Fisheries Resource Management Issues and Policies, Interpretation –and the USNPS Mission

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AN IMPORTANT PART OF THE U.S. NATIONAL PARK SERVICE MISSION is to attempt to promote and protect healthy and productive habitat in order to maintain native plant and animal species. The difficulty is in trying to maintain the delicate balance between preservation and use of resources mandated for the agency by the Organic Act of 1916 (16 USC 1 et seq.). One strategy for accomplishing use of natural resources without compromising their preservation is by instilling in the visitor, through interpretation, an understanding and appreciation of the fundamental paradox of the Park Service mission.

Through awareness and appreciation of the Park Service mission the visitor can be the most effective preserver of natural resources. In many instances interpretive programs can help accomplish this goal. Nonetheless, too often attention is focused upon those natural resources that are most salient to the visitor and park personnel, while little or no attention is focused upon less-observable resources. Fisheries and aquatic ecosystems are major resources that have not received adequate attention within the scope of the Park Service mission. Aquatic ecosystems worldwide are being severely altered or destroyed at a rate greater than at any time in human history and far faster than they are being restored (National Research Council 1992).

Recently, the National Academy of Sciences–National Research Council (1992) reported that, in general, USNPS resource management needs more and better science to support all resource management decisions. Fisheries resources management has suffered even more than other resource areas in part because of the history and evolution of fisheries management in the National Park System. Fisheries management policies have evolved from the early conception that use of this particular resource would not adversely effect the aquatic ecosystem. George Wright and Ben Thompson (1934) perceived fish as a food source for wildlife and a source of recreation for visitors but did not present a case for preserving fish as a part of the aquatic ecosystem. In the early years of the USNPS, basic attitudes and perceptions had not yet evolved that were tied to better understanding of the importance of maintaining biodiversity.

Today, knowledge about aquatic ecosystems has grown considerably, yet still the Park Service has lagged behind. Schullery (1970) articulated the problems of managing fisheries resources from a recreation perspective without addressing the preservation issue. He points out that, by definition, fish are not perceived as wildlife. He goes on to say that fish are not described in the same terms typically used for warm-blooded animals and other creatures or plants. This results in fish being placed in a different category than nonaquatic fauna. Fish do not have big brown eyes and are not soft and furry; no one has ever made a movie about a cute fish. Therefore, fish do not get the empathy that mammals do from the public.

When fisheries management and science issues are addressed, there is a tendency to focus on the recreational aspects of the resource and not on the value of the resource in and of itself and as an important component of the ecosystem. Even when data are collected and sound ecological strategies are designed with regard to fisheries, often resource management and science divisions fail to communicate with each other and neither communicates with interpretation. As a result, the visitor is uninformed about the difficult dilemmas encountered in managing fisheries in the National Park System.

Fisheries management goals are inherently difficult to interpret because the issues are so paradoxical. In general, all native plants and animals in national parks are afforded full protection by law, with one exception: fishes. In the national parks legislation (16 USC 1 et seq.), fish are treated differently from other animals , with, it would appear, no ecological justification. Visitors are often confused by this and have difficulty understanding why they cannot pick flowers, collect insects or rocks, yet they can fish and keep a portion of their catch if they wish. NPS-77, the agency's Natural Resource Management Guideline (U.S. National Park Service 1991), states: "Recreational fishing will be allowed in parks where it is authorized by federal law or where it is not specifically prohibited and does not interfere with the functions of natural aquatic ecosystems or riparian zones. Where fishing is allowed, it will be conducted in accordance with applicable federal laws and treaty rights and state laws and regulations. However, the National Park Service may restrict fishing activities whenever necessary to achieve management objectives outlined in a park's resource management plan." This policy, in conjunction with several others, was drafted to guide park managers regarding many fisheries issues, such as exotic versus native species, traditional use, fisheries restoration versus enhancement, stocking, and maintenance of genetic integrity. However, some national park areas share jurisdiction of their waters with state and local agencies; some have jurisdiction over plants and animals but none over waters. These national park areas are therefore limited in their abilities to protect their aquatic resources. It is important that these issues be understood by the general public.

There is a general failure of communication between scientists and the populace regarding conservation issues (Orr 1991). The Park Service, however, is in a position of close contact with the public on a daily basis. As a national leader in the preservation of natural resources and prime communicator of natural resource conservation, it is essential that the USNPS promote clear communication among its scientists, resource managers and interpreters. When this communication breaks down, the credibility of these Park Service divisions comes into question by the public. The committee on improving the science and technology programs of the agency (National Research Council 1992) concluded that the public expects timely answers to their questions about park resources. Science and interpretation should be closely allied to educate the public and answer these critical questions. Since interpretation should reflect resource management goals, fisheries management interpretation has specific problems even when clear and concise communication exists.

USNPS interpreters must understand the issues before communicating to the public. For example, restoration is often erroneously perceived as the isolated manipulation of individual species. The return of an ecosystem to a close approximation of its condition prior to disturbance is *restoration* as defined by the Committee on Restoration of Aquatic Ecosystems (1992). Long-term maintenance of biodiversity depends upon appropriate assemblages of plants, animals, and other elements of natural systems interacting in a complex dynamic. What better arena to attempt to explain this to the general public than in fisheries management? Issues in fisheries management provide the opportunity to communicate the fact that, because ecosystems have been changed so much, it is impossible to return to the original balanced system; that there are often too many unknown factors to maximize biodiversity; that returning to pristine conditions in national parks is not a realistic goal, and that at best we can choose only one of the many possible human-modified conditions (Diamond 1992); and that passive management practice of allowing a natural ecosystem to heal itself simply does not work. Diamond (1992) points out that the incompatibility of noninterference with nature and preservation of pristine natural habitats should be interpreted to the general public, and fisheries management issues may provide the best avenues to interpret these ideas.

There are problems inherent in fisheries resource management, such as the need for scientific investigation of fisheries resources in national parks; the need for communication of collected data to fisheries resource managers and interpreters; entrenched public perception that fish may be enjoyed and appreciated predominantly by angling; and, finally, the paucity of management policies that are based on sound ecological principles sensitive to political issues, but nonetheless promote preservation of biodiversity while providing enjoyment to visitors. Interpretive programs often focus on the controlled harvest point of view (for example, "fish with a ranger" programs). Appreciation does not have to equate with direct contact and recreational use. "Stream stroll" programs or sea and river snorkeling programs can be viable alternatives or additions to interpretation directed only at recreational use.

Creating opportunities for viewing native fish in their natural habitat should be emphasized when feasible (the fishing bridge in Yellowstone National Park is an excellent example). This is not to say that the Park Service should begin building aquariums. However, the importance of managing native non-game species can be communicated to the public, enhancing appreciation and understanding of fishery issues. In areas where native non-game species have declined as a result of range reduction, pollution, or introductions of non-native game fish, this important information must be communicated through interpretation so visitors may be aware of

their own participation in the preservation of the aquatic ecosystem.

Perhaps the main thrust of fisheries management interpretation should be programs that communicate not only resource management goals but research results. Fisheries should be integrated into the total resource management program as it ties in with toxic waste, recycling, food chains, cultural history, and a plethora of other use and preservation issues. Interpretation is the forum to address the consumptive nature of recreational angling and its relationship to the USNPS preservation mission. This is not an anti-angling position or a "fish-first" advocacy. Park Service policy permits recreational angling, and it is one way that the mission of providing enjoyment to the visitor is accomplished. However, the Park Service needs to address the preservation issue and others, such as: Why can flowers not be picked, yet fish harvested? What is the difference between fish, plants, and wildlife? Why are some exotic organisms removed from parks while some exotic fish are not, simply because they can be effectively managed? Why are some non-native fish species managed for recreational angling when research has shown they have a negative impact on native species and can be effectively controlled in some areas (Larson and Moore 1985; Moore et al. 1983)? Why attempt to restore native fish species to portions of their native range? These are difficult questions, perhaps all too often avoided in resource management programs and certainly in interpretive programs. If such issues are not clarified to the visitor, is not a double message being sent?

The interpretation of fisheries resource management issues and policies provides a golden opportunity to educate and enlist the park visitor as self-regulator and preserver of the fishery resource. The interpretation of fisheries management issues and policies will impart to the public an appreciation of the importance of a relatively unobservable resource, specifically fish communities, to the health of the observable whole, the biosphere. As biodiversity is preserved, so is our own survival.

Fisheries resources should be recognized as an integral part of the interpretive program in those parks where they exist. This means including fisheries as an interpretive theme in the Annual Statement of Interpretation. To ensure the appreciation and ultimately the preservation of the native stream, lake, or marine environment, we must focus not only on the game and non-game fish, exotics versus native fish, etc., but also on other important components of the aquatic ecosystem. Aquatic snails, crustaceans, benthic worms, and the like should also be included under the fisheries program theme. Fisheries management resource issues and policies then could be incorporated into park interpretive programs and outreach programs presented in schools. They should be designed specifically to interpret fisheries issues, including fishing ethics, as well as how fish and related aquatic resources are intimately connected with the more observable biosphere. Interpretive brochures should focus on reintroduction programs, studies of fish populations, and angling. Brochures encouraging non-consumptive use of native sport fish and non-sport fish are essential. Wayside exhibits should explain why such use is encouraged, and why fishing for exotics is not. This could be an excellent opportunity to relate to the visitor the conflict of preservation and recreation.

Finally, it is imperative that resource management staff and interpretive staff work together to best educate the park visitor. Interpretation's involvement with research can help educate interpreters. Lovaas aptly stated in the summer 1989 issue of *Interpretation*, "As the National Park Service's primary interface with visitors and nature, and thus keepers of the flame of inspiration, Interpretation bears a heavy responsibility. To meet that responsibility, Interpretation must understand and utilize the fruits of Research. Interpretation must understand Research, its role and how to interact with

it." The sharing of data and questions regarding management of all park natural resources is important to best communicate to visitors the Park Service mission and the difficulty inherent in accomplishing the mission.

But first, to be an effective resource management tool, interpretation must reflect resource management and science issues and policies. Therefore, policy changes must occur first, especially regarding management of the fishery resource. Then management plans based on sound scientific data must be communicated clearly and accurately to the interpretive branch, which then passes them on to the public. Interpretation of fisheries management issues and policies may then be one of the most potent ways the Park Service mission can be illuminated to the ultimate resource preserver—the park visitor.

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