concomitant developments which accompanied increased use, became matters of management concern.

The total sport fishing effort that presently occurs in the National Park System is unknown. A summary prepared by the NPS for 1975, however, indicates that on 59 areas, there were an estimated 5.6 million angler-use days. During that fishing season, total visitor use was in excess of 75.6 million visitor days. Thus about 7.5 percent of visitor use was fishing-oriented.

Value and Uses of Fish Resources - Fish are part of some ecosystem food-chains and may fulfill functions as both predator and prey species within those environments. Many species of fish in particular ecosystems and under natural conditions have a high degree of interdependence. The predator-prey relationship and its balance determines species dominance in a given water. Selective removal of fish may upset this balance and create an artificial dominance situation.

Aquatic prey species satisfy not only the food requirements of other fish within the ecosystem but are also the primary food for a diverse array

of other organisms. Pelicans, osprey, some eagle populations, alligators, otters, seals, walrus, whales, dolphins and others rely on fish and shellfish for their well-being. Some populations of brown bears are seasonally dependent on salmon and many other species of land mammals utilize fish when they are available.

Since the beginning of history, fish and other aquatic resources have been used to satisfy not only man's nutritional requirements, but a variety of other needs as well. For instance, people who enjoy watching birds or animals dependent upon aquatic habitats, of which fish are a part, and understand the interrelationships which exist, gain a satisfaction of life as they view or otherwise use the fish-dependent resource.

Many people derive important satisfactions from seeing nature's process in action; fish jumping over falls, interacting during spawning, rising to a fresh hatch of flies - these and a hundred other instances of natural processes at work are inspirational moments that live with many observers throughout a lifetime.

Observation (including photography) of aquatic resources is more difficult for visitors than seeing animals or birds. The nature of aquatic habitats preclude easy access to the observers except in certain locales -- shallow, clear water, or at certain times, such as migration or spawning periods. In some park units, marine life is observed by snorkeling or skin-diving, and interpretive facilities have been installed underwater for these visitors.

Because fish are not easily or readily visible, catching them becomes a method by which some visitors are more able to appreciate these aquatic resources and the environmental setting in which they occur. The Park Service was an early leader in catch-and-release and quality fishing programs emphasizing the sport of fishing rather than catching large numbers of fish. Accidental mortality has been minimized by appropriate methods and means such as barbless hooks, artificial lures, etc.

Commercial fishing is a locally important industry in waters of, or adjacent to some park system areas. Such fishing provides additional economic benefits throughout society to processors, transporters, storekeepers and others who are at least partially dependent upon an adequate supply of certain desirable fish and shellfish species.

There currently exists unique and diverse opportunities for the use and enjoyment of aquatic resources of the National Park System. Whether the satisfaction comes from fishing, inspiration, knowledge, food or income, aquatic resources provide something for everyone. But therein also lies the dilemma.

The NPS is charged with preserving resources for benefit of all the people, but the sheer number and types of users has the potential of modifying or destroying the very values NPS is mandated to preserve.

In the concept of naturalness, there is a close linkage of all life forms within an ecosystem: Diminishment of a part is a diminishment of

the whole. Thus, in a broad sense, the National Park philosophy of this concept suggests intrinsic and natural well-being of aquatic resources may be more important to society at large than just satisfactions gained from a successful fishing trip or as a basis for income and employment.

POLICY

At the time of Yellowstone's establishment in 1872, big game herds were being decimated in America's western expansion and plumage bird populations were dwindling to satisfy whims of fashion. Some wildlife species were diminishing before the onslaught of the market hunter's gun. Such degredation was not generally known to be occurring on aquatic resources of the Nation. Consequently, the founders of Yellowstone did not consider fishing to be in the same class as hunting. As a result, fishing has been permitted throughout the National Park System since the establishment of Yellowstone. In that legislation, the Congress charged the Secretary of the Interior to;

> * * * "provide against the wanton destruction of the fish and game found within said park, and against their capture or destruction for the purposes of merchandise or profit."

The Act of May 7, 1894 (28 Stat. 73), amending the original Yellowstone legislation, provides, in part, as follows:

> Sec. 4. That all hunting, or the killing, wounding, or capturing at any time of any bird or wild animal except dangerous animals, when it is necessary to prevent them from destroying human life or inflicting an injury, is prohibited within the limits of said park; nor shall any fish be taken out of the waters of the park * * * in any other way than by hook and line, and then only at such seasons and in such times and manner as may be directed by the Secretary of the Interior. That the Secretary of the Interior shall make and publish such rules and regulations as he may deem necessary and proper for the management and care of the park and for the protection of the property therein, * * * and for the protection of the animals and birds in the park from capture or destruction, or to prevent their being frightened or driven from the park; and he shall make rules and regulations governing the taking of fish from the streams or lakes in the park * * *.

Since those early beginnings, there has been a change in policies and regulations leading toward allowing a more rigorous functioning of the natural processes. Predator control practices initially thought necessary to maintain healthy population levels of other wildlife have been terminated. Forest fires, that were earlier extinguished as expeditiously as possible, are now viewed as a natural process. In some circumstances, fires are not controlled unless life or property is threatened. The increase in our understanding of natural processes and the changes in the Nation's perception of environment values which have occurred since 1872, suggested that the original concepts established by the founders at Yellowstone may not have gone far enough.

Status. The existing fishing policy is based not only on tradition but is embodied in many laws. It is not realistic to suggest the total body of law be amended, but the Task Force believes the policy can and should be more rigorous and explicit. Further, objectives for allocation and use of fish resources should be spelled out and prioritized. Most importantly, when addressing allocation objectives, consideration of resources should not be limited to only the fish component of the ecosystem, but should be broadened in scope to encompass all aquatic resources. We believe this can be accomplished in a manner that will be applicable to all units of the National Park System endowed with aquatic resources.

The Management Policies Handbook dated February 1978, gives only general guidance as to how fishing might be regulated. Criteria tend to be broad and nonspecific. These policies are quoted below:

"Fishing has been traditionally permitted in the National Park System since the establishment of Yellowstone. The Service will continue this practice, but, in so doing, it affirms that:

- Waters may be closed to fishing to protect rare, threatened, or endangered plant and animal species in the waters on [or?] in adjacent habitat.

- Protions of park waters may be closed to fishing when the fish life and other aquatic life has greater value to a greater number of visitors for the appreciation of plant and animal life, for scientific study, interpretation, or environmental education.

- Fishing may be prohibited in certain waters and at certain times when necessary to protect spawning grounds of endemic fish species or to maintain natural distributions of densities of native wildlife species that use fish for food.

- Fishing may be permitted in historic zones when it does not intrude adversely on the historic scene or harm cultural resources.

Where fishing is permitted, such fishing shall be carried out in accordance with applicable State and Federal laws and regulations. Park regulations may be different for native and nonnative species and may be modified for specified waters. Commercial fishing is permitted only where authorized by law.

Natural Zones - Fisheries management shall be:

- specifically aimed towards preservation or restoration of the full spectrum of native species, including fish; and

- regulated for native species so that mortality is compensated by natural reproduction.

No artificial stocking of exotic fish species will occur; artificial stocking of fish may be employed only to reestablish native species. Areas that are added to the National Park System that have had an artificial stocking program shall phase it out. Waters naturally barren of fish will not be stocked with either native or exotic fish species but will be allowed to remain in, or revert to, their natural state.

Special Use Zones - Reservoirs occurring in a number of areas, represent altered natural environments which may reduce populations of some native species of fish and encourage others. New ecological environments and niches are created which may be most successfully filled by exotic fish species; however, native species will be given precedence over exotic species wherever they are adaptable to the altered environment. Rivers and streams may be stocked with exotic species of fish when it has been determined that exotic species are already present and establish and where scientific data indicate the introduction of exotics would not seriously diminish native species populations. Accordingly, the Service, in cooperation with State fish and game officials, may work out programs of fish stocking of reservoirs and other waters for purposes of recreational fishing, using either exotic or native species, or both. Active fishery management programs are encouraged in such waters."

The policy affirms that fishing is a permitted use throughout the National Park System,* but tends to place emphasis on visitor use, vis-a-vis protection of the fishery resources. The policy and supporting statements do not address possible impacts of fish removal from the ecosystem. Such impacts are often not obvious because changes they engender are subtle and occur within an aquatic environment. Nevertheless, critical changes can occur; food chains may be altered and in some cases, removal of fish may reduce the nutrient content of the waters. Other subtle changes may also occur within associated terrestrial ecosystems, particularly within avian and mammalian populations having a high degree of dependency on fish resources.

* That fishing should continue has been reaffirmed by Congress in the various Acts establishing new parks and units or in Executive Orders withdrawing or dedicating land from the public domain.

Findings. The Task Force found the existing policy to be generally consistant with concepts of resource and visitor-use of national recreation areas and parts of like areas--national seashores, lakeshores, rivers, preserves and parkways. The policy is regarded as less consistent with the more restrictive resource and visitor-use concepts for national parks, monuments and historical areas. Current policy is specifically perceived by many Park Service administrators and managers to be contrary to management objectives for internal portions designated as "natural zones" regardless of the type of unit--park, seashore, historical site, etc. Objectives and policies for natural zones generally prohibit removal of both renewable and non-renewable resources.

The present policy was obviously written to cover a wide spectrum of legislative enactments stemming from the original Yellowstone legislation, as well as to encompass the diversity of fishing activities possible within the many-faceted National Park System. The traditional policy has become, however, a "defacto" priority that must be accommodated even at the expense of other objectives or purposes and against competing or conflicting uses. We believe acceptance and accommodation of the traditional use of fishery resources may have contributed to a generally passive aquatic resource program through the National Park System. Three observations are presented in support of this conclusion:

1. It is the concensus of the Task Force that generally, aquatic resources of the National Park System receive little

attention in terms of direction from the Washington or Regional Offices. Planning is often based on inadequate biological information resulting from limited manpower and minimum funding allocations for research, surveys and inventories related to aquatic resources. Exceptions to this generalization were noted in national parks having above average fishing opportunities for the region and/or conflicting uses for the same waters, shorelines, and riverbanks.

2. Managers generally regarded the existing fishing policy as providing very broad and "needed" flexibility but with a minimum of direction for management of the aquatic resources. Consequently, superintendents or managers tended to passiveness, particularly on areas with joint administrative responsibility.

Many park managers needed to be assured only that state management programs would balance fishing effort with sustainable harvest principles - that fish resources would not become depleted. Thus, a corollary attitude seemed prevalent; that only minimum manpower and funds needed to be allocated for programs that had to be accommodated.

3. On Park System units wherein fisheries are under the exclusive jurisdiction of NPS, fish resources received greater consideration in the objective-setting process and allocation of funds and manpower than on units with joint administrative juris-

diction. Because of specific aquatic resource management responsibilities on areas with exclusive jurisdiction, fishing programs were more often oriented toward a quality experience concept with less emphasis on numbers and size of fish.

Commercial fishing is permitted where authorized by law. The Task Force found several areas where commercial fishing occurs though not specifically authorized. Notwithstanding the legal sanction of commercial fishing within some units, we believe commercial fishing to be an inappropriate activity in the entire National Park System except where it reflects cultural and historical values of the area. We also believe it is a non-conforming use of aquatic resources, particularly when it occurs in natural zones of any type area - natural, historical or recreational.

Discussion. Congress has provided for a system of national parks and other natural areas wherein protection of resources is an overriding consideration; it is a unique ethic of public land management. The National Park System is also the only land system of the nation whose purpose is to preserve the naturalness of some limited portions of the country. To our knowledge, there are not significant acreages in any other system of public lands, be they state or local parks or reserves, National Forests or National Wildlife Refuges, that mandate naturalness in the same context as the National Park System.

Some federal lands have or will be incorporated into the National Wilderness System, but naturalness is not the same as wilderness although they approximate one another in some aspects. Hunting, fishing and trapping are permitted in wilderness units of National Forests and National Wildlife Refuges if such practices were allowed under existing regulations. Mechanized means of access for any recreational purpose are usually prohibited within wilderness units. But specific concern for natural functioning of ecosystems is not a singular objective for wilderness areas. We believe it should be a fundamental objective for those units of the wilderness system designated within national parks and monuments, particularly those areas designated as natural zones.

THE TASK FORCE BELIEVES THE LONG-TERM NATIONAL INTEREST WILL BEST BE SERVED BY A REDEDICATION TO THESE STATED PRINCIPLES AND BY ESTABLISHING GOALS, OBJECTIVES AND POLICIES FOR THE NATURAL FUNCTIONING OF AQUATIC ECOSYSTEMS OF NATURAL ZONES.

We believe the first priority of use of fish resources in these zones should be the preservation and maintenance of natural ecosystems processes. Modification of existing policy will not be easy, nor will it be immediate, and there may be those instances where it will be imposssible. But it is possible to satisfy the paramount policy objectives without prohibiting fishing. In a few places this is already being done; the Park Service has been a leader in catch-and-release programs wherein mortality is minimized by such means as barbless hooks, artificial lures, etc. This program should be encouraged!

Certain changes will be necessary within the NPS. Aggressive leadership will be required to bring about necessary modifications of existing policy. Strong direction will be needed from the Washington Office. To maintain national consistency in the policy - as in others, exceptions should be granted only by the Director of the National Park Service.

While establishment of objectives for fisheries may reduce managerial flexibility on individual units, we believe the overall integrity of each unit and the entire Park System will be strengthened. Where there is a compelling need to provide for intensive fishery-use programs, unit managers, along with regional offices and the Denver Service Center, should give serious consideration to deletion of such areas from natural zone designation. It might be appropriate to redesignate such protions as special use zones.

In Park System units with exclusive jurisdiction, fishery programs to meet these objectives may be more easily established and implemented than on units with proprietary or concurrent jurisdiction. We believe, however, that the NationalPark Service has the necessary authorities to establish objectives for fish resources on units with proprietary or concurrent jurisdiction. State management programs should be integrated to support national interest objectives.

The Task Force believes that, except for historical or cultural values, commercial fishing should be phased out of natural zones specif-

ically and all other areas generally. We believe the NPS has authority to do this in most areas. Where the authority is lacking, legislative amendments would be appropriate.

To meet these goals and objectives will require development of sound management programs based on adequate and current data. To obtain this data base will require additional funding and manpower for those units with important aquatic ecosystems.

MANAGEMENT

Planning and Administration. With few exceptions, comprehensive planning for the management of aquatic resources is lacking at individual park units. The most obvious reason is the relatively low priority generally given to aquatic resource issues. Minimal in-house fishery expertise, a weak data base (both past and present), and lack of aggressive leadership regarding aquatic resources, also contribute to the problem. Consequently, individual superintendents faced with these deficiencies, have developed diverse interpretations of the national fishery policy.

The Task Force often perceived that application of the policy reflected a managers philosophical fishery management concepts. In some instances, this situation has led to the over-exploitation of fish populations. There are instances where the Park Service has experienced great difficultly in reversing local policy to solve the dilemma. In other instances, under-utilization has occurred although there was no biological basis for such management.

Without an effective aquatic resource staff, a well documented data-base, or aggressive leadership in aquatic matters, present problems will remain and new ones will appear with no ready solutions available.

In some units with shared jurisdiction, the NPS appears to have virtually abdicated management responsibilities to State authorities. Because fish are the only major resource within NPS areas subject to

extraction, concerns for their management should be at least equal to those given to protected resources.

Each NPS unit has developed a Natural Resource Management Plan and operates under the guidance of Statements for Management. Statements about fish management contained in these plans, tend to be broad and lacking in definitive management objectives. Many superintendents and administrators, however, consider these planning documents adequate for successful management of the resources. With a few notable exceptions, the Task Force regarded current management of aquatic resources as passive and based on inadequate biological data.

To determine long-range effects of policy, or to correctly classify aquatic resources into proper zones for purposes of management is impossible without adequate biological data. Proper zonal designation is critical and could eliminate much uncertainty regarding management practices. Proper zoning could aid in the resolution of complex management decisions, resulting, we believe, in NPS being better able to execute its statutory authorities.

Each unit of the National Park System having significant aquatic resources should be adequately funded and staffed to obtain, update and maintain adequate inventories of these resources.

Additional research is necessary for some units and should be initiated. Further, all current resource planning and management documents should be reviewed to assure adequacy of aquatic resource objectives, goals and program emphasis.

Greater emphasis on aquatic resource planning, research and data gathering will involve technical personnel in the Washington and Regional Offices as well as the Denver Service Center's planning teams. At present, these offices do not have sufficient staff to provide timely assistance to field units or to adequately review documents containing technical fisheries information. The Task Force supports the concept of agencies "borrowing" technical personnel from sister agencies whenever possible. The continuing workload and the need to integrate aquatic resource management with ongoing resource and visitor-use programs in this instance, however, warrant assignment of permanent fisheries personnel to each of the Denver Service Center's planning teams and to the staff of each Regional Director.

Onsite Management. The Task Force believes that many inadequacies of onsite management stem from an inherent feature of the existing policy, i.e., the fact that fishing must be accommodated. In some areas of management, however, the NPS has exhibited national leadership and on some units, management appears to be exemplary. The three areas of management most relevant to the Task Force assignment are stocking (including native and exotic species), programs related to fishing, and consideration of aquatic habitats.

The Task Force generally supports stocking policies as described in the Management Policies Handbook, dated February 1978, but believes improvements are possible. Care must be taken in introducing new fish species to any aquatic ecosystem. Often,introduced species invade

areas beyond those intended with severe and deleterious effects to native fish, flora and fauna. Indescriminate stocking of exotics, both purposeful and accidental, has contributed to the decline of many organisms including native fish species.

We believe a written statement should be prepared evaluating the biological impact of exotic stocking before the action occurs. The statement should include but not necessarily be limited to: plans and methods for confinement of the exotic to a specified area; an analysis of probablity of disease and parasitic introductions', and an assessment of effect of the exotic on existing populations of wild or natural stocks of fish.

Although we endorse the naturalness objective for natural areas of the National Park system, we believe there may be specific locations where it will never be possible to restore natural conditions. For instance, termination of stocking programs in some lakes will not assure reversion to their pre-fish state of naturalness since some indigneous flora and fauna were eradicated by introduction of the fish. In other areas, it may simply not be within the scope of rationality or feasibility to eliminate exotic or hybrid populations. Under these conditions, we believe it would be appropriate for some species to be regarded as "naturalized" and managed in a manner consistent with other goals and objectives for the unit. This should be done on a case-by-case basis and only after environmental analysis of the effects of the exotic or hybrid species clearly indicates that further environmental degradation will

not occur because of their presence, and that elimination of such populations is not practical or feasible.

We are mindful of the possible political and public relation difficulties associated with such redefinition. The decision to declare a species as "naturalized" should be reserved to the Director after full consideration of the unique circumstances and merits in each specific instance.

In some rare instances, where the loss of a fishless water would be less detrimental to the national interest than the loss of a species, we believe this might be best served if the NPS was empowered and encouraged to use selected fishless or formerly fishless waters as repositories for unique or endangered species indigenous to the general area of the park unit. This mechanism would allow for preservation of both valuable gene pools and/or endangered species in emergency situations. Approval of such action should be reserved to the Director.

The Task Force considers put-and-take fishing as generally inappropriate to NPS mandates to provide park visitor activities under natural or quality conditions. Further, manipulation of these "artificial" fish populations frequently tends to generate visitor pressures unrelated to a "park experience". We viewed this type of management as an "unassociated activity". Fishing pressures stimulated by put-and-take programs often overtax heavily used visitor use facilities, and may detrimentally impact associated resources and overburden park personnel.

We were encouraged to see progress being made toward eliminating put-and-take fishing within most units of the system. We urge the continued phasing out of such fishing, except in truly unique circumstances, such as urban Rock Creek park in Washington, D.C. and other like areas where the environment has been so modified by man that there is little hope or intent to restore it to natural conditions.

Without exception, Task Force members believe competitive fishing derbys or tournaments on areas under National Park Service jurisdiction should be eliminated, irrespective of area or zone. We view such activities as being inconsistent with Park purposes. Such activity is counterproductive in light of today's declining fish and habitat availability, and increasing pressures upon the resources. The Task Force believes that the NPS should not be identified with or condone such potential resource abuses.

A variety of opinions were expressed concerning whether optimum sustained fish production should satisfy angler preference for greater numbers of acceptable-size fish or for fewer large fish. The Task Force believes these questions should be resolved on an individual basis by each park unit through the planning process.

We believe the restoration and maintenance of indigenous species should be the primary purpose of aquatic resource and fish management in all natural zones within park units. National Parks and Monuments should

particularly be considered and generally regarded as "areas of last resort" in the maintenance of biologically-ordered natural aquatic resources. The NPS should sanction management programs whose objectives are to maintain naturalness with emphasis on maintenance of the highest quality of recreational experiences. At the risk of redundancy, we emphasize that quality as defined for natural zones, is fishing for native species in a naturally regulated ecosystem. Such definition does not emphasize numbers or size of fish caught. That native species may not have the fighting quality of exotic species is not a relevant management concern.

There was uniformity of opinion expressed by all Regional Work Groups that the NPS needs to strengthen its enforcement of regulations, particularly in remote areas. Additional funding and personnel is the obvious solution. Conversely, if aquatic resource management were given the same emphasis as other resource management programs, the regulatory aspect of fisheries management might be significantly improved within existing levels of funding.

As noted elsewhere, attempting to balance basic productivity and utilization of fishery resources with park system objectives is complicated by jurisdictional status. This condition also holds for establishment of rules and regulations governing creel and size limits, and sometimes the methods and means of angling.

We particularly noted in units with proprietary, and for some units with concurrent jurisdictions, NPS aquatic resource programs are given reduced management emphasis. This stems from an attitude that fishing, as a traditional visitor-use must be permitted and that state personnel will provide sufficient expertise and management to maintain fish resources in a condition acceptable to the NPS. State management policies frequently emphasize fish production and harvest rather than aquatic resource maintenance and habitat preservation. The Park Service's mission to protect and maintain naturally-functioning ecosystems is not always well supported by State fish agencies. Some State agencies have little concern with impacts of their management programs on the Park Service's desire to restore native fish species, or to permit fishless or formerly fishless waters to either remain in, or revert to their original pristine conditions.

In several instances, we found the NPS to be reluctant to exercise their management prerogatives where conflict with State management purpose was apparent. Reasons for the reluctance may have been an effort to avoid hard feelings, retaliation on other issues or possible litigation.

Development of goals and objectives for aquatic ecosystems by NPS should give greater clarity to the role of those resources in the park system. We believe this will result in more aggressive leadership by the NPS in management of aquatic resources. If necessary, we believe the NPS should act unilaterally so that its missions and objectives are properly carried out.

Management guidelines should discourage development of facilities in natural zones. Guidelines should also make a distinction between "habitat preservation" and "habitat improvement" to better enable park managers to resist pressures to exploit aquatic habitats and resources. We observed examples where only the philosophical reluctance of individual park managers (rather than a clear enunciation of policy) protected fish habitats or park resources from significant modifications.

"Restoration" should be described as returning habitat to those conditions prevailing before the environment was first altered by man's activities. "Habitat improvement" should be described as modifying conditions to enhance aquatic resources. Improvement would be permitted only in other than natural areas and natural zones.

Existing facilities (such as fish ladders) should remain in place until studies reveal what impact they have in alteration of natural ecosystems. Such assessment would reveal those facilities that should be removed. Studies might also reveal that to remove them could do more violence to the area than leaving them in place and rendering them inoperative.

Fish passage facilities may be appropriate to allow movement of migrating fish over man-made structures outside of the park unit boundary. Support by the NPS for installation or rehabilitation of such facilities would enhance the possibility of continuation or restoration of anadromous fish populations to traditional spawning areas in park system waters.

Commercial Fishing. Commercial fishing is specifically authorized within 20 units of the National Park system. Notwithstanding such authorization, the Task Force regards this practice as a non-conforming use of resources in National Parks and Monuments and as an inappropriate activity within natural zones. We also noted that commercial fishing occurs on several units where there is no specific authorization. On some units this was tacitly sanctioned by unit managers and on others it occurred because of unenforceable regulations and/or inadequate enforcement effort.

Congressional intent may have been to permit continuance of commercial fishing in the Park system only by individuals so engaged or at the level of harvest occurring when the specific national park unit was established. Irrespective, it certainly was not the intent of Congress that the NPS would allow commercial fishing to the extent of resource damage. We believe the NPS could properly limit commercial fishing to those individuals currently engaged in such activity by issuing an annual, nontransferrable permit. Permits would not be issued to "first-time" fishermen. They would not be reissued when permit holders terminated their fishing activity in the waters of the parks, through retirement, disability or death.

Thus, over a period of time, commercial fishing would be phased out of all park waters except where commercial fishing has cultural or historical values. Such fishing could be allowed in token numbers for

its inherent interpretive value. Special provisions could be made for subsistence fisheries in Alaska and elsewhere as appropriate. Exceptions to this national policy should be carefully documented, evaluated, and management alternatives considered. Exceptions to this policy should be granted only by the Director.

We observed a variety of practices related to the use of charter or "party" boats that have deleterious impacts in some areas and zones of the park system. Impact of commercial boat operators catering to sport fishermen can be as severe as commercial fishing. In other areas, boats transporting snorklers, scuba divers and other viewers cause violence to the area by anchor damage or boat collision with reefs and other features. In such areas, the density of visitors frequently results in adverse impacts-- deliberate or accidentally breaking of coral, resting on coral heads (which kills them), removal of plant and animal material, etc., all are matters of management concern.

Registration practices recommended for commercial fishing boats should be applicable to charter and party boat operators to control their numbers in appropriate locations.

Pending elimination or restructuring of these activities, the NPS should initiate intensive efforts to gather data upon which regulatory processes may be established. The purpose would be to minimize adverse effects of commercial activity to aquatic ecosystems and associated resources.

Interpretive programs. Interpretive programs for terrestrial biology, botany, general ecology, geology, history and associated topics are both elaborate and enlightening. We noted, however, that interpretive efforts regarding aquatic resources largely centered on identification of fish species, and often, the basics of fishing. In only a few places did we note that interpretive information was available to the public regarding the significance of aquatic or fish resources to the Service's mission. Only in the Southeast Region did we find an effort to interpret and the opportunity to view aquatic resources "in situ".

The lack of meaningful aquatic interpretation means most visitors do not have an opportunity to properly appreciate, understand or enjoy the part these important resources play in the ecosystem and resource "mix" of the Park unit. An increased level of research and greater management attention to aquatic resources should make available to the interpreters a wealth of information upon which to develop walks, talks, and displays, illustrating to the visitor the significance of these park resources. Such programs should emphasize "in situ" interpretation, thus making aquatic resources visible. This would help bring aquatic resources into balance with current interpretive programs directed toward other resources.

COOPERATION WITH OTHER AGENCIES

There currently exists a July 1975, Memorandum of Understanding between the USFWS and the NPS. It encourages the two Services to assist one another in reaching their respective basic objectives by reciprocally providing technical assistance and services. Such services are to be made available upon request and on a reimbursable basis. The agreement is a well-written and workable document. Commitment of personnel to internal responsibilities and insufficient funds within both agencies have limited working relationships through this agreement. There are notable exceptions, however, where outstanding aquatic programs and projects have been cooperatively developed.

The NPS frequently depends on state agencies for technical fish assistance on units with shared jurisdiction. In areas under exclusive jurisdiction, the FWS more often serves as fishery advisor. This could be due in part to an established agreement that in areas of proprietary jurisdiction, such as national recreation areas, habitat management is recognized as the responsibility of the NPS, while management of fish resources is considered within the regulatory authority of the individual States.

The Task Force appreciates and recognizes the authority of States to manage resident fish resources. We see no ambiguity, however, in requesting that State management programs be designed and implemented in a manner to meet Park Service goals and objectives. We believe the NPS has prerequisite authority to assure that the National interest in use

of Park System areas and related fish resources is properly and adequately served. We further believe the National conscience supports reserving and managing one percent of the Nation's lands for these National interest objectives.

If States decline to alter or adapt their fish management programs to meet goals and objectives developed by the NPS, the Park Service should independently exercise its' existing authorities to promulgate regulations necessary to accomplish the desired end. The National interest--in this case maintaining the naturalness of an area, associated ecological processes and high quality fishing experience--must receive precedence over State interests of providing maximum fishing opportunities.

Fishing should be encouraged when it aids the visitor in appreciating the biological and ecological processes which contribute to the well-being of natural aquatic ecosystems. In addition to interpretation, emphasis of angling should be for the quality of the experience. To attain these goals, there may be instances wherein the National interest can best or only be served by appropriate restrictions.

The NPS generally has not sought the advice and expertise of the FWS when it might have been appropriate and advantageous. For the Park Service to do so appears to offer great potential for improvement of cooperation between the two agencies.

Annual meetings should be held between technical and administrative personnel of the FWS, NPS, and each State containing NPS units with significant aquatic resources. In this manner, all interested parties would become conversant with the mandates, objectives, problems, and capabilities of the others. Program areas in which greater cooperation might be effectively achieved could be explored, and research and management programs integrated. Such meetings should promote the negotiation of appropriate management authorities and a clear definition of responsibilities and interests of each entity.

The Task Force encourages individual units of the NPS to enter into bilateral cooperative agreements with local State fish and game agencies. Such agreements should deal realistically with budgetary and staffing constraints and should be referred to the FWS for review and comment before approval and implementation. State programs which affect NPS lands but are not designed and implemented to support NPS objectives should not be approved under conditions of the Federal Aid to Fish Restoration or other appropriate Conservation Acts.

The Task Force believes it appropriate and desirable for each NPS Regional Office to employ a fisheries authority to act as liaison with the FWS and State offices at the Regional level. Duties of the position would include development of agreements between the NPS, states and other federal agencies and review of internal documents for fish resource content. Each FWS Regional Director should develop a similar position to provide technical review of NPS and State plans. Assumption of these

functions and workloads will affect existing programs unless increased manpower is made available. It will therefore be necessary and appropriate for the NPS to provide needed dollars and ceilings to the FWS for such support activities.

The National Marine Fisheries Service (NMFS) has not been significantly involved with NPS fisheries management. The NMFS should be utilized by NPS in developing marine fisheries programs and contingency planning against environmental emergencies on coastal units of the System.

The Washington Office legislative branch of the NPS should review legislative Acts which may have reference to protection of aquatic resources. Language which would be useful to park managers in efforts to influence activities and resource management programs occurring exterior to the park, but affecting park resources, should be extracted and furnished to them. Knowledge of appropriate portions of the Rivers and Harbors Act of 1899, Federal Water Pollution Control Act, National Environmental Policy Act, Fish and Wildlife Coordination Act, Endangered Species Act, and other similarly constituted legislation could prove useful to park managers in maintaining the integrity of park aquatic resources.

RECOMMENDATIONS

Policy. The Task Force believes the present fishing policy provides NPS unit managers insufficient guidance, particularly in natural area components of the Park System. We further believe this lack of guidance results in a passive attitude that is basically inappropriate for a preservation-mandated and oriented agency. In our view, different objectives are appropriate for the natural, historical/cultural and recreation units of the National Park System, as are objectives for zones within each individual unit. Existing policy fails, however, to provide either long-term management goals relative to fish resources or clearly stated management objectives for their use in diverse areas of the system. We believe the existing policy is too narrowly written and defined and should be broadened to encompass aquatic ecosystems. A broadened and improved policy will reflect both National goals and unit objectives.

The Task Force recommends that:

1. The policy provide both long and short-term goals and objectives for aquatic resources of the National Park System.

2. Where appropriate, aquatic resource policy be developed as an integral part of overall resource management policy.

3. Latitude should be provided for preservation of unique populations of fish or endangered species in fishless or formerly fishless waters.

4. Where possible, commercial fishing be phased out of park system waters except when it is an appropriate use based on historical or cultural significance.

5. That the PROPOSED NATIONAL PARK SERVICE AQUATIC RESOURCE POLICY drafted by the Task Force be accepted by the NPS.

Management. The Task Force believes that operational aspects of aquatic resource management can and should be strengthened. Prerequisite to this is strengthening and improving the national policy. Once that has been accomplished, program dollars and assignment of personnel will be required to determine the current status of aquatic resources. We believe research efforts will reveal that problems exist within aquatic ecosystems that have been exploited.

To improve the operational capability of the NPS in carrying out its stewardship responsibilities for aquatic resources of the National Park System, the Task Force recommends that:

6. Each unit of the National Park System having significant aquatic resources either reprogram or seek adequate funds and manpower to update and maintain inventories of those resources. Funds and ceilings will also be required for added NPS Service Center planners and Regional Office supervisory personnel.

7. In park system units with important aquatic ecosystems, management of aquatic resources should be included in the

Resource Management Plans. Plans should be developed for all significant aquatic ecosystems and as a minimum, should include goals and objectives for contained resources.

8. The objectives for fishing when authorized in natural zones should be to provide a high quality angling experience in a naturally regulated ecosystem. Elsewhere, fishing programs should emphasize an appreciation of fish resources and the fishing experience.

9. Fishing derbys, tournaments and put-and-take fishing (except in unique urban situations) should be discontinued.

10. The Director, in exceptional circumstances, may provide for preservation of unique populations and/or endangered species in fishless or formerly fishless waters.

11. Stocking of exotic species be permitted only by approval of the Director, following analysis of their probable impact to the aquatic ecosystem.

12. Following appropriate environmental analysis and after consideration of other relevant factors, non-native species appropriate to the well-being of the ecosystem may be declared by the Director, NPS, as "naturalized" and managed as native species.

13. Protection of aquatic resources and enforcement of fishing regulations should receive greater priority in resource management activities.

14. Only state fishery management programs that support NPS goals and objectives for aquatic resources shall be permitted.

15. Policy guidelines should be developed for "habitat restoration" and "habitat improvement."

16. The NPS actively support restoration efforts beyond NPS boundaries that would aid in protection and/or re-establishment of historical native fish populations.

17. Transporting of fishermen, snorkelers, scuba divers and others by charter boats within park units should be closely regulated.

18. Interpretive programs, particularly "in situ", be developed where feasible. Such programs should stress and illustrate the significance of the aquatic ecosystem and its resources.

Cooperation with other agencies. The Task Force believes establishment of objectives for management, use, and enjoyment of aquatic resources of the National Park System is the responsibility of the NPS. State agencies should be actively involved in the objective-setting and planning process. The input of affected agencies, private interest organizations and the general public is also necessary.

Once the NPS has accomplished the objective-setting process the Task Force recommends that:

19. Annual meetings be conducted between the NPS and State fishery and administrative personnel to develop frameworks for bilateral cooperative agreements. The FWS and NMFS (where appropriate) should attend such meetings.

20. The FWS be utilized to review the adequacy of State fish management plans for NPS units to assure that Park Service objectives will be supported by proposed State programs.

21. National Park Service provide adequate funds to obtain FWS expertise on aquatic resource matters. Ceiling allocations should also be agreed upon and formalized in Memoranda of Understanding.

22. Pertinent legislation, directly or indirectly influencing aquatic resources should be made available for specific guidance to appropriate park managers.

A PROPOSED NATIONAL PARK SERVICE AQUATIC RESOURCE POLICY

The challenge facing the National Park Service is to manage aquatic resources as an integral part of the total park ecosystem while providing for the visiting public's continued enjoyment of those resources. The Service will continue the traditional policy of allowing fishing but affirms that aquatic resource programs shall be modified to permit more compatibility with the principles and policies of programs governing other park natural systems. To reach these goals, aquatic resources will be evaluated and andministered, when possible, according to the following management priorities:

1. As the first priority, aquatic organisms shall be managed to allow them to fulfill natural functions as predators and prey within the ecosystems.

2. After the first priority has been duly considered, aquatic resources will be managed to satisfy nonconsumptive human needs and uses.

3. After due consideration of the first two priorities and with appropriate management justification, aquatic resources may be made available for consumptive human uses.

4. Existing populations of exotic species may be utilized, reduced, or eliminated, to preserve or restore natural aquatic ecosystems.

Fishing, permitted to meet Park Service management objectives, shall be carried out in accordance with applicable State and Federal laws and regulations. Park regulations may differ for native and non-native species. Regulations may be modified according to NPS objectives for specific aquatic and related ecosystems.

Natural Zones

The primary goal of aquatic resource management programs in natural zones shall be the preservation and restoration of native aquatic ecosystems. This goal will span the entire spectrum of aquatic plant and animal communities plus associated physical and chemical parameters.

A second goal shall be to provide opportunities for visitor enjoyment of the aquatic resource. Such enjoyment shall include viewing and interpretative programs where conditions are suitable. Since most forms of wildlife, including fish, have to be seen or heard to be enjoyed, properly regulated sport-fishing, snorkeling and scuba diving will continue to play a significant role in providing for visitor enjoyment and appreciation.

Sport-fishing shall be regulated to provide the opportunity for a high quality angling experience. For natural zones, a high quality angling experience is defined as fishing in a naturally regulated ecosystem. Emphasis will not be on numbers or sizes of fish caught, but in the naturalness and appreciation of the total experience. Exotic fish species will not be stocked in natural zones. Stocking of fish may be employed only to reestablish indigenous species.

Waters originally barren of fish will be allowed to revert to their natural state. An exception to this policy may be authorized by the Director when research studies indicate a need to stock threatened or endangered indigenous species in fishless, or formerly fishless waters, if extinction of that fish species would represent a loss to society greater than the loss of a fishless water.

Integrity of natural zones shall be the primary consideration in determining the extent of fishing activity allowed. When there is a compelling need to provide for an intensive fish-use program, modification of natural zone boundaries to exclude the area of use, shall be considered.

Historical Zones

The primary goal of aquatic resources management in historical or cultural zones of the National Park System shall be in consanance with historical or cultural themes of the units. Many historic and cultural zones are located within or proximate to metropolitan or urban areas. These zones may provide unique opportunities for visitors to develop an appreciation of aquatic ecosystems not other wise available to them.

Special Use Zones

Altered natural environments such as reservoirs, trailraces, etc., may reduce populations of some native species and encourage others. New ecological environments and niches are created which may be most successfully filled by exotic species. Native species, however, will be given precedence wherever they are adaptable to altered environments. Rivers and streams may be stocked with exotic species of fish when it has been determined

that exotic species are already present and established, and where scientific data indicate introduction of exotics would not seriously diminish native species. Active aquatic management programs shall be developed for such waters to meet NPS objectives. Accordingly, the Service, in cooperation with appropriate management agencies, may develop programs for stocking reservoirs and other waters with exotic or native species, or both for purposes of recreational fishing.

Aquatic Resources Management Plan

An aquatic resources management plan will be developed for each major aquatic ecosystem located within units of the National Park System.

The plan for the management of aquatic resources in the natural areas shall follow the goal for park management as defined by the Leopold committee (1963) which states:

> "As a primary goal, we would recommend that the biotic associations within each park be maintained, or where necessary recreated, as nearly as possible in the condition that prevailed when the area was first visited by the white man. A national park should represent a vignette of primitive America."

The primary objective of aquatic resource management shall be preservation and restoration of native species and aquatic ecosystems for their esthetic, recreational, educational, cultural, and scientific values for present and future generations.

The plan for recreational areas shall follow a goal of appreciation of fish resources, the fishing experience and fishing skill, and not on numbers or size of fish landed.

The plan should be sufficiently flexible to allow for management of a single or multiple species.

Short-term objectives for aquatic resources management of the National Park System shall be:

1. To determine the current status of each unit's aquatic resource. Current status can apply to entire ecosystems, individual waters, subdivisions of individual waters, or to species or groups of species. It may also be different for two or more species in the same environment.

2. To describe the management option presently in use that best applies to the species, water or ecosystem in question.

3. To select the highest quality management objective for the aquatic resource consistent with the unit's overall resource objective.

4. To design a plan to achieve the desired management objective based on the selected management option.

5. To implement the plan and make every effort to improve the resource status.

5. Priorities 1 through 4 shall be applicable to commercial fishing. A permit system shall be developed in applicable units to limit numbers of commercial fishermen, boats, and amount of commercial fishing gear. Such permits will not be transferable and/or replaceable.

The Service also affirms that:

- Waters shall be closed to fishing (or the possession of fish) to protect unique populations of fish and threatened or endangered plant and animal species in park system waters or adjacent habitat.

- Portions of park waters shall be closed to fishing when the fish and other aquatic life have a greater value to the natural ecosystem process, or to a greater number of visitors for appreciation of plant and animal life scientific study, interpretation, or environmental education.

- Fishing will be prohibited in certain waters and at certain times when necessary to protect spawning grounds of native fish species or to maintain natural distributions or densities of native wildlife species that use fish for food.

- Fishing shall be permitted in historic zones when it does not intrude adversely on the historic scene or harm cultural resources.

- In some instances, after consideration of environmental and other appropriate factors, the Director may declare specific species of fish as "naturalized." Upon such declaration, those species will be managed as integral components of the ecosystem.

APPENDIX I

Regional Work Groups, Offices Visited and Location of On-Site Reviews

Region 1, FWS, Portland, Oregon

MEMBERS

Fredrick Vincent, Assistant Regional Director, Fisheries, Portland, OR; Regional Work Group Leader
Dr. Roger A. Barnhart, Unit Leader, California Fishery Unit, Humboldt State University, Arcata, CA
Charles H. Lobdell, Regional Planner, Federal Aid, Portland, OR
John T. Savage, Staff Specialist, Federal Assistance, Portland, OR

OFFICES CONTACTED

Pacific Northwest NPS Regional Office, Seattle, WA
Western NPS Regional Office, San Francisco, CA

UNITS VISITED

Grand Coulee National Recreation Area, WA
Lake Mead National Recreation Area, NV - AZ
North Cascade National Park, WA
Olympic National Park, WA
Yosemite National Park, CA

Region 2, FWS, Albuquerque, New Mexico

MEMBERS

Robert F. Stephens, Assistant Regional Director, Federal Assistance and Fisheries, Albuquerque, NM; Regional Work Group Leader
George E. Devine, Senior Staff Specialist, Fisheries, Albuquerque, NM
Dr. James E. Johnson, Endangered Species Biologist, Albuquerque, NM
Dr. O. Eugene Maughn, Unit Leader, Oklahoma Fishery Unit, Oklahoma State University, Stillwater, OK

OFFICES CONTACTED

Southwest NPS Regional Office, Santa Fe, NM
Western NPS Regional Office, San Francisco, CA
(Concurrent with Region 1, FWS)

UNITS VISITED

Bandelier National Monument, NM
Buffalo National River, AR
Grand Canyon National Park, AZ
Lake Mead National Recreation Area, NV - AZ
(Concurrent with Region 1, FWS)
Padre Island National Seashore, TX

Region 3, FWS, Minneapolis, Minnesota

MEMBERS

Patrick J. Manion, Senior Staff Fisheries Biologist, Twin Cities, MN; Regional Work Group Leader
Dr. Dan Coble, Unit Leader, Wisconsin Fishery Unit, University of Wisconsin, Stevens Point, WI
Donald V. Friberg, Staff Fish and Wildlife Biologist, Federal Aid, Twin Cities, MN
John Lyons, Assistant Refuge Manager, Upper Mississippi National Wildlife Refuge, Cassville, WI
Joseph J. Webster, Staff Fisheries Biologist, Twin Cities, MN

OFFICES CONTACTED

Midwest NPS Regional Office, Omaha, NE

UNITS VISITED

Isle Royale National Park, MI
Sleeping Bear National Park, MI
Voyageurs National Park, MN

Region 4, FWS, Atlanta, Georgia

MEMBERS

Frank Richardson, Assistant Regional Director, Fisheries, Atlanta, GA; Regional Work Group Leader
Dr. Melvin T. Huish, Leader, North Carolina Fishery Unit, North Carolina State University, Raleigh, NC
Alan Kelly, Assistant Project Leader, Great Smoky Mountains Fisheries Assistance Project, Gatlinburg, TN
Donald W. Pfitzer, Regional Public Affairs Officer, Atlanta, GA
Thomas S. Talley, Field Supervisor, Ecological Services, Cookeville, TN
Robert T. Webb, Special Assistant to the Regional Director, Atlanta, GA

OFFICES CONTACTED

Southeast NPS Regional Office, Atlanta, GA

UNITS VISITED

Biscayne National Monument, FL
Blue Ridge Parkway, NC - VA
Buck Island Reef National Monument, St. Croix, VI
Cape Hatteras National Seashore, NC
Everglades National Park, FL
Fort Jefferson National Monument, FL
Great Smoky Mountains National Park, TN - NC
Virgin Islands National Park, St. Johns, VI

Region 5, FWS, Boston, Massachusetts

MEMBERS

Harry Bishop (Former) Assistant Regional Director, Fisheries, Boston, MA; Regional Work Group Leader
Dr. John G. Nickum, Leader, New York Fishery Unit, Cornell University, Ithaca, NY
John R. Sheridan, Project Leader, Fishery Assistance, Gloucester Point, VA

OFFICES CONTACTED

North Atlantic NPS Regional Office, Boston, MA
Mid-Atlantic NPS Regional Office, Philadelphia, PA
National Capital NPS Regional Office, WDC

UNITS VISITED

Blue Ridge Parkway, NC - VA
(Concurrent with Region 4, FWS)
Chesapeake and Ohio Canal National Historic Park, MD - WV - DC
Prince William Forest Park, VA
Shenandoah National Park, VA

Region 6, FWS, Denver, Colorado

MEMBERS

Danny M. Regan, Assistant Regional Director, Fisheries, Denver, CO; Regional Work Group Leader
Jack L. Dean, Staff Biologist, Denver, CO
Ronald Jones, Project Leader, Yellowstone Fishery Assistance Project, Yellowstone National Park, WY
Jack D. Larmoyeux, Assistant Area Manager (Fisheries) Billings, MT
Dr. William J. McConnell, Unit Leader, Colorado Fishery Unit, Colorado State University, Fort Collins, CO

OFFICES CONTACTED

Midwest NPS Regional Office, Omaha, NE
(Concurrent with Region 3, FWS)
Rocky Mountain NPS Regional Office, Denver, CO

UNITS VISITED

Canyonlands National Park, UT
Glen Canyon National Recreation Area, UT - AZ
Grand Teton National Park, WY
Ozark National Scenic River, MO
Rocky Mountain National Park, CO
Yellowstone National Park, MT - WY - ID

Alaska Area, FWS, Anchorage, Alaska

MEMBERS

Jan E. Riffe, Assistant Area Director for Federal Assistance, Fisheries and Wildlife, Anchorage, AK; Area Work Group Leader
Dr. Donald C. Hales, Supervisor Fishery Biologist (Management), Anchorage, AK
Norval F. Netsch, Environmental Specialist, Office of Biological Services, Anchorage, AK
Gerald M. Reid, Environmental Specialist, Office of Biological Services, Anchorage, AK
Dr. Richard L. Wilmot, Supervisor Biologist, Alaska Field Station, National Fisheries Research Center, Anchorage, AK

OFFICES CONTACTED

National Park Service Area Office, Anchorage, AK

UNITS VISITED

Glacier Bay National Monument, AK
Katmai National Monument, AK
Mt. McKinley National Park, AK

OTHER OFFICES CONTACTED

National Park Service, Central Office, WDC, (Dr. Stevens, Hooper)
National Capital NPS Regional Office, WDC, (Dr. Stevens, Hooper)
National Park Service Area Office, Honolulu, HI, (Watson while in Hawaii at personal expense)

OTHER UNITS VISITED

Acadia National Park, ME, (Watson in conjunction with other travel)
Cape Cod National Seashore, (Watson in conjunction with other travel - no contact made with NPS personnel).