

# Potential Implications of the Federal Aid in Sport Fish Restoration Program for Fisheries Management in the Caribbean Basin

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## ABSTRACT

Marine fisheries resources in the Caribbean basin offer an opportunity to develop an economically stable and environmentally sustainable form of tourism. The development of marine recreational fisheries in the Caribbean basin can result in jobs and improvements in the quality of life for Caribbean residents. However, the development of marine recreational fisheries in the Caribbean basin will require the combined efforts of government agencies, private citizens, private businesses and organizations. The Federal Aid in Sport Fish Restoration program in the U.S. has been successful in implementing the partnership approach to conservation. The basic structure of this program has potential ramifications for recreational fisheries management and conservation in the Caribbean basin.

**KEY WORDS:** Conservation funding, recreational licenses, partnerships

## INTRODUCTION

Marine fisheries resources in the Caribbean basin offer an opportunity to develop an economically stable and environmentally sustainable form of tourism. Moreover, the development of marine recreational fisheries in the Caribbean basin can result in jobs and improvements in the quality of life for Caribbean residents (Schmied, 1985). The development of marine recreational fisheries in the Caribbean basin, however, will require the combined efforts of government agencies, private citizens, private businesses and organizations.

Government actions toward tourism, however, have been biased toward the "wanton self-indulgence and hedonistic" aspects of traditional Caribbean tourism pursuits (O'Reilly, 1983). This bias together with government inaction toward tourism may ultimately be detrimental to economic stability and natural resources if tourism impacts are unmitigated or unregulated. Since the influx of mass tourism that began in the 1960s, tourism has become the main economic sector for many Caribbean countries and many countries are economically

dependent upon tourism (Curtin, 1987). The latter two factors, when combined with the fisheries resources and opportunities available in the Caribbean, provide an opportunity to develop economically sound and environmentally sustainable recreational fisheries in this area.

Tourism and associated developments are increasingly pressuring the marine fisheries resources in the Caribbean. Beach erosion, reef destruction, and near-shore pollution are increasing in the Caribbean basin and if not controlled or mitigated may result in the decline of important game fish species in certain areas. Moreover, tourism is continuing to increase in most Caribbean countries (World Tourism Organization, 1995) and this increase will likely pressure the existing fish stocks further through direct and indirect impacts. The combination of increased tourism and accompanying impacts has increased the need for conservation efforts in this area.

Conservation efforts in Caribbean countries are likely to be faced with impediments similar to those encountered in South America and other developing countries. Mares (1986) identified seven primary factors that are causing conservation problems in South America. These factors included 1) lack of data, 2) lack of people trained in conservation, 3) lack of money, 4) lack of a coordinated plan for the long term, 5) short term strategies 6) weak economies and 7) the air of panic. Moreover, sustainable tourism strategies for the Caribbean basin proposed by Darrow (1995) can be incorporated into conservation funding efforts in this area. The seven impediments to conservation identified by Mares (1986) are not unique to South America or Caribbean countries. Fisheries conservation efforts in the United States were faced with similar challenges throughout much of the 20th century and many of these impediments have been overcome by the implementation of the Federal Aid in Wildlife and Sport Fish Restoration programs.

The Federal Aid in Wildlife and Sport Fish Restoration programs are the cornerstone of state fish and wildlife conservation efforts in the United States. These two multi-faceted programs affect almost all functions of state fish and game agencies by protecting license fees, providing funding, and ensuring compliance with a variety of national and state laws. The Federal Aid in Sport Fish Restoration program has provided over \$2.6 billion in funding since 1950. In addition to providing funding, the U.S. Fish and Wildlife Service, in their role in federal administration of the program, has provided technical assistance to state fishery agencies to ensure that projects completed with program funds meet specific requirements that are designed to insure benefits to sport fish species and anglers. Program accomplishments under the Federal Aid in Sport Fish Restoration program have resulted in the improvement of over 2,520 miles of streams and rivers and 24,000 acres of lakes and reservoirs by state fish and game agencies in 1989 alone (U.S. Fish and Wildlife Service, 1990).

The Federal Aid in Sport Fish Restoration Act, commonly referred to as the Dingell-Johnson Act, was passed by Congress in 1950. This act was patterned after the Federal Aid in Wildlife Restoration Act, which became law in 1937. This act imposes excise taxes on fishing equipment and related items. Funds are collected by the U.S. Department of the Treasury and then apportioned by the U.S. Fish and Wildlife Service to state fishery agencies for use in their fisheries management efforts. The act was amended by Congress in 1984 to increase the items from which the excise tax is collected, including capturing a portion of the federal gasoline taxes that were attributed to boats. This amendment (commonly known as the Wallop-Breaux amendment) dramatically increased funding available from this program. Prior to this amendment, approximately \$35 million was collected annually for sport fisheries management efforts; the 1996 apportionment from this program exceeded \$273 million.

Several factors have been critical to the success of the Federal Aid in Sport Fish and Wildlife Restoration programs. Foremost is the requirement that states must pass legislation preventing the diversion of funds received from the sale of hunting and fishing licenses for purposes other than the administration of the state fish and game agency. Second, these are the only two federal conservation programs that have received permanent indefinite appropriation status. This status ensures that funds are automatically appropriated from these programs, thus providing a consistent federal funding source for conservation efforts by state fish and game agencies. Third, these funds provide a 3:1 reimbursement for eligible projects, which allows license fees to be leveraged and larger projects to be accomplished. Finally, these programs involve a triad of partners that include state fish and game agencies, the U.S. Fish and Wildlife Service and the hunting and fishing tackle industries. The partnership that has evolved through these grant programs has resulted in successful, modifiable relationships that have met many of the challenges of fish and wildlife management needs in the United States. The basic structure of this program has potential ramifications for recreational fisheries management and conservation throughout the world. Currently, Brazil and Japan are considering implementing versions of this program.

The first factor Mares (1986) identified creating problems with conservation efforts in South America was the lack of data on resources. Similarly, Ditton (1982) established a variety of information needs in the Caribbean, including needs for information on both fish and anglers before recreational fisheries could be developed in this area. This same obstacle was prevalent in the United States in the 1920s and 1930s. During this period, many newspaper articles and individuals lamented that many species of big game, including white tail deer and pronghorn, were near extinction. While populations were undoubtedly low, the lack of any data made these concerns even more ominous. Accordingly, research

and survey activities were included as eligible activities for funding under the Federal Aid in Wildlife Restoration Act in 1937. These activities were also included as being eligible for funding in the Federal Aid in Sport Fish Restoration Act in 1950.

The lack of trained people in conservation was the second factor Mares (1986) identified as affecting conservation efforts. This same scenario was overcome by the Federal Aid in Wildlife and Sport Fish Restoration programs. In the 1930s and 1940s, state fish and game agencies consisted primarily of law enforcement officers. At the state level, there were few, if any, trained wildlife biologists. Most of the trained biologists were employed by the U.S. Fish and Wildlife Service. Because Congress and others recognized the need for more wildlife biologists, eligible activities did not include funding law enforcement activities from these programs. In the absence of trained personnel at the state level, the U.S. Fish and Wildlife Service provided technical assistance through their role in oversight and administration of these programs. This same type of oversight by trained fish and wildlife professionals from an administrative position would be critical in the early years of fisheries management and restoration programs in foreign countries.

From both conservation (Mares, 1986) and tourism perspectives (Wallace 1991), local control of the program is essential. Thus, it is important that conservation efforts in the Caribbean be guided by local residents trained in fisheries management. This training may come from universities in the United States and Caribbean basin or the U.S. Fish and Wildlife Service's National Conservation Training Center in West Virginia. The ineligibility of law enforcement efforts for funding has allowed a great amount of resources to be focused on research and surveys, including many projects completed in cooperation with universities and graduate students. The result of this research has been increased knowledge on fisheries and wildlife management and a secondary benefit has been the increased education and training opportunities in fisheries and wildlife management, including that of many international students that come to universities in the United States to receive training in wildlife and fisheries management and then return to their native countries with this knowledge.

The third factor Mares (1986) identified that affect conservation efforts in South America is the lack of money. The Federal Aid in Sport Fish and Wildlife Restoration programs have provided a consistent source of funding for conservation efforts for 47 and 60 years, respectively. This has been accomplished by 1) protecting the diversion of program assets and hunting and fishing license fees for uses other than by the state fish and wildlife agencies and 2) by providing a 3:1 match of federal funds for eligible projects. Although the two programs have provided over \$5 billion in federal funding over their history,

the anti-diversion legislation requirement of these programs has protected benefits estimated between \$10 - \$15 billion.

The requirement of a recreational fishing license is important for the development of recreational fisheries in the Caribbean. Funds from the sale of fishing licenses could be used to generate substantial revenue for fisheries management, infrastructure development, and promotion (Radonski and Dubose 1982). In spite of the funding opportunities, most Caribbean countries do not require a recreational fishing license for a variety of reasons, including the perceived inability of locals to afford a license. Consistent funding sources are essential for conservation and license fees for locals could be set at affordable levels. For example, non-residents could be charged higher fees. It is common practice in the United States to charge higher license fees for non-residents than residents; for example, a resident fishing license in Texas costs \$19 and a non-resident license costs \$30. The non-resident/resident ratio is typically even higher for hunting licenses in the United States; for example resident hunting license in Texas costs \$19 and a non-resident license costs \$250.

In addition to license fees, a variety of other potential sources exist for funding conservation efforts in the Caribbean basin. Darrow (1995) recommended an additional charge be placed on airline tickets for non-national people traveling into a country and earmarking these funds for conservation. Other sources could come from requiring fishing guides to be licensed, taxes on other forms of transportation, food or lodging. Radonski and Dubose (1982) recommend that a portion of the room taxes collected from motels and hotels could be used for promotion of recreational fisheries in the Caribbean.

The lack of a coordinated plan for management is another impediment to conservation efforts (Mares, 1986). Similarly, from a tourism perspective there is the need of a shared vision between local participants and other partners or governments to guide nature tourism development in the Caribbean (Darrow, 1995). Both Mares (1986) and Darrow (1995) reiterate the importance of local people in the planning process. Any plan is likely to fail if the plan does not have the support, understanding, and participation of the local people (Mares 1986). These obstacles are similar to ones encountered by the U.S. Fish and Wildlife Service and state agencies at the inception of the Federal Aid in Wildlife Restoration program. Working cooperatively, the U.S. Fish and Wildlife Service and state fish and game agencies have overcome these obstacles in a variety of ways. First, because of the program's oversight responsibilities, the Fish and Wildlife Service must review projects to determine their substantiality in character and design in order to be eligible for funding. This oversight ensures that the funds are well spent and directed towards worthy projects. In addition, the U.S. Fish and Wildlife Service is required to coordinate its actions with various other state and federal agencies; thus the combination of the state agency

working with the oversight of a federal agency has improved coordination amongst various levels of government. Further, the actual control of the project belongs to the designated state fish and game agency. The states' control over the project implantation also requires coordination among state agencies and local entities. This is an important facet to remember in light of having local support for projects.

The input of the hunting and fishing industries have been critical to the success of the federal programs. Both industries have been active participants in the administration of the programs and have helped determine the mission of the programs. The hunting and fishing industries have worked to protect these programs when the Congress attempted to divert funds for other purposes. Industry has also been proactive in expanding program authority, as exemplified by the allowance of aquatic education activities for funding under the 1984 amendment to the Federal Aid in Sport Fish Restoration Act.

Further, the Fish and Wildlife Service has actively promoted coordinated planning efforts by state fish and game agencies, and maintains management specialists in its Management Assistance Team to assist state agencies in their planning efforts. Specialists from this team have already assisted some African nations with the development of strategic plans for the management of their resources. This team could be used to train foreign personnel in natural resource planning techniques that have proven effective in the U.S..

Many countries have weak economies, which creates an obstacle to conservation in these countries (Mares, 1986). Once again, the federal aid programs have been successful in a similar environment in the United States. The Federal Aid in Wildlife Restoration Act was signed into law in the 1930s during the Great Depression. In spite of a weak and troubled economy, the initial act was signed and state's began receiving apportionments in 1939. Since that time, the Federal Aid in Wildlife and Sport Fish Restoration programs have continued their success during good and bad economic times in the U.S. Moreover, anglers spent \$38 billion on fishing-related expenses during 1996 (U.S. Department of Interior and U.S. Department of Commerce 1997) and supported over 1 million jobs.

Weak economies also create the obstacle of short-term strategies identified by Mares (1986). Many countries are plagued by high inflation rates which create a volatile economic environment. Thus, a rapid investment return on some projects is likely critical for continued support of any conservation efforts. This can be achieved through the careful selection of projects funded by a country. Certain projects would be expected to have a quicker impact than others and should be concentrated on first. Examples might include artificial reef construction projects, building additional marina infrastructure or other high visibility projects that would garner program support. When sufficient

infrastructure is developed, tournaments or other high profile angling events could be held to quickly attract anglers to the area. Foreign anglers can have a significant effect on local economies. For example, charter boat and panga billfish anglers spent \$24 million in the southern Baja area of Mexico (Ditton *et. al*, 1996). In Costa Rica, billfish anglers spent an estimated \$5.4 million (excluding airfare) and had a total estimated economic impact of \$17.7 million on the Costa Rica economy (Ditton and Grimes, 1995).

The final factor that Mares (1986) notes there has been an air of panic associated with conservation efforts in South America. Dire claims are routinely made regarding the future of natural resources. Yet, many of these claims are ungrounded in light of the fact that in actuality little is known on the status of many of these resources. As mentioned earlier, similar dire predictions were made in the United States during the 1920s and 1930s and the federal aid programs provided the assistance in acquiring the data and restoring fish and wildlife species to eventually reduce the panic that existed. Many of the big game and fish species that many thought would become extinct are now at levels that allow recreational use and some species are at near record population levels.

#### CONCLUSION

Situations and obstacles to conservation of wildlife resources in the United States over 60 years ago appear very similar to conditions in Latin America and the Caribbean basin. Experience suggests that conservation programs that incorporate the many facets of the Federal Aid in Wildlife and Sport Fish Restoration may prove successful in other countries. In particular, oversight by trained fisheries and wildlife professionals in a national agency that review projects proposed by smaller political units of government can meet the criteria for successful programs mentioned in Mares (1986). Moreover, a partnership of government agencies and private businesses or individuals will enhance the probability that conservation programs will succeed and flourish in spite of the many challenges that will be faced.

Countries adopting a similar conservation program involving stable and continuous funding likely will generate numerous local economic benefits, including jobs, tourism growth, improved infra-structure, and enhanced fish and wildlife populations.

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