

VISITOR USE FEES IN PROTECTED AREAS

Synthesis of the North American, Costa Rican and Belizean Experience



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EXECUTIVE SUMMARY

Worldwide, travel is increasing and travelers have expanded notions about the nature and quality of their travels. As vacationers attempt to make their travels educational as well as recreational experiences, they are trading conventional beach vacations for nature and culture based trips. Nature tourism, travel with the purpose of experiencing natural areas, is growing in popularity. The nature tourism industry has been growing at an astounding rate over the past two decades. Increasing numbers of individuals are spending increasing amounts of money to visit and have access to pristine natural areas. Often times, tourists are drawn to particular countries to experience national parks and protected areas, especially in the developing world.

In developed nations such as the United States and Canada, protected areas historically have been funded through tax-based governmental appropriations. Recently however, monies appropriated for protected area operations have decreased and visitation has increased. Protected area systems in these countries are turning to park-generated revenue to fund protected area operations and maintenance. National parks in the United States and Canada are developing innovative methods of funds generation through a variety of user, entrance and concession fees. Some park systems in the United States are operating completely self-sufficiently, with user fees covering all operational costs. In North America, protected area managers are gradually turning towards visitor use and concessions fee policies that are market based.

Tourists, especially from developed nations, are interested in experiencing the splendor of national parks and protected areas worldwide. Some of the most biodiverse national parks are located in developing nations. Often, governments of these nations have little money to contribute to the operations of their protected areas. Protected areas may have poor infrastructure and insufficient funds to employ capable managers. In the developing world, protected areas often turn to the visitors for revenue-generation. Managers levy fees to cover the costs of each individual visit in order to maintain protected areas in proper operating order. To date, however, there are no criteria for determining and implementing visitor use fees at national parks and other protected areas.

This report provides a survey and evaluation of visitor use fee systems functioning in the United States, Canada, Costa Rica and Belize. The findings and recommendations will contribute to The Nature Conservancy's Ecotourism Program visitor use fee and concession systems initiative. This initiative is working to develop ecotourism management plans and implement visitor use fee systems that realize the economic value of recreation services and fund conservation of protected areas. The report begins with a review of the basic resource economics of protected areas and tourism. The second section summarizes the history and current status of the United States National Park Service visitor use and concession fee systems. A review of the U.S. state park systems follows, with a more detailed look at four individual state systems. The fourth section examines the current status of Parks Canada and Canadian provincial park systems. In order to compare differing management policies and fee systems found in developed nations and developing nations, the following two sections review park systems in both Costa Rica and Belize. The final section discusses the pros and cons of visitor use fee systems, fee strategies, and provides recommendations for developing fee systems in protected areas.

CONTENTS

ACKNOWLEDGEMENTS.....	i
EXECUTIVE SUMMARY	iii
I. INTRODUCTION	1
NATURE TOURISM.....	1
ECONOMICS OF PROTECTED AREA VISITATION	2
Existence value.....	3
Ecosystem valuation	3
RECREATION ECONOMICS.....	4
Costs of protected areas.....	4
Benefits of protected areas.....	5
Willingness to pay.....	5
VISITOR USE FEES	6
Types of fees.....	6
REPORT NOMENCLATURE.....	7
II. UNITED STATES NATIONAL PARK SERVICE	8
HISTORICAL PERSPECTIVE.....	8
ROLE OF FEES IN THE NATIONAL PARK SERVICE	8
Visitor fee controversies	9
NATIONAL PARK SERVICE CURRENT STATUS	10
Recreational Fee Demonstration Program.....	13
Concessions.....	14
SUMMARY.....	15
III. U.S. STATE PARK SYSTEMS	17
STATE PARK FUNDING	17
IDAHO	20
TEXAS	23
The Entrepreneurial Budgeting System.....	23
NEW HAMPSHIRE	26
New Hampshire parks funding.....	26
VERMONT.....	28
Vermont parks funding.....	28
SUMMARY.....	29
IV. CANADIAN PARK SYSTEMS	31
CANADIAN PROTECTED AREA VISITOR USE FEES.....	32
PROVINCIAL PARK POLICY.....	33
PROVINCIAL PARK FUNDING	34
CANADIAN PARK CONCESSIONS.....	35
SUMMARY.....	36
V. NATIONAL PARKS OF COSTA RICA	37
HISTORICAL OVERVIEW.....	37
CURRENT STATUS.....	38
PRIVATE RESERVES	39

SUMMARY.....	39
VI. NATIONAL PARKS OF BELIZE	41
HISTORY AND CURRENT STATUS	41
THE COMMUNITY BABOON SANCTUARY	42
BELIZE AUDUBON SOCIETY	42
SUMMARY.....	43
VII. COMPARISON AND TRENDS IN PARK SYSTEMS	44
VIII. MANAGEMENT OPTIONS AND RECOMMENDATIONS.....	46
PROS OF VISITOR USE FEES	47
CONS OF VISITOR USE FEES	48
PRICING SCHEMES	49
HOW MUCH SHOULD WE CHARGE?.....	50
Marginal cost pricing	50
Comparable pricing.....	50
Multi-tiered pricing.....	51
Differential fees	51
Other fee schemes	51
Reduced public resistance to fees	51
Protected areas with low visitation.....	52
REVENUE RETENTION BY PROTECTED AREAS	52
CONCESSIONS	53
Bidding on licenses	53
Tradeable licenses.....	53
Flat fees	54
Percentage of revenues	54
Construction of concession facilities	54
Role of local communities.....	54
IX. CONCLUSIONS	55
REFERENCES	56

LIST OF TABLES

TABLE 1. THE OUTDOOR RECREATION SYSTEM.....	4
TABLE 2. TYPES OF COSTS INCURRED BY PROTECTED AREAS.	5
TABLE 3. TYPES OF FEES AND CHARGES IN PROTECTED AREAS.	6
TABLE 4. NPS GOVERNMENTAL APPROPRIATIONS, FISCAL YEAR 2000 (US\$000).....	10
TABLE 5. TOTAL FEES COLLECTED BY THE NATIONAL PARK SERVICE, 1998-1999, (US\$).....	11
TABLE 6. RECEIPTS COLLECTED BY NATIONAL PARK SERVICE, (US\$000).....	13
TABLE 7. REVENUES GENERATED BEFORE AND AFTER THE INSTITUTION OF THE U.S. RFDP, (US\$).....	14
TABLE 8. SIZE AND NUMBER OF U.S. STATE ADMINISTERED AREAS, 1999.	17
TABLE 9. VISITATION FOR U.S. STATE PARKS SYSTEMS, 1999 (INCLUDES ALL TYPES).....	17
TABLE 10. VISITATION FOR IDAHO STATE PARKS, 1999.	20
TABLE 11. IDAHO STATE PARK VISITOR USE FEES, 1999.	22
TABLE 12. VISITATION FOR TEXAS STATE PARKS, 1999.....	23
TABLE 13. TEXAS STATE PARK VISITOR USE FEES, 1999.	25
TABLE 14. VISITATION FOR NEW HAMPSHIRE STATE PARKS, 1999.....	26
TABLE 15. NEW HAMPSHIRE STATE PARK VISITOR USE FEES, 1999.	27
TABLE 16. VISITATION FOR VERMONT STATE PARKS, 1999.	28

TABLE 17. VERMONT STATE PARK VISITOR USE FEES, 1999.	29
TABLE 18. PARKS CANADA NATIONAL PARKS ATTENDANCE, 1999-00.	31
TABLE 19. PARKS CANADA ATTENDANCE, 1995-95 TO 1999-00.	32
TABLE 20. CANADIAN PROVINCIAL PARKS AGENCIES BUDGETS, 1994-95, (CD\$).....	34
TABLE 21. SOURCES AND RETENTION OF REVENUE IN CANADIAN PROVINCIAL PARK AGENCIES, 1994-95.	35
TABLE 22. NUMBER OF VISITORS TO A SAMPLE OF BELIZE'S PROTECTED AREAS.....	42
TABLE 23. PROTECTED AREAS MANAGED BY THE BELIZE AUDUBON SOCIETY, SIZES AND ENTRANCE FEES, 2000. 43	
TABLE 24. COMPARISON OF PARK SYSTEMS.	45
TABLE 25. TYPES OF PROTECTED AREA PRICING STRATEGIES.....	50
TABLE 26. CONCESSION FEE PRICING STRATEGIES	53

I. INTRODUCTION

Nature tourism

To define nature-based tourism succinctly is not an easy task as there are many variations and differences of opinion. Honey (1999) recognizes four types of nature-based tourism. Nature tourism involves visiting a pristine natural area to appreciate nature. Adventure tourism involves visiting a natural site and pursuing some sort of physical, risk-taking behavior, such as whitewater rafting or spelunking. Wildlife tourism involves visiting a natural area to view native fauna. Finally, ecotourism involves both experiencing nature and benefiting the host community as well. The Nature Conservancy joined the World Conservation Union in adopting the definition of ecotourism as *"environmentally responsible travel and visitation to natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features, both past and present) that promote conservation, have a low visitor impact and provide for beneficially active socio-economic involvement of local peoples."*

In 1999, over 664 million international tourists collectively spent over US\$455 billion during their travels (World Tourism Organization 2000). Tourist arrivals have been increasing at an annual rate of 7 percent for the last 50 years (World Tourism Organization 2000). Nature tourism has played a significant role in the increase in international and domestic tourism in the last decades. One study indicates that of the 528.4 million tourist arrivals in 1994, 211-317 million of these were nature tourists and 106-211 million were wildlife-related tourists (The Ecotourism Society 1998). Furthermore, ecotourists are generally willing to spend more than general tourists, in one survey of experienced ecotourists, 45 percent said they would spend US\$1500 per person per trip (Wight 1996). Nature tourists play an important role in present day tourism and recreation.

Nature tourism, and specifically ecotourism, is an exciting option for developing nations with protected natural areas because it can support both nature conservation and sustainable development when carried out properly. Nature tourism has multiple social and economic benefits. Most importantly, nature-based tourism brings recognition and economic justification to sites that would not otherwise be preserved and maintained (Boo 1990). Social benefits that arise from nature tourism may be very hard to quantify. Benefits that stem from the actual preservation of ecosystems, such as erosion control, nutrient cycling, and preserving biodiversity, have no market price and hence no market value (Sherman and Dixon 1991). Other benefits, such as the actual revenues earned from fees and taxes however, are more easily quantified (Sherman and Dixon 1991).

Nature-based tourism gives economic alternatives to local community residents who may otherwise exploit protected area resources unsustainably for income generation. Local peoples' expertise and knowledge can be applied to conservation of vulnerable sites. They can aid in planning and it gives them an economic interest in the protected area (Lindberg 1991). Locals also benefit if the government compensates them when protected area development displaces them, as happened to the Maasai of Kenya (Lindberg 1991). Alternative employment as guides or porters and self-employment through production of handicrafts and souvenirs also supports local populations. Tourism to rural areas stimulates the economy and brings improvements to local infrastructure such as ground transportation and communications (McNeely *et al.* 1992). Additionally, it generates foreign exchange and creates a forum for cross-cultural exchange and understanding (McNeely *et al.* 1992).

However, there are both ecological and economic controversies surrounding nature tourism. For example, unrestricted use of sensitive protected areas can lead to overuse and subsequent degradation of the ecosystem. Countries generally cannot retain revenues generated by protected areas. Often, what monies the country retains do not revert to protected areas and nearby residents (Lindberg 1991). Funds spent purchasing imported goods to support ecotourism are known as leakages; more of this occurs providing for foreign tourists in less developed regions (Boo 1990). It is estimated that in developing nations 55 percent of tourism revenues leak out of local economies and back to developed nations (Frueh, 1988 cited in Boo 1990). Leakages in conventional tourism, such as beach vacations, and nature tourism are higher than in ecotourism.

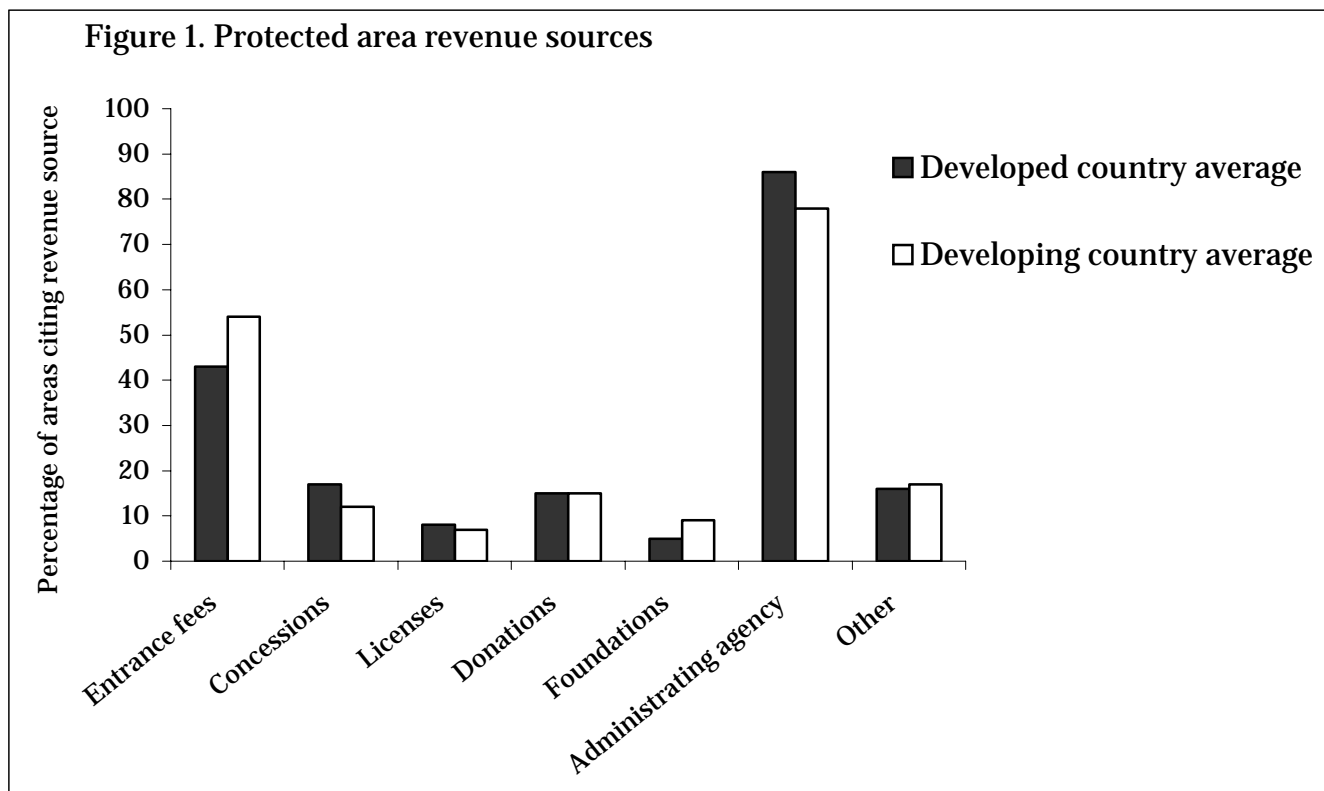
Ecotourism also has a greater multiplier coefficient than conventional tourism. The multiplier effect takes into account the effect the economic benefits of a tourist expenditure past the first beneficiary of the money (Drumm 1991). A tourism multiplier is the number by which one unit of tourist expenditure must be multiplied to obtain the actual cumulative income effect (Mathieson and Wall, 1982 cited in Drumm 1991). It is essentially the effect of one unit of money on the local economy. This income then goes to pay for rent, salaries of local employees, and other goods for tourists. The income stays in the system as long as there is demand for commodities produced locally and until it is lost in the form of leakages (Drumm 1991). Additionally, economic dependence on nature tourism is risky due to the unpredictable nature of the tourism business (Boo 1990). Unfavorable weather, political instability and currency exchange rate fluctuations increase the risk of failure (Boo 1990). Despite these negative aspects, many conservationists approve of nature tourism because it increases funding and conservation of protected areas (Lindberg 1991).

Economics of protected area visitation

Protected areas draw huge numbers of tourists annually. In a survey of 3,342 American households, 55.8 percent of the nature-based tourists responded that they visited a park in their last vacation (The Ecotourism Society 1999). Worldwide, national parks are often the main attraction and destination for ecotourists. Nature and protected areas are given high implicit value in society; this assumption is based on high amounts that nature tourists are willing to spend to observe pristine locations (van der Straaten 1997). Despite their obvious popularity with tourists for recreational activities and with conservationists for preservation of nature, protected areas are rarely given economic value (van der Straaten 1997). To date, there is no reliable method for valuing protected areas (Shah 1995). Competitive markets, where protected areas or their commodities can be traded freely, do not exist. Historically, there has been no ownership of natural resources and they have been unlimited in supply (Shah 1995). In the recent past however, resources have become increasingly scarce. Due to the lack of markets and hence prices, this scarcity is not seen and acted upon (Shah 1995). As a proxy for valuation of protected areas, the value of tourist operations is most easily quantifiable and most often attributed to protected areas (Shah 1995).

Protected area managers have the difficult job of trying to preserve and protect natural resources while simultaneously attracting and managing visitors. Most protected areas in the developed world are funded through national government appropriations (see Figure 1). Revenue generated through entrance fees, concessions, and licenses then passes to a government treasury account (Lindberg 1991). Where protected areas retain the revenue they generate, management often levies visitor use fees for access and use of protected area facilities. Visitor use fees serve the dual purpose of generating money and limiting or managing access by visitors. Instituting and setting fees for public parks and protected area use is a delicate matter for park managers because they must attempt to quantify the value of a protected area (Ibrahim

and Cordes 1993). The lack of competitive markets in the protected area industry and the difficulty of determining the economic value of a protected area further complicates the situation of how much a consumer should pay for its use (Ibrahim and Cordes 1993).



Source: (Lindberg and Enriquez 1994a)

Existence value

Existence value refers to the value people impute to nonmarket commodities. Individuals base this value on the intrinsic qualities of the commodity (Terborgh 1999). In developing nations, taxes are used for the construction and maintenance of museums, parks and monuments; taxpayers may never actually visit these sites, but they are valued for their sheer existence (Terborgh 1999). However, in developing nations, the existence value of protected areas differs. The existence value of Madagascar's Mantadia National Park to local villagers was negative because they were prohibited from gathering wood and cultivating the land (Shyamsundar and Kramer 1996). In developing nations, protected areas often have zero existence value because urban residents may place some value on their existence while locals place negative value on them (Terborgh 1999).

Ecosystem valuation

We value protected natural areas for the virtually untouched habitat and preserved ecosystems contained within their borders. Economists can easily quantify the economic value of the resources (natural capital; e.g., timber and minerals) within an area. However, these estimates do not normally include the economic value of the ecosystem services, the option value, existence value or recreation value of the site. As natural areas become more exploited and protected areas become scarcer, it is crucial to include the value of such services and uses in the

economic valuation of an area (Daily *et al.* 2000). Ecosystem services are rarely considered in policy making because they are not traded in commercial markets (Costanza *et al.* 1997). Additionally, markets do not reflect the social costs and benefits of ecosystems, thus the most difficult dilemma is inferring value (Daily *et al.* 2000). Pricing nature is often controversial but when values are not estimated, ecosystem services are considered free in economics and markets (Daily *et al.* 2000).

Costanza *et al.* (1997) estimated the current value of the 17 ecosystem services for 16 of the earth's biomes at US\$33 trillion, with a range of US\$16-54 trillion. This is considered a minimum estimate (Costanza *et al.* 1997). In this study, recreation was given the annual value of US\$815 million globally (Costanza *et al.* 1997). A study by Tobias and Mendelsohn (1991) valued the economic value of the Monteverde Cloud Forest Biological Reserve, in Costa Rica. This study is one of a few that addresses the recreation and tourism value of a protected rain forest (Tobias and Mendelsohn 1991). Using the travel cost method they revealed that Costa Rican citizens place a value of US\$35 per visit, annually totaling US\$97,500-116,200. Since 1998 foreign visitors outnumbered nationals four to one, foreign visitation would represent an additional US\$400,000-500,000 annually. This is a minimum estimate since foreign tourists presumably would place greater value on the site (Tobias and Mendelsohn 1991). The estimated value of an ecosystem and its services should also be considered when levying visitor use fees.

Recreation economics

Outdoor recreation can be viewed in traditional economic terms (Table 1). Normally, natural attractions are considered limited nonrival goods where one user's enjoyment does not impinge on another's enjoyment. However, heavy use causes congestion, environmental degradation, and cultural disruption, which in turn reduces the value to the user and hence the demand for the resource (Lindberg 1991). Natural attractions are also often thought of as merit goods, which is "a good the consumption of which is deemed to be intrinsically desirable" (Pearce 1997). Public parks and other recreation sites are considered merit goods because they benefit society in general, some users believe public funds should subsidize those who can not afford it (Harris and Driver 1987). Therefore, merit goods are often subsidized to encourage use by all citizens.

TABLE 1. THE OUTDOOR RECREATION SYSTEM.

Element	Economic parallels
Visitors	Demand
Protected areas and outdoor recreation places	Supply
Plans and policies	Pricing system
Tools and principles of recreation administration	Management

Source: (Knudson 1984)

Costs of protected areas

Various costs associated with protected area operations and administration must be considered (Table 2). Operational costs, such as personnel salaries, tourist facilities and services are easily quantified. Other costs may be difficult to determine (Ceballos-Lascurain 1996). Costs such as environmental degradation and adverse impacts on wildlife are usually overlooked by protected area management and hence not factored into the operational costs of the area. The ecosystems within protected areas contain natural capital such as timber, minerals, and other resources exchanged in formal markets (Morton 1999). Opportunity cost is a measure of the benefits forgone when a resource, such as timber or minerals, is protected rather than exploited. However other ecosystem outputs such as watershed protection and scenic beauty have no formal market and are therefore undervalued in economics and hence in user fee policy (Morton

1999). Another cost associated with protected areas in developing nations is the reduction in local households' welfare when residents are prohibited from accessing protected area resources and lands (Shyamsundar and Kramer 1996).

TABLE 2. TYPES OF COSTS INCURRED BY PROTECTED AREAS.

Costs	Description
Direct costs	Include facilities construction, maintenance and administration of the site.
Environmental degradation	Degradation associated with use of the site; e.g., soil erosion, water pollution, disturbance of wildlife.
Congestion	An additional user imposes a cost on all other users by reducing solitude.
Cost of natural resources	Cost of the land and related resources.
Reduced welfare of locals	Negative impact on locals due to restricted access to protected area resources.
Resource opportunity cost	Resource value forgone because recreation or preservation is produced; the commercial value of the resource is lost to society.

Sources: (Binkley and Mendelsohn 1987; Walsh 1986; Ceballos-Lascurain 1996)

Benefits of protected areas

The economic benefits derived from a protected area may also be difficult to quantify. The financial benefits of revenue generated through visitor use fees and concessions are easily determined. Other benefits are more difficult to value. For instance, the value of the benefit received from heightened environmental awareness and knowledge gained by protected area visitors would be difficult to assess (Ceballos-Lascurain 1996). Additionally, the benefits of an intact ecosystem and the associated services preserved in a protected area are not easily quantifiable. Benefits and costs can be used to perform a cost-benefit analysis, which determines the value of a project by subtracting the costs from the benefits (Ceballos-Lascurain 1996). Opportunity cost is generally the cost used by economists when performing a cost-benefit analysis and consumer surplus is used as a measure of benefits. Consumer surplus is benefit gained through consumption of a commodity above what the consumer must pay for that commodity (Ceballos-Lascurain 1996). The travel cost and the contingent valuation approach are two methods economists employ to determine non-market costs and benefits of a protected area. These two methods attempt to establish the amount a consumer is willing to pay for a specified commodity.

Willingness to pay

Willingness to pay and the costs of supplying recreation services form the economic foundation of protected area visitor use fees (Binkley and Mendelsohn 1987). "Willingness to pay" refers to the amount users are willing to pay for benefits derived from a protected area visit in relation to other competing uses of their income (Laarman and Gregersen 1996). Generally, willingness to pay is higher or lower depending on the visitor's income, education, occupation, the site's qualities, rarity or uniqueness, and the availability of ground transportation and accommodations (Laarman and Gregersen 1996).

The two most widely used methods to measure benefits and public willingness to pay for public protected area and natural resource recreation are the travel cost method and the contingent valuation method. The travel cost approach is based on observed market behavior of users in response to direct out-of-pocket costs such as food, lodging and transportation and the time cost of travel to the recreation site. This method estimates the value users place upon a site from their travel behavior (Tobias and Mendelsohn 1991). The number of visitors to the site from different origins is summed and the inverse relationship between the travel costs and visitation rates forms a demand curve (Laarman and Gregersen 1996). Willingness to pay can then be derived from the downward sloping demand curve (Laarman and Gregersen 1996). Generally, as

the distance to the site increases, the number of trips a visitor makes to the site will decrease (Walsh 1986) and as the price increases, consumers purchase less of a commodity (Tobias and Mendelsohn 1991). Contingent valuation relies on surveys of users and their stated intentions to pay for specific recreation services; willingness to pay is estimated from individual responses to specified hypothetical fees (Laarman and Gregersen 1996).

Visitor use fees

Worldwide, visitor use fees are underused management and revenue-generation tools. Most park agencies charge only nominal fees for entrance and facility use. The tourist industry enjoys higher profits than needed to keep it in business and tourists enjoy a large consumer surplus under low entrance fee programs (Lindberg 1991). Most managers of nature tourism facilities simply give their products away because they do not "appropriate the scarcity rent" and it either accrues to the tourism industry or is lost to tourists in the form of consumer surplus (Lindberg 1991). Some protected areas have the ability to "exploit the scarcity rent" for a commodity that is rare. For instance, there are no other protected areas with gorillas to compete with Parc National des Volcans in Rwanda, which has the last remaining gorillas in the country. This allows park managers to charge a US\$250 fee (Sholley 2000). In this case the site has a very unique draw and can charge higher fees because of high demand to see a wild gorilla. Protected areas with unique commodities can be managed as monopolies in terms of their pricing and output decisions (Lindberg 1991). They can both limit use and raise prices without competition (Lindberg 1991). However, competitive markets reach equilibrium where the supply and demand curves intersect and thus prices are not set higher than this equilibrium amount.

Types of fees

Protected areas have various methods of funding their operations and visitor management. In most cases tax-based governmental appropriations form the bulk of protected area funding. Instituting visitor use fees can both fund protected area operations and manage visitors. There are several common visitor use fees levied on protected area visitors and concessioners that operate on protected area property (Table 3). Protected area entrance fees are the most common method of fee collection (Lindberg 1991).

TABLE 3. TYPES OF FEES AND CHARGES IN PROTECTED AREAS.

Fee type	Description
Entrance fee	Allows access to points beyond the entry gate.
User fee	Fees for facilities within the protected area; e.g., parking, camping, visitor centers, boat use, shelter use, etc.
Concession fees	Charges or revenue shares paid by concessioners that provide services to protected area visitors.
Royalties and sales revenue	Monies from sales of souvenirs.
Licenses and permits	For private firms to operate on protected area property; e.g., tour operators, guides, and other users.
Taxes	Such as hotel room taxes, airport taxes, and vehicle taxes.
Leases and rent fees	Charges for renting or leasing park property or equipment.
Voluntary donations	Includes cash, 'in-kind' gifts, and labor; often through 'friends of the park' groups.

Sources: (Laarman and Gregersen 1996; Mackintosh 1983; Ibrahim and Cordes 1993; Harris and Driver 1987)

Despite conflict over charging the public for entrance and use of public protected areas, a 1989 survey of 372 chief executive officers of public leisure service agencies in the United States showed that park managers are in favor of fees (Brademas and Readnour 1989). Seventy-five percent of respondents stated that they charged fees because government appropriations do not

cover their costs. When asked what they based their fees on 40 percent said "some overhead" and 36 percent said "direct costs only." Sixty-seven percent felt that paying a fee for participation made individuals more considerate of the facility and 74 percent felt that they had greater control and discipline of participants when fees are charged (Brademas and Readnour 1989). The common belief that a fee system guarantees that only those that value the resource highly pay the fee and get to use it may explain the reduction in vandalism in protected areas where visitor use fees are levied (Binkley and Mendelsohn 1987).

REPORT NOMENCLATURE

For purposes of this report, the nomenclature of the National Association of State Park Directors will be used (McLean 1998). "Facilities" are man-made structures and improvements at parks and protected areas that help support public usage of the areas. "Day use" is a recreational outing where the visitor arrives and departs the same day and "overnight use" is an outing that involves an overnight stay as a sanctioned part of the recreational experience. "Fee areas" are parks and other areas where a fee is charged upon entering and reliable counts of visitation can be made; note that a fee area pertains to the protected area, not to individual facilities or use of areas within the protected area. "Non-fee areas" are parks where no general entrance fee is charged and attendance must be estimated. "Operating expenditures" are those expenditures that relate to the direct operation and maintenance of the state park system, while "fixed capital outlay" expenditures are those related to land acquisition and park construction.

II. UNITED STATES NATIONAL PARK SERVICE

Historical perspective

In 1872, the world's first national park, Yellowstone, was created in the United States (Mackintosh 1999). Throughout the late 1800s and early 1900s additional natural areas were designated as National Parks, with goals of preserving nature and promoting tourism. By 1916, the United States Department of the Interior was in charge of 14 national parks and 21 monuments. That same year, President Woodrow Wilson signed legislation that brought about the United States National Park Service (NPS) (Mackintosh 1999), with the mission "to preserve unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations" (National Park Service 2000b). Today, the National Park System is comprised of 379 areas located in almost every state and territory (Mackintosh 1999). NPS is responsible for a variety of places, including national parks, monuments, preserves, historic sites, historic parks, memorials, battlefields, seashores, and parkways. The purposes and uses of these areas are all quite different. Some areas (e.g., preserves and seashores) allow consumptive recreational activities, such as fishing and hunting, however, within the 54 national parks all hunting, mining and other consumptive uses are prohibited (National Park Service 2000a). The National Park system has a major economic impact in the US. In 1998, tourism in NPS areas indirectly and directly generated US\$14.2 billion and provided employment for over 300,000 individuals (Tourism Works for America 1997 cited by The Ecotourism Society 1999).

Role of fees in the National Park Service

The National Park Service has endured political, bureaucratic and administrative turbulence throughout its history. The topic of visitor use fees has been fodder for countless heated debates and controversies over the past century. National Park Service founders originally hoped that the administration and the parks within its system would be "self-sufficient, collecting revenue through user and concession fees to fund park operations" (O'Toole 1999b). In 1908, the first NPS fees (US\$6) were levied on vehicles in Mount Rainier National Park. At this time entrance fees were based primarily on road mileage within the park (Mackintosh 1983). By 1915, half the parks were charging entrance fees to pay for each park's road system, but "anything worth selling has even greater political value if it is given away" and in 1917 Congress set all entrance fees at US\$2 per car (O'Toole 1999b). Before July 1, 1918, the revenue generated by NPS was held in a special Treasury account and could be accessed and used directly for park development and administration without congressional appropriation (Mackintosh 1983). In 1918, legislation passed requiring all park receipts be turned into a U.S. Treasury account and the parks subsequently lost control of their revenues (Mackintosh 1983). This loss of direct control of fee receipts greatly reduced the Service's incentive to maximize income (Mackintosh 1983).

Throughout the 1930s and until 1940 intense debate surrounded the issue of charging visitor use fees. The 1930s saw a broader application of visitor use fees, although the actual dollar amounts were nominal. Rarely did park-generated revenues cover or exceed a park's operating budget (Mackintosh 1983). The Independent Offices Appropriation Act of 1952 contained a fee collection provision, with each agency head to set fees at levels that take into account the cost to the government and the benefit to the user. All revenues were paid directly into the Treasury (Mackintosh 1983). The Land and Water Conservation Fund Act of 1965 directed all entrance and recreation fees collected by NPS to be paid into a separate Treasury account (Mackintosh 1983). Seven years later, visitor fee revenues no longer went into the Land and Water Conservation Fund but were paid into a Treasury account to be used by the agency that collected

the fees. Nevertheless, the funds did not go directly to NPS, maintaining the lack of incentive for collection (Mackintosh 1983). The Interior Appropriations Act of 1981 required all visitor use fee revenues to be deposited once again in the Land and Water Conservation Fund by 1982. This act eliminated any financial incentive for park managers to collect visitor fees, again limiting the revenue's use for land procurement and state planning and development grants. Managers subsequently were uncompensated for their costs and benefited little from the income generated by fees (Mackintosh 1983).

Camping has always been an extremely popular activity in national parks and discussions and controversies over visitor use fees have spanned the decades. Campground fees were common throughout the early years of the park system and the debates on Capitol Hill did not lead to bans on fees until 1965, when campground fees were restricted (Mackintosh 1983). Not until 1970 were campground fees reinstated and rates based on the prices that existed locally (Mackintosh 1983). However, due to a change in legislative wording, NPS was again required to end its collection of campground fees in the middle of the 1973 season (Mackintosh 1983). The change in wording was immediately recognized and the next year's amendment to the Land and Water Conservation Fund reinstated campground fees (Mackintosh 1983).

Yosemite has always been one of the most popular parks in the United States and its campgrounds are continually congested. During a short period in the mid-1970s, the park attempted to address congestion by reducing the fee at certain campgrounds from US\$4 to US\$2 per night during the months of November through March, with aims to shift some of the crowds to the off-season (Mackintosh 1983). The expected shift in use did not occur, which led managers to conclude that most park tourists did not find the US\$4 fee high enough to move their travel dates to the winter season (Mackintosh 1983).

In 1976 the Bureau of Outdoor Recreation, under the direction of the Secretary of the Interior, commissioned a study of the public's willingness to pay for access to public recreation areas (Mackintosh 1983). Eight hundred households were surveyed and results revealed that that a majority of all demographic groups favored the visitor use fee concept as opposed to total reliance on general tax revenues. Additionally, most people were willing to pay higher fees than were then in effect. Surprisingly, lower income respondents showed the greatest support for recreation fees whereas those from higher income levels expressed more opposition to visitor use fees because they might deter lower-income group participation (Mackintosh 1983).

Visitor fee controversies

Many consider the national parks national luxuries and feel they should not be free. The subject of visitor use fees in NPS has always been controversial. Throughout the history of NPS there have been two conflicting views (Mackintosh 1983):

1. that park facilities and services should be accessible without charge to visitors and the full cost should be paid by taxpayers;
2. that parks should be funded by the people using them through entrance and visitor use fees.

Congress originally supported visitor use fees as a means of making parks self-sufficient but in the 1920s this was reversed and campground charges were prohibited. In the 1930s, Congressional subcommittee leadership supported the extension of entrance fees and in the 1950s pressed for increased fee revenue. In the 1970s and 1980s the subcommittee was led by anti-fee Representatives. The executive branch has consistently favored fees as a method to

counterbalance appropriations. Generally, political parties have not aligned in bipartisan roles over this issue.

National Park Service current status

The U.S. federal government appropriates over US\$2 billion annually to the National Park Service (Table 4). Of that, roughly US\$1.5 billion (67 %) is appropriated for park operations (National Park Service 2000b). In 2000, NPS received over 288 million visitor (National Park Service 2000d). Some parks still do not charge fees and at those that do, park managers do not always receive the direct benefits of the revenues because they are directed to the Treasury. Additionally, the Land and Water Conservation Act of 1965 capped fees at US\$5 per vehicle and US\$3 per person, although visitors are still required to pay higher visitor use fees for some facilities (National Park Service 1998). Total fee revenues for fiscal years 1998 and 1999 are presented in Table 5 and Figure 2.

TABLE 4. NPS GOVERNMENTAL APPROPRIATIONS, FISCAL YEAR 2000 (US\$000).

Appropriation	Enacted amount
Operation of the National Park System	1,363,764
National recreation and preservation	53,399
Historic Preservation Fund	74,793
Construction and major maintenance	226,165
Land acquisition and state assistance	120,700
Recreation Fee Permanent Appropriations*	156,471
Other permanent appropriations	31,626
Miscellaneous Trust Funds	14,608
TOTAL NPS BUDGET	2,041,526

Source: (National Park Service 2000d)

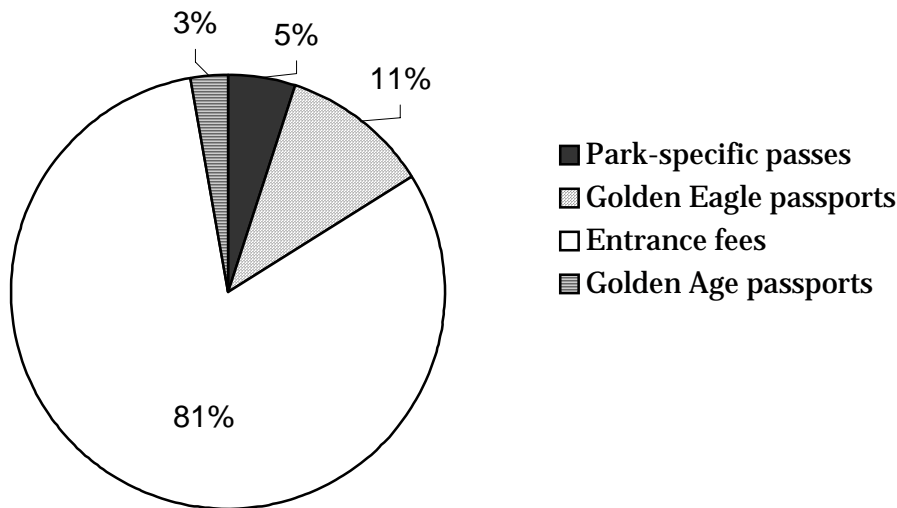
* these appropriations are derived from visitor use fee revenues; park-generated revenues that do not go into this fund are made available for appropriation the following fiscal year through the Operation of the National Park System appropriation account.

TABLE 5. TOTAL FEES COLLECTED BY THE NATIONAL PARK SERVICE, 1998-1999, (US\$).

Fee category	FY 1998	FY 1999
Park-specific passes	5,006,213.29	4,770,425.14
Golden Eagle passports	9,877,177.56	10,533,961.22
Entrance fees	77,218,909.32	76,842,367.82
Golden Age passports	2,527,634.27	2,534,841.70
Non-federal Golden Eagle passports	0.00	250.00
Total entrance fees	94,629,934.44	94,681,845.88
Recreation permits	872,585.76	991,084.02
Other recreation visitor use fees	8,360,673.35	8,777,991.30
Campground fees	12,154,003.72	10,984,789.77
Commercial vehicle tour fees	14,608,445.87	17,083,809.44
Commercial aircraft tour fees	1,198,541.25	1,909,968.10
Boat use fees	1,252,035.41	1,280,018.05
Interpretive activities fees	292,681.86	326,675.75
Backcountry fees	1,311,855.64	1,321,094.71
Contractor campground sales	6,675,744.38	8,172,414.70
Contractor tour sales	2,184,967.70	2,201,319.08
Deed-restricted park fee income	0.00	1,398,770.79
Total visitor use fees	48,911,534.94	54,447,935.71
TOTAL FEES COLLECTED	143,541,409.38	149,129,781.59

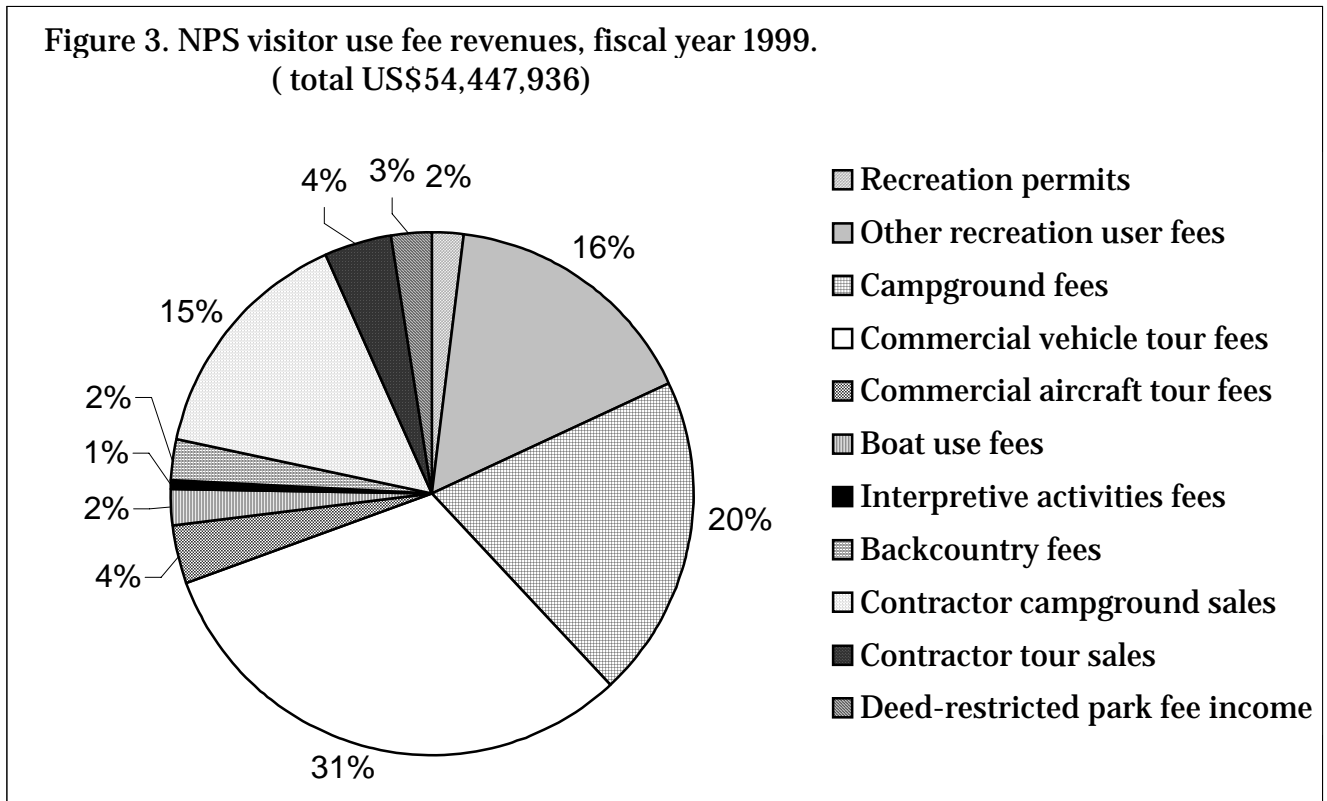
Source: (National Park Service 1999)

Figure 2. NPS entrance fee revenues, fiscal year 1999.
(total US\$94,681,846)



Source: (National Park Service 1999)

Visitor use fee revenues for fiscal year 1999 are presented in Figure 3. Fees are not charged for cycling, backpackers and other activities. One report estimated that an additional US\$123 million could have been earned in 1993 if these types of fees had been in place (Leal and Fretwell 1997). Parks that do charge visitor use fees often only do so half-heartedly because they have no incentive to increase revenues when they are all sent directly to the Treasury (O'Toole 1999b). Concession fees also go back to the Treasury; the parks receive only one to three percent of the gross revenues and often the remainder of the payment is made in in-kind services (O'Toole 1999b). Additionally, Congress gives free entry to those under age 16 and over 65 and the Golden Eagle pass, currently a US\$50 annual pass, allows entry into all parks for a minimal charge (O'Toole 1999b).



Source: (National Park Service 1999)

A new program implemented in 2000 is the Passport Program. This program will sell annual National Park Passports for US\$50. The passport features an annual collectible stamp whose design is chosen by competition (National Park Service 2000d). Net proceeds from sales of passports will be deposited in an account and used for high priority visitor service and resource management projects throughout the park system. Additionally, private vendors will be allowed to sell passports and receive a commission (National Park Service 2000d).

Since 1979, the number of visitors to national parks has risen from 205 to 288 million visitors and sixty new NPS units have been created, yet the NPS budget has not kept pace with the expansion (National Parks and Conservation Association 2000). NPS is currently coping with a maintenance backlog of US\$3.5 billion (Wilkinson 2000a). Some innovative methods to generate revenue have been developed recently. For example, Yellowstone National Park made an agreement with Diversa Corporation to share scientific data and royalties from the company's bioprospecting in the park's geothermal pools. Diversa will pay NPS US\$100,000 over five years

and 0.5-10 percent in royalties for any commercial sales of pharmaceuticals it produces. Any revenue gained would be used for research and conservation in Yellowstone. This agreement was upheld by federal courts and sets a precedent for other national parks (National Parks Magazine 2000). Some of the revenues and total revenues collected and reported by the National Park Service in 1999 are shown in Table 6, with estimations of receipts for 2000 and 2001. Another innovative program, the Recreational Fee Demonstration Program began in 1995 and has been remarkably successful.

TABLE 6. RECEIPTS COLLECTED BY NATIONAL PARK SERVICE, (US\$000).

	1999	2000 ¹	2001 ¹
To Special Fund Receipt Accounts:			
Recreational Fee Demonstration Program	141,355	144,400	148,400
Fee Collection Support	1,000	600	600
NPS Passport Program	0	8,000	12,000
Recreation entrance and visitor use fees	6,902	3,400	3,400
Park concessions franchise fees	14,538	15,000	16,000
Rental payments, Park Buildings Lease and Maintenance Fund	0	1,000	2,000
Rent and charges for quarters	14,840	15,151	15,454
Filming and photography special use fee program (proposed legislation)	0	0	2,500
Concessions Improvement Accounts ²	19,125	20,000	22,000
Donations to NPS	14,526	14,600	14,600
To the General Fund of the U.S. Treasury	63	15	15
TOTAL REPORTED BY NPS	215,316	226,120	240,922

Source: (National Park Service 2000d)

¹ estimate

² for explanation, see below

Recreational Fee Demonstration Program

The Recreational Fee Demonstration Program (RFDP) was created by Congress to allow NPS deal with financial problems resulting from increased visitation, increased operating costs and infrastructure maintenance backlogs (National Park Service 1998). The RFDP was established under the 1996 Omnibus Appropriations Bill (National Parks and Conservation Association 2000). It allows the Department of the Interior and the Department of Agriculture to retain all of the monies generated through the program, 80 percent of which are retained at the site of collection (National Park Service 1997). This program has allowed the agencies to test new fees and collection strategies at up to 100 units per agency (National Park Service 1998). NPS has 100 demonstration projects, twenty of which are charging fees for the first time (National Park Service 1998). The program is remarkable because it allows the park to keep 80 percent of the revenue generated in the park in which it was earned; the remaining 20 percent is distributed nationwide to all parks on the basis of need (National Parks and Conservation Association 2000). Parks are using the fees to take care of maintenance backlogs, improve visitor services, and enhance resource management (National Park Service 2000b). NPS retains 15 percent of the revenues collected from parks that are not participating in the RFDP. In 2000, recreation fee revenues from non-RFDP parks are estimated at US\$4 million, with US\$600,000 of that reverting directly to NSP (National Park Service 2000d). The remaining 85 percent reverts directly to the Treasury. It is proposed that by 2002 the RFDP may become permanent and extend to all parks in the system.

Under the Recreational Fee Demonstration Program, NPS is testing innovative ways to collect fees such as automated teller machines at park entrances and in towns near parks, allowing visitors to purchase entrance passes in advance (Milstein 1999). Fees have been instituted for

backcountry use, interpretive programs and high season rates have been implemented (National Park Service 2000d). The General Accounting Office found that the program has doubled fee revenue since 1996; revenues from higher fees increased Grand Teton's income by 50 percent above its 1998 operating budget and added 25 percent to Yellowstone's budget of US\$22.4 million (Milstein 1999). During the first year of the RFDP the participating agencies collected roughly US\$1.4 million in revenues, an increase of 61 percent from the previous year (National Park Service 1997). In 1995, park admission fees accounted for US\$51 million and visitor use fees added US\$29 million (Table 7). In 1997, under the RFDP an additional US\$45.1 million was generated (National Park Service 1998). In 2000, NPS estimates fee receipts will be close to US\$144.4 million and 80 percent of these funds are available to NPS without further appropriation (National Park Service 2000d).

TABLE 7. REVENUES GENERATED BEFORE AND AFTER THE INSTITUTION OF THE U.S. RFDP, (US\$).

Year	Admission fees	Visitor use fees
1995	51,000,000 (64%)	29,000,000 (36%)
1997	85,100,000 (70%)	37,000,000 (30%)

Source: (National Park Service 1998)

NPS was initially unsure of public reaction to the program, as it increased fees by 100 percent at some sites (e.g., the popular Golden Eagle Passport fee rose from US\$25 to US\$50). However, public support for the RFDP has been strong. In a 1997 NPS survey of 1600 individuals, 85 percent of visitors indicated that they were either satisfied with the fees they paid or thought they were too low. Additionally, visitation to RFDP sites was not significantly affected by the new fees (National Park Service 1997). Ninety-three percent of respondents indicated that the fees would not affect their future plans to visit the parks (National Park Service 1998). The program has had positive results including numerous innovations in fee collection. Park employees have increased incentive to work with visitors on revenue generation, but NPS noted that it is imperative to keep fee programs flexible and allow them to address specific needs of individual parks (National Park Service 1997).

One disadvantage of the RFDP is that participating parks may focus on projects to please visitors rather than to fund conservation or maintenance activities. For instance, Rocky Mountain NP, which generated US\$5 million in fee demonstration money this year, has spent a substantial amount on high-visibility projects that catch public attention (Wilkinson 2000a). As is often the case in a bureaucracy, "Congress is attentive to funding requests for public-friendly projects but is less willing to confront eroding infrastructure and its problems" (Wilkinson 2000a).

Concessions

Many of the facilities and services offered in the national park system are provided by concessioners that rent facilities, pay franchise fees and have permits to operate within the park. When a concession contract is open, NPS does not hold competitive bidding for new concessioners. Rather, NPS issues a notice to seek and invite offers from interested parties in what is known as "competitive selection" (United States Congress 1999). The term of concession permits generally is limited to ten years, but can extend up to 20 years with approval of the NPS (United States Congress 1999). Concessioners are responsible for all maintenance and repairs of facilities and lands they lease from the park (National Park Service 1988a). Concessioners who use government-owned facilities are also required to pay a building-use fee (National Park Service 1988b). The work of a concessioner may be financially risky, for even if the concessioner goes into debt purchasing a concession, they are prohibited from raising their rates to visitors nor are they able to receive a waiver of franchise fees (National Park Service 1988a). All rates the

concessioner charges to visitors must be approved by NPS and must be comparable to those in the private sector (National Park Service 1988b).

Concessioners must pay NPS franchise fees (determined by the agency). These fees are based on “reasonable opportunity for net profit in relation to capital invested and the obligations of the contract” (United States Congress 1999). The agency states that revenue generation by the agency is not as important as the appropriate preservation and protection of park areas and the quality of services to the visitor at reasonable rates (United States Congress 1999). Additionally, parks that have more than one concessioner providing the same services (e.g., river guide companies) must charge equivalent franchise fees for all concessioners (United States Congress 1999). Franchise fees are deposited into a Treasury account, with 20 percent available to NPS without further appropriation by the government. The remaining 80 percent is put in subaccounts set up for each individual park and the funds are available for the park in which the funds were earned (United States Congress 1999).

Concessioners that construct structures or other facilities (capital improvements) on park property using their own funds are compensated for their investments when concession contracts expire. The amount compensated depends on the initial value of the capital improvement or new structure, adjusted according to the increase or decrease in the Consumer Price Index and less the amount of depreciation of the structure (i.e., the condition and serviceability in comparison with a new unit of the same kind) (United States Congress 1999). If a new concessioner must pay a prior concessioner for prior capital improvements made, this amount is based on the value of the structure at the time of the exchange.

Franchise fees are generally low and are either in the form a percentage of the concessioner's annual gross receipts or for those under concession permits fees may either be a flat dollar amount or a percentage (National Park Service 1988b). Since 1999, when NPS implemented the Concessions Management Improvement Act of 1998, parks have been encouraged to increase returns from concessions contracts through retention of all existing and new franchise fees in a new account (see Table 5) (National Park Service 2000d). The monies in these accounts are to be used for park improvements and concessions-related activities in the parks (National Park Service 2000d). Funds are deposited in private bank accounts and are available to the concessioner, with park approval, for required capital improvements (National Park Service 2000d).

Summary

- Traditionally the U.S. NPS has been funded through tax-based governmental appropriations although park founders aimed for self-supporting national parks. In the last few decades, park budgets have decreased while park visitation has increased.
- Historically, all park-generated revenues have been paid into a central Treasury account with park funds appropriated annually. This policy has led to decreased incentive and commitment by park personnel to collect fees consistently.
- The Recreational Fee Demonstration Program was initiated in 1996. This program instituted and increased visitor use fees at 100 park units. Parks retain 80 percent of the revenues at the site of collection and the remaining 20 percent goes to other parks in the system. This program has led to innovations and increased incentives in fee collection by park managers and may be extended to all parks in 2002.

- NPS concessioners generally pay very modest permit and leasing fees. These are usually flat fees or a percentage of gross receipts. Concession terms are limited to 10-20 years and there is a "competitive selection" process for awarding of contracts. Since 1999, the park agency has retained all existing and new franchise fees in accounts whose monies are to be used for park improvements and concessions-related activities in the parks

III. U.S. STATE PARK SYSTEMS

Like national parks, there are many managed areas for which state park systems are responsible. These have different names in each state but can be classified generally as: recreation areas, historic areas, environmental education areas, scientific areas, state forests, or state fish and wildlife areas.. Only parks and natural areas exist solely to protect and manage natural habitats and allow only non-consumptive uses (McLean 1998). State parks exist for the preservation of natural or cultural resources and offer outdoor recreation activities. In state natural areas, importance is placed on protection, management and interpretation of natural resources (McLean 1998). Although state park agencies manage a number of different public areas, "their primary business is state parks" (McLean 1998). Table 8 presents the amount of land dedicated to each type of state-managed area and shows that the greatest acreage is in state parks.

TABLE 8. SIZE AND NUMBER OF U.S. STATE ADMINISTERED AREAS, 1999.

Area	Number	Number operating	Size (hectares)
State parks	1,869	1,812	3,304,978
Recreation areas	796	748	564,790
Natural areas	601	445	505,816
Historic areas	477	439	33,023
Environmental Education area	24	17	5,845
Scientific areas	96	96	4,678
Forests	546	146	5,808,541
Other	489	442	164,521
Fish and Wildlife areas	366	366	73,769
Miscellaneous areas	153	97	21,052
TOTAL	5,417*	4,608*	5,259,329*

Source: (National Association of State Park Directors 2000)

* not same as original

In 2000, almost three times as many individuals visited state parks as did national parks. The proximity of protected areas to their homes creates an attractive recreational destination for many residents (McLean 1998). In Table 9, the total numbers of fee and non-fee visitors are presented. Day use exceeds overnight use in state parks, with 84 percent of visitors making day trips only. Fee use areas accounted for 41 percent of the use in state park areas (Table 9).

TABLE 9. VISITATION FOR U.S. STATE PARKS SYSTEMS, 1999 (INCLUDES ALL TYPES).

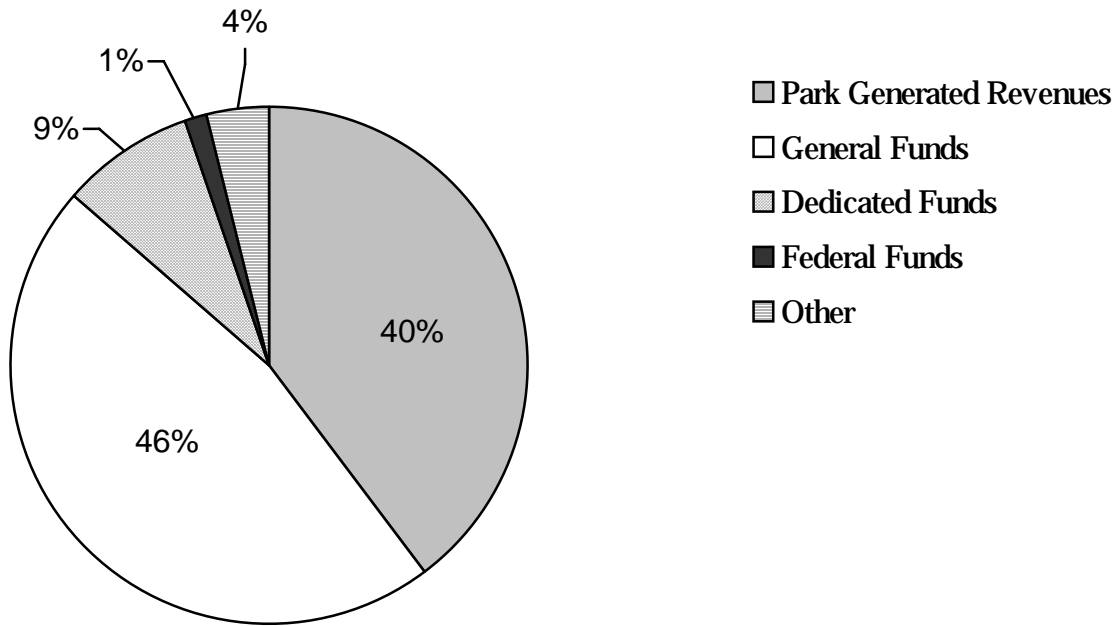
Area	Day	Overnight	Total
Fee	263,517,875 (84%)	50,449,370 (16%)	313,967,245 (41%)
Non-fee	441,461,694 (97%)	11,413,285 (3%)	452,874,979 (59%)
TOTAL	704,979,569 (92%)	61,862,655 (8%)	766,842,224

Source: (National Association of State Park Directors 2000)

State park funding

Funding for state parks comes from varied sources and depends on the state. Appropriated revenues are monies generated by state park operations (McLean 1998). Operation expenditures are expenses for the operation and maintenance of state park systems. General funds come from the state. Dedicated funds are from earmarked sources and are committed to capital improvements (McLean 1998). Some states also receive federal funds. Figure 4 shows total funding for state park operational budgets

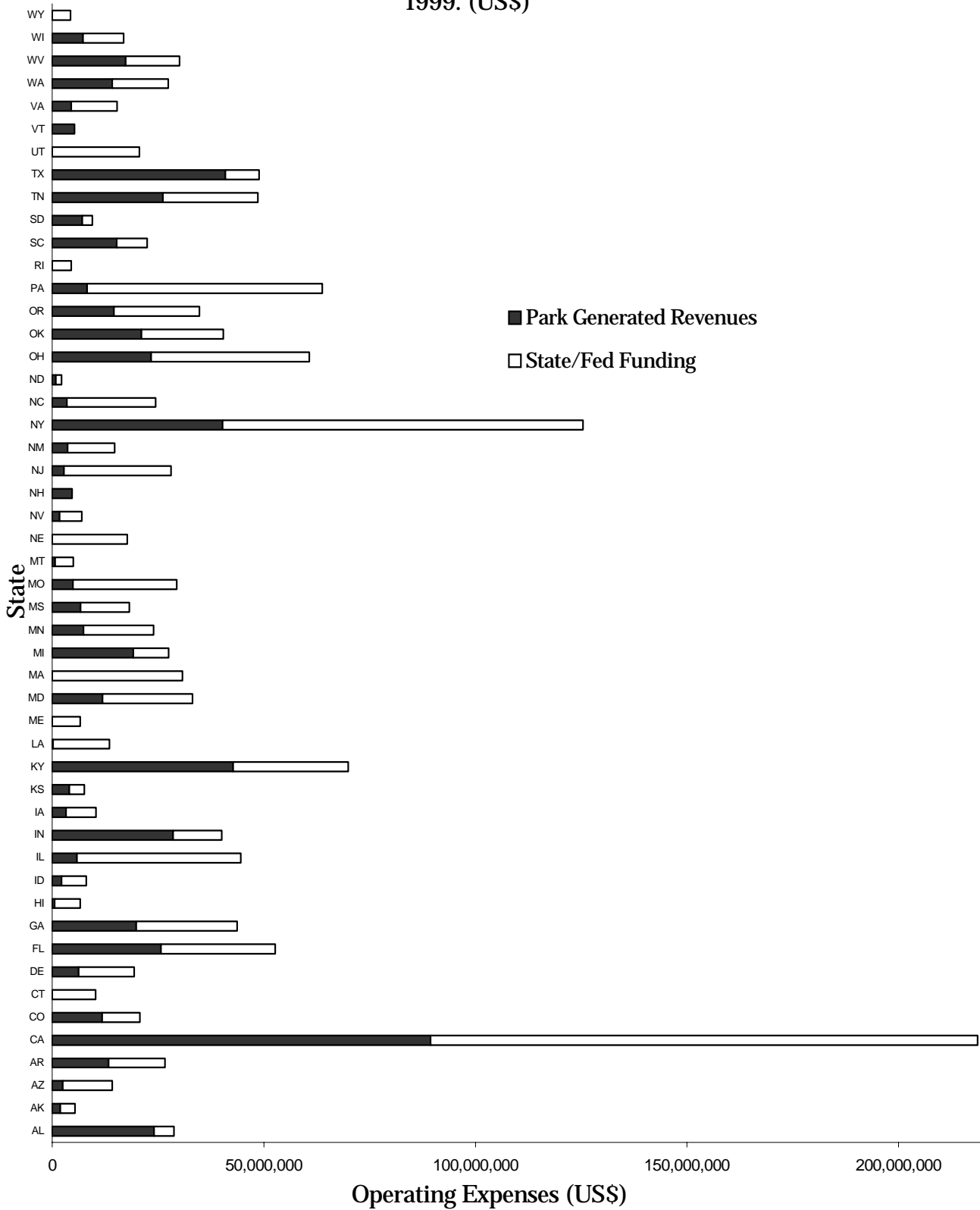
Figure 4. State park systems operating expenses funding sources
1999. (total US \$1,501,000,885)



Source: (National Association of State Park Directors 2000)

State parks, like national parks, have a difficult balance to maintain. They must preserve nature and accommodate an increasing public population simultaneously with decreasing funding (Leal and Fretwell 1996). For this reason, state parks tend to be in the worst financial shape among American natural resource agencies (O'Toole 1999b). Currently, only a few states are self-sufficient. Only 16 states cover 50 percent of their operating budgets through park-generated revenues (National Association of State Park Directors 2000). The majority of the states rely on general or dedicated funds from the state treasury. Figure 5 presents the total operating expenditures of each state and the portion of those expenses covered by park-generated monies.

Figure 5. Contribution of park-generated revenues to operating expenses, 1999. (US\$)



Source: (National Association of State Park Directors 2000)

In the past decade, several states have implemented new revenue-generating strategies such as expanded visitor use fees, concessions contracts and corporate sponsorships while others continue to rely on taxes (Leal and Fretwell 1996). Some states are experimenting with projects that both attract visitors and reduce dependence on tax dollars. The Ohio park system has begun offering camping gear such as cookstoves, tents and cots for rent to its visitors in an effort to increase revenues (Ewing 1997). Despite increasing efforts towards self sustainability, only New Hampshire, Vermont, South Dakota, Alabama and Texas generated all or most of their operating expenditures in 1999 (National Association of State Park Directors 2000). The following section addresses four individual state systems, three of which are exceptional examples of self-sustainability.

Idaho

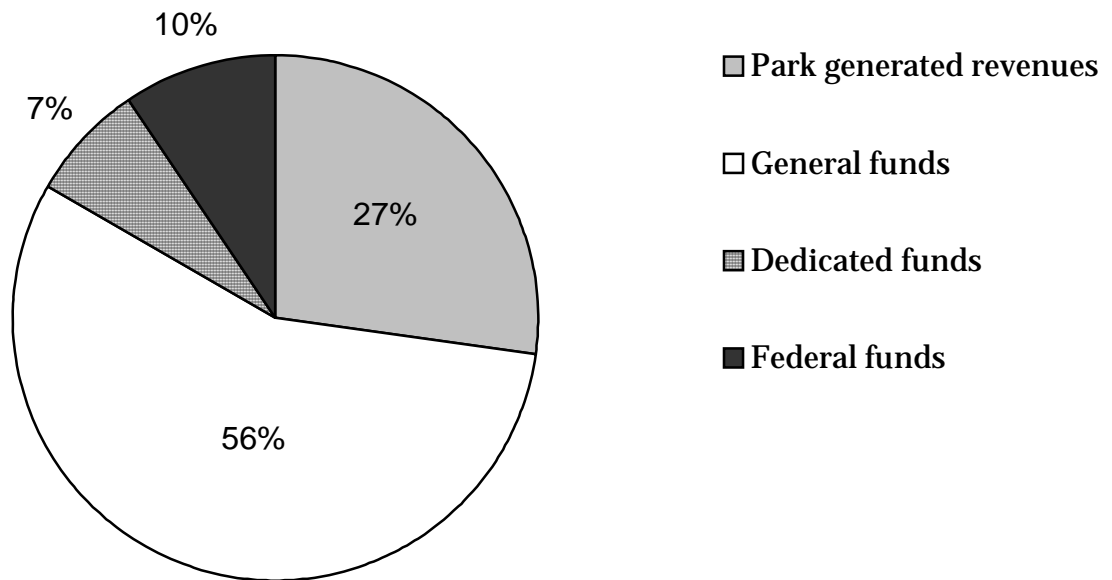
The Idaho state park system manages 27 recreation and natural areas totaling 17,422 hectares of estate and hosted over 2.3 million visitors in 1999 (Table 10) (National Association of State Park Directors 2000). Day visitors accounted for 87 percent of the total visitors in 1999. Idaho's state park operating budget exceeded US\$8 million in 1999 (National Association of State Park Directors 2000) (Figure 6). Park-generated revenue accounted for 27 percent (US\$2.19 million) of the state's operational budget, although the parks generated over US\$3 million in 1999 not all of these monies reverted directly to the park agency (National Association of State Park Directors 2000). All park receipts from camping, entrance fees and concessions go into a dedicated park fund (Leal and Fretwell 1996). Monies from this dedicated fund must then be appropriated by the state legislature back to the park system.

TABLE 10. VISITATION FOR IDAHO STATE PARKS, 1999.

Area	Day	Overnight	Total
Fee	1,960,676 (87%)	297,695 (13%)	2,258,371 (96%)
Non-fee	96,031	0	96,031 (4%)
TOTAL	2,056,707	297,695	2,354,402

Source: (National Association of State Park Directors 2000)

Figure 6. Sources of operational funds for Idaho state parks, 1999. (total US\$8,022,374)



Source: (National Association of State Park Directors 2000)

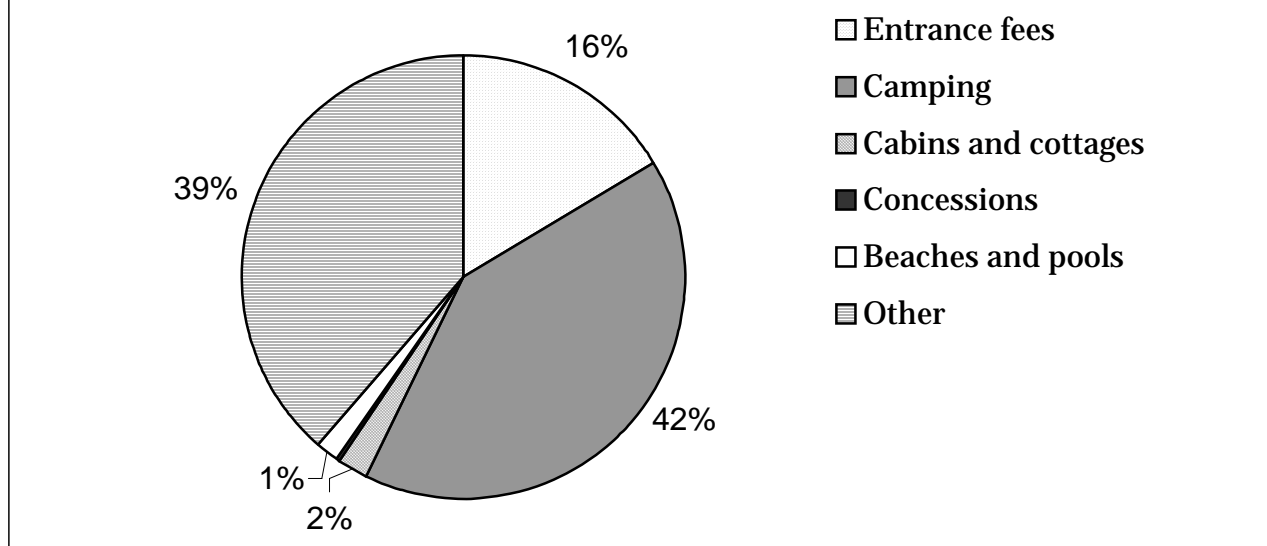
Until 1980 Idaho did not charge entrance fees to its parks, but did charge US\$3 per night for primitive campsites (Leal and Fretwell 1996). In the late 1980s the park began charging a US\$2 per vehicle entrance charge and camping fees were raised to US\$7 per night for primitive sites. Currently, pedestrians can enter the park for free (Leal and Fretwell 1996). Idaho has instituted a state-wide, centralized, toll-free campsite reservation system. This system charges a US\$5 reservation fee and serves to keep campers within the park system by providing alternative camping areas if the caller's first choice is unavailable (Leal and Fretwell 1996). In 1999, Idaho parks generated US\$3.2 million (Figure 7). Over a third of these revenues were generated through camping fees (National Association of State Park Directors 2000). The types of visitor use fees charged at Idaho state parks are shown in Table 11.

TABLE 11. IDAHO STATE PARK VISITOR USE FEES, 1999.

Type of fee	Fee (US\$)
Entrance adult resident and nonresident	0.00
Passenger vehicles resident and nonresident	2-3.00
Group bus (resident and nonresident)	20.00
Annual pass (resident and nonresident)	35.00
Entrance fee, senior citizen	0.00
Vessel launchings	3.00
Overnight boat moorage	5.00
Cabins, teepees and yurts	30-80.00
Reservation fee	6.00
Campsite, 3 hook-up	18-22.00
Campsite, 2 hook-up	16.00
Campsite, 1 hook-up	12.00
Improved campsite, no hook-up	7-12.00
Primitive campsite, no hook-up	7.00

Source: (National Association of State Park Directors 2000)

Figure 7. Idaho state park-generated revenue, 1999.
(total US\$3,182,100)



Source: (National Association of State Park Directors 2000)

Although all park-generated revenue enters directly into the state parks dedicated fund, the agency does have in-park "enterprise operations" that generate revenues that the operation retains (Leal and Fretwell 1996). Marinas that sell supplies and fuel and a recreation facility that rents out camping equipment and sells groceries are examples of enterprise operations. Any profits earned by these enterprises are carried over from year to year and all operations are funded from revenues (Leal and Fretwell 1996).

Texas

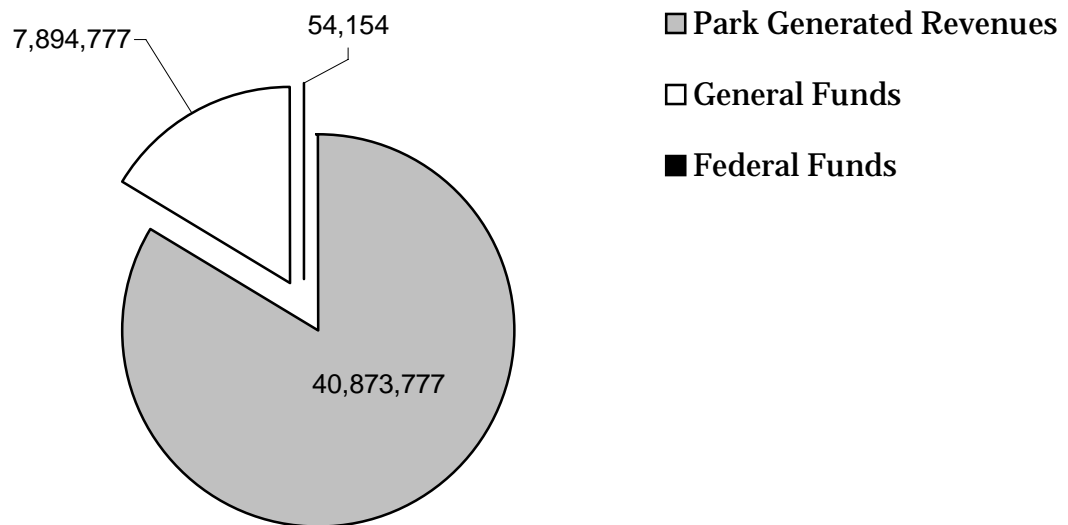
The Texas state park system is responsible for over 242,820 hectares of estate with over 168,760 hectares dedicated to natural area protection (National Association of State Park Directors 2000). The system maintains 67 recreation areas, 17 natural areas, 34 historic areas, and over 1,593 km of trails (National Association of State Park Directors 2000). In 1999, the state park system received over 21 million visitors (see Table 12) and had an operating budget of almost US\$49 million (National Association of State Park Directors 2000). In 1999, 8 percent of park visitors stayed over and 93 percent paid a fee to enter the parks (Table 12). Currently, the Texas state park system is nearly self-sufficient with almost 84 percent of its operating expenses covered by park-generated revenues (Figure 8).

TABLE 12. VISITATION FOR TEXAS STATE PARKS, 1999.

Area	Day	Overnight	Total
Fee	18,379,268	1,667,456	20,046,724 (93%)
Non-fee	1,398,956	0	1,398,956 (7%)
TOTAL	19,778,224 (92%)	1,667,456 (8%)	21,445,680

Source: (National Association of State Park Directors 2000)

Figure 8. Sources of operational funds for Texas state parks, 1999.
(US\$ 48,822,708 total)



Source: (National Association of State Park Directors 2000)

The Entrepreneurial Budgeting System

The move to self-sufficiency was a difficult decision made by the state legislature in 1991. The Texas Parks and Wildlife Department (TPWD) was instructed to move towards self-sufficiency and appropriations from general funds for parks operations, which at that point made up half of the operating budget, were eliminated in 1994 (Leal and Fretwell 1996). The funding reduction threatened to close a number of parks. Local community members came to the aid of the imperiled parks with a "partners in parks" program, which raised US\$1 million and closures

were avoided (Leal and Fretwell 1996). With financial independence looming, park officials created the entrepreneurial budgeting system (EBS). The EBS is an incentive-based financing system that encourages park managers to come up with resourceful ways to generate funds and reduce costs. Park managers enter into a performance agreement with TPWD officials and pledge to keep spending under a certain level and raise revenue equal to the previous year's revenue plus a small increase of 0.5-3 percent (Leal and Fretwell 1996).

If a park manager spends less than the designated amount, TWPD officials reward the manager by returning all cost-savings to the park's budget the following year. This is in contrast to the use it or lose it principle followed by most bureaucracies which reduces incentive to save money (Leal and Fretwell 1996). Additionally if the manager exceeds the revenue target, TWPD officials return up to 35 percent of the surplus to the following year's budget. The manager is then free to spend the money for park improvements. Of the remaining surplus, 25 percent goes to a fund that helps other parks start their own EBS initiatives. EBS also provides a safety net for protected areas that will never be large revenue generators, such as parks that are ecologically valuable but do not attract many visitors, with the remaining 40 percent going to parks that cannot be self-supporting (Leal and Fretwell 1996). EBS is a unique program in that it operates in a way that is not generally the norm in the public sector. Despite initial hesitation, park managers are accepting the risks and pursuing the advantages offered through this program. EBS permits park managers to be creative and offer unique and attractive programs to park visitors (Leal and Fretwell 1996).

Under the EBS program, Texas state parks have developed an array of innovative revenue generators. For instance, increased revenues have been realized as a result of a centralized reservation system. Reservations can be made for day and overnight facilities and activities and require a deposit of one day's fees. Operators help campers find alternate camping locations if the park they initially choose is full. This keeps camping revenues from going outside the park system and has increased visitor utility (Leal and Fretwell 1996). The types of visitor use fees charged at Texas state parks, including an internet camping reservation charge of US\$3, are shown in Table 13. One problem with the EBS occurs when visitation drops unexpectedly (e.g., due to severe droughts). If insufficient revenues are earned, operational expenses and EBS payments cannot be covered. This could be remedied by setting aside funds from current income to pay parks the following year (Leal and Fretwell 1996). The EBS has been called a success. To date, not a single park closure has occurred and the system is funded almost entirely out of visitor use fees (O'Toole 1999b). Figure 9 shows the various sources of revenue generation for Texas state parks in 1999, which totaled over US\$26 million (National Association of State Park Directors 2000).

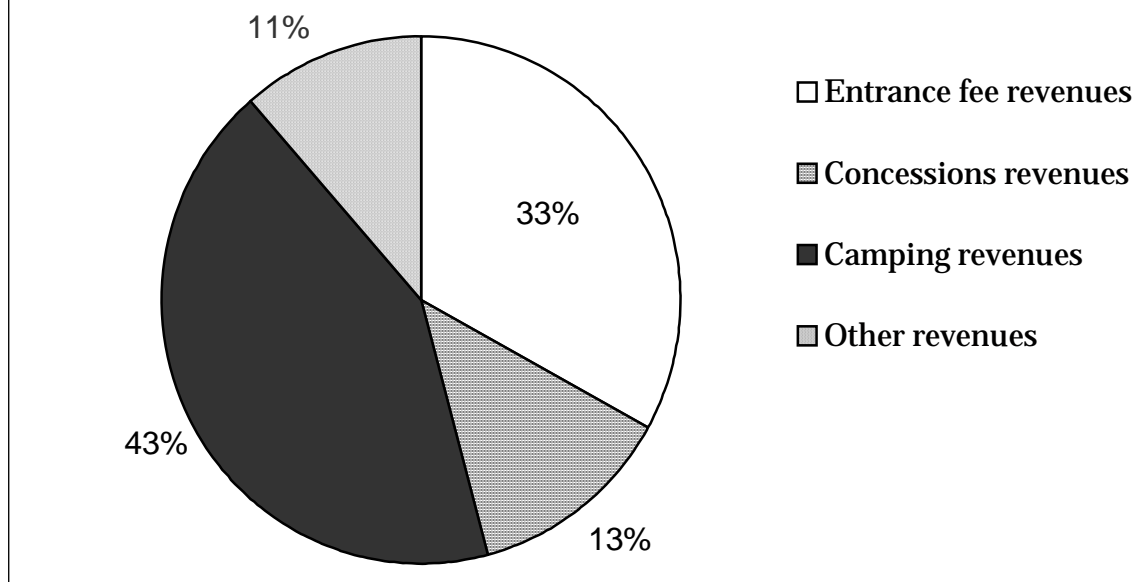
TABLE 13. TEXAS STATE PARK VISITOR USE FEES, 1999.

Type of fee	Fee (US\$)
Entrance adult resident	N/A
Entrance adult nonresident	N/A
Passenger vehicles variable resident	N/A
Entrance fee, senior citizens	N/A
Lodge rooms	35-85.00
Annual pass (resident and nonresident)	N/A
Reservation fee	3.00 *
Cabins and cottages	35-95.00
Campsite, 3 hook-up	10-25.00
Campsite, 2 hook-up	9-23.00
Campsite, 1 hook-up	5-18.00
Improved campsite, no hook-up	4-12.00
Primitive campsite, no hook-up	4-12.00

Source: (National Association of State Park Directors 2000)

* only internet reservations

Figure 9. Texas state park-generated revenue, 1999
(total US\$ 26,028,040)



Source: (National Association of State Park Directors 2000)

New Hampshire

The New Hampshire state park system is responsible for over 29,948 hectares of park estate, including 28 parks, 10 recreation areas, 15 natural areas, 12 historic areas, and 3 environmental education areas (National Association of State Park Directors 2000). Protected natural areas comprise almost 27,520 hectares of the system's holdings. New Hampshire saw over 4.3 million visitors in 1999 (see Table 14). Of these 4.3 million visitors, 94 percent made day visits only and 43 percent were charged a visitor use fee.

TABLE 14. VISITATION FOR NEW HAMPSHIRE STATE PARKS, 1999.

Area	Day	Overnight	Total
Fee	1,600,510	260,968	1,861,478 (43%)
Non-fee	2,500,000	0	2,500,000 (57%)
TOTAL	4,100,510 (94%)	260,968 (6%)	4,361,478

Source: (National Association of State Park Directors 2000)

New Hampshire parks funding

New Hampshire funds its operating budget solely with park-generated revenue. In 1999, its operating expenses totaled US\$4,719,702 and this was fully covered by the park system. The park system does not receive any other state or federal funds for its operations (National Association of State Park Directors 2000). Like Texas, the New Hampshire state legislature decided in 1991 that the park system should finance its operations through park-generated revenues (New Hampshire State Legislature 1991a). Until 1991, all park receipts were paid directly to the state treasury. The 1991 act established a park fund to receive park revenues in excess of budget expenses from fees, services, accommodations and other facilities (New Hampshire State Legislature 1991b). The fund is dedicated solely to the park system. Monies are continually appropriated to the division of parks for restoration and (New Hampshire State Legislature 1991b). Additionally, the fund is nonlapsing. The monies are carried over from year to year providing an incentive to maximize earnings (New Hampshire State Legislature 1991b).

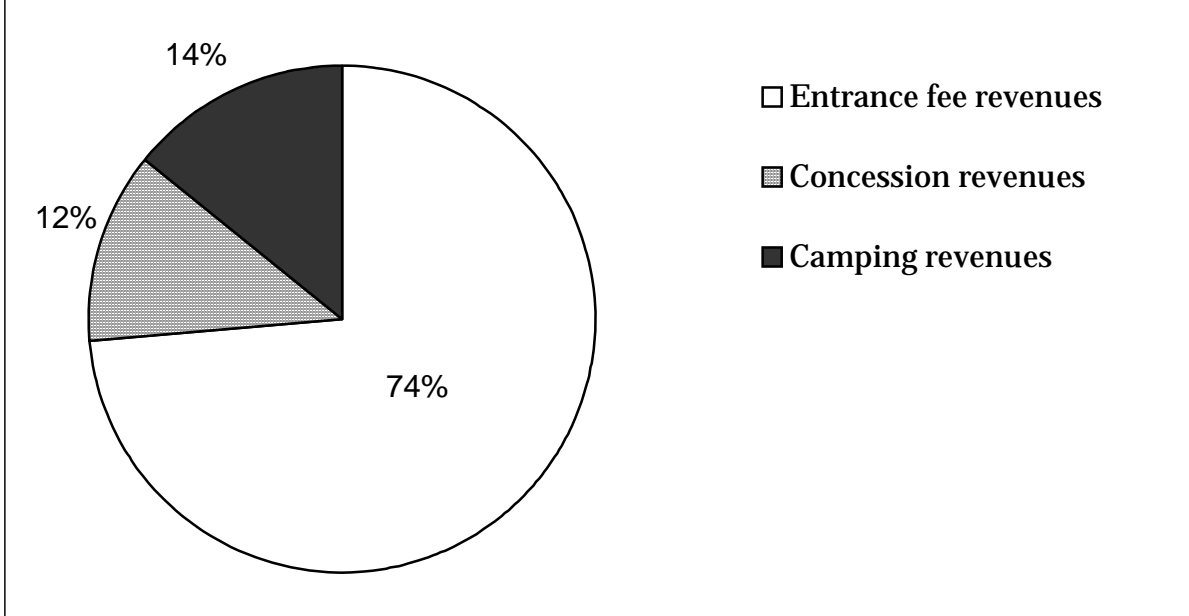
New Hampshire has been innovative in developing money-generating projects. For example, it was the first to institute differential pricing for campsites. Amenities offered at campsites and site popularity were taken into account when visitor use fee levels were determined. Table 15 lists visitor use and entrance fees for 1999. The legislation states that any facilities offered by the park system must charge visitor use fees comparable to the fees charged by private facilities (New Hampshire State Legislature 1991a). New Hampshire also implemented per-person entrance fees (Leal and Fretwell 1996) and eliminated garbage collection by giving trash bags to users and asking them to pack out their own trash (O'Toole 1999b). An extensive donor system exists and in 1992 volunteers donated over US\$28 million in labor and funds. Partnerships with corporations have also been instrumental in revenue generation. PepsiCo won a partnership in a competitive bidding process where it has exclusive rights to sell its products in all state parks (Leal and Fretwell 1996). Figure 10 shows the sources of park-generated revenue. In 1999 the park system generated almost US\$10 million (National Association of State Park Directors 2000).

TABLE 15. NEW HAMPSHIRE STATE PARK VISITOR USE FEES, 1999.

Type of fee	Fee (US\$)
Entrance adult resident	2.50
Entrance adult nonresident	2.50
Passenger vehicles variable resident	5-8.00
Passenger vehicles variable nonresident	5-8.00
Adult individual/ Bus (resident and nonresident)	2.00
Annual pass (resident and nonresident)	35.00
Entrance fee, senior citizen	N/A
Reservation fee	N/A
Campsite, 3 hook-up	24-35.00
Campsite, 2 hook-up	22-24.00
Campsite, 1 hook-up	20.00
Improved campsite, no hook-up	12-22.00
Primitive campsite, no hook-up	12-15.00

Source: (National Association of State Park Directors 2000)

Figure 10. New Hampshire state park-generated revenue, 1999.
(total US\$ 9,845,258)



Source: (National Association of State Park Directors 2000)

Vermont

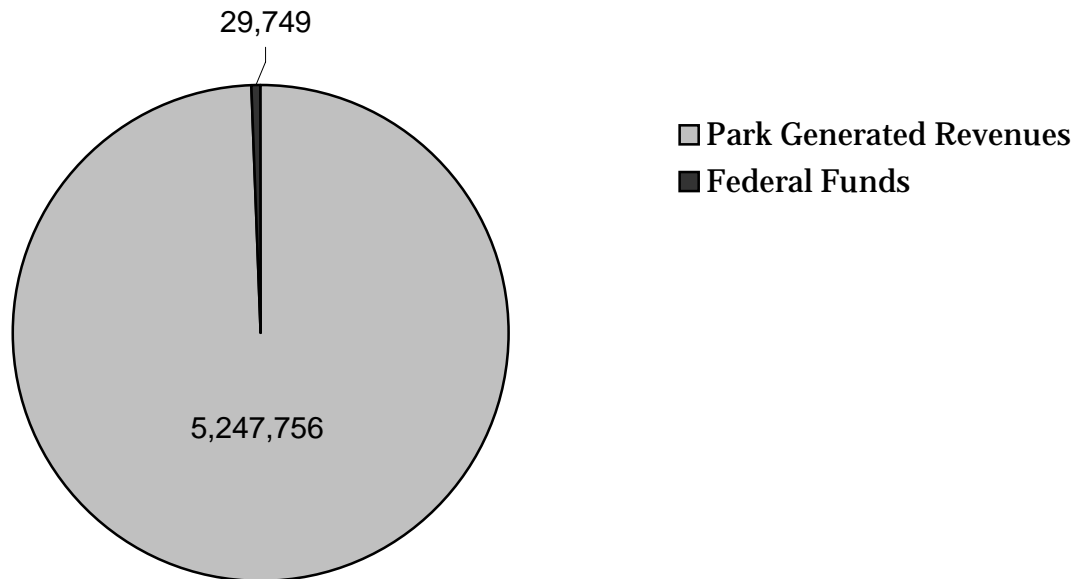
Over 800,000 individuals visited Vermont's 51 state parks in 1999 (Table 16) (National Association of State Park Directors 2000). Every visitor to Vermont's state parks paid a visitor use fee in 1999 and 48 percent stayed overnight in the parks. The Vermont Department of Forests, Parks and Recreation manages 39 operating parks, 10 recreation areas, 3 natural areas (presently not in operation), and one environmental education area, with park system acreage totaling 33,840 hectares (National Association of State Park Directors 2000). Vermont's 1999 operating budget totaled US\$5,277,505 with park-generated revenues covering all but US\$30,000 (see Figure 11) (National Association of State Park Directors 2000).

TABLE 16. VISITATION FOR VERMONT STATE PARKS, 1999.

Area	Day	Overnight	Total
Fee	433,841	400,509	834,350 (100%)
Non-fee	0	0	0
TOTAL	433,841 (52%)	400,509 (48%)	834,350

Source: (National Association of State Park Directors 2000)

Figure 11. Sources of operational funds for Vermont state parks, 1999.
(total US\$ 5,277,505)

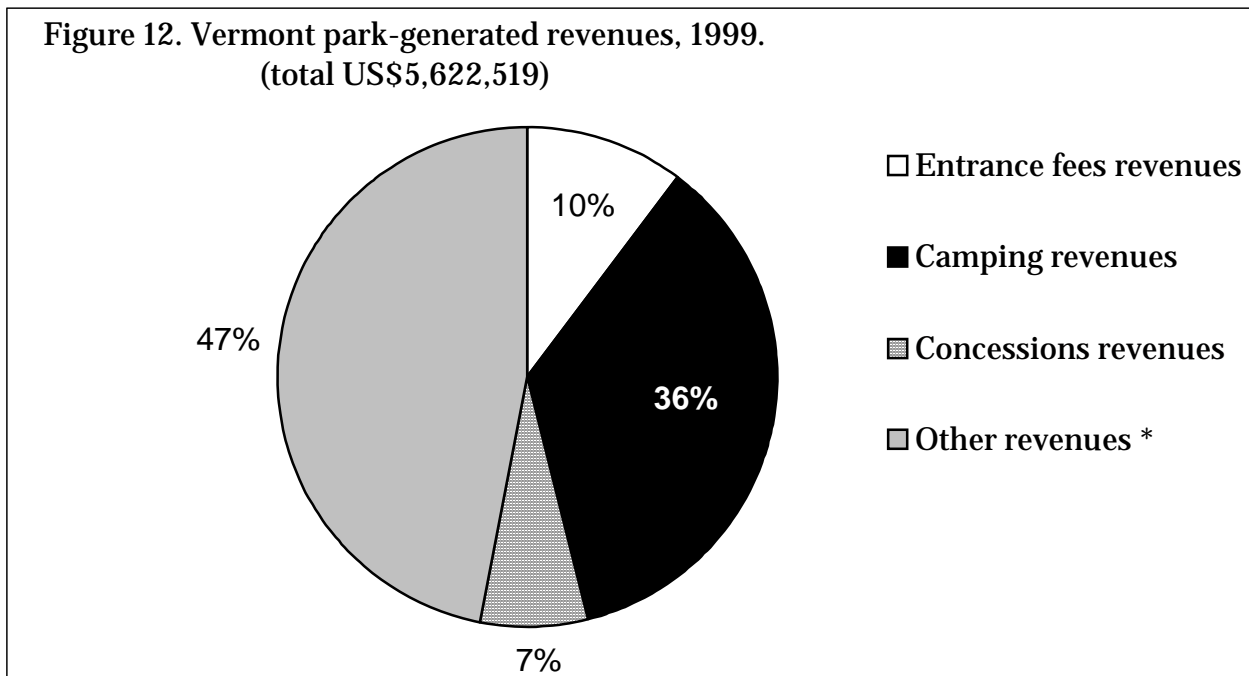


Source: (National Association of State Park Directors 2000)

Vermont parks funding

Since 1993, Vermont's park system has been funded from visitor use fees and revenues from state-owned facilities (i.e., ski facilities) (Leal and Fretwell 1996). In 1980, 40 percent of park operations were funded by general appropriations but increased fees, downsizing, and marketing have helped the parks become self-sufficient (Leal and Fretwell 1996). The state also

relies on state-owned ski areas which yield 45-50 percent of the operating funds for the parks. Park entrance fees cover the remaining 50 percent (Leal and Fretwell 1996). The sources of Vermont's park-generated revenues are presented in Figure 12. The types of visitor use fees charged at Vermont state parks are presented in Table 17. All revenues are placed in a state treasury fund known as the State Forest Parks Revolving Fund (Vermont State Legislature 1999). Funds generated from fees, leases, licenses, concessions, and rentals are deposited into this special revolving fund. Balances are carried over from year to year and remain in the fund (Vermont State Legislature 1999). The fund is especially important when revenues are low and monies are needed to cover operational expenses (Leal and Fretwell 1996).



Source: (National Association of State Park Directors 2000)

* includes skiing revenues

TABLE 17. VERMONT STATE PARK VISITOR USE FEES, 1999.

Type of fee	Fee (US\$)
Entrance adult resident and nonresident	2.00
Passenger vehicle fee	N/A
Adult individual by bus (resident and nonresident)	2.00
Annual pass (resident and nonresident)	75.00
Entrance fee senior citizen	N/A
Reservation fee	5.00
Lodge rooms	18.00
Cabins and cottages	34-61.00
Improved campsite, no hook-up	11-17.00
Primitive campsite, no hook-up	10-12.00

Source: (National Association of State Park Directors 2000)

Summary

- U.S. state park systems vary greatly in their operations, policies, and funding mechanisms. Most are funded largely through tax-based state government appropriations. State parks

tend to be in the worst financial shape among American natural resource agencies and currently only a few states park systems are self-sufficient.

- The Idaho state park system is an average U.S. state park service. Idaho charges low fees for the entry and use of its parks and park-generated revenue accounted for only 27 percent of the state's 1999 operational budget. All park receipts from camping, entrance fees and concessions go into a dedicated park fund and must be appropriated back to the agency by the state legislature.
- The Texas state park system is nearly self-sufficient with almost 84 percent of its operating expenses covered by park-generated revenues. The Entrepreneurial Budgeting System has led to increased incentives and resourcefulness in fee collection. Parks exceeding revenue targets retain a portion of the surplus and all of the surplus remains in the park system.
- The New Hampshire state legislature forced the state park system to become self-sufficient in 1991. Prior to 1991 all revenues were paid into a state treasury account. After 1991, all revenues in excess of budget expenses were received by a non-lapsing park fund dedicated solely to the park system. New Hampshire has also instituted unique fund-raising policies, including partnerships with major corporations and differential pricing schemes.
- The Vermont state park system retains park-generated revenues. Revenues generated from fees, leases, licenses, concessions and rentals are placed in the State Forest Parks Revolving Fund and balances are carried over from year to year and remain in the fund.

IV. CANADIAN PARK SYSTEMS

Canada's first national park was established in 1885 when the federal government formally set aside 26 km² surrounding the healing hot springs around what is now Banff, Alberta. The National Parks Act was signed in 1930 at a time when there were 14 national parks (Minister of Public Works and Government Services 1998). Since the 1960s, 20 national parks have been established in Canada although not under any systematic method. In 1988 Parks Canada introduced an ecosystem management approach to park creation and management. This approach is based on the need to maintain ecological integrity within the parks. Parks Canada has tried to meet the goal of creating a park system that has representative areas of each of Canada's 39 natural regions by 2000 (Minister of Public Works and Government Services 1998). Currently, Parks Canada is responsible for Canada's national parks, historic sites, marine conservation areas and Canadian heritage rivers. Canada's 38 national parks and park reserves total 222,282.5 km², with an additional 73,552 km² withdrawn for future park sites (Minister of Public Works and Government Services 1998). Parks Canada's three national marine conservation areas total over 4,500 km² (Minister of Public Works and Government Services 1998). Nine Canadian national parks are designated World Heritage Sites (Minister of Public Works and Government Services 1998). In the fiscal year 1999-2000, visitation to Canadian national parks and national historic sites was 26.6 million, a 3.8 percent increase over 1998-1999 (Wade 2000). Of this 26.6 million, over 16 million individuals visited national parks (Table 18) (Parks Canada 2000a). The Canadian government appropriated almost CDS389 million to Parks Canada in 1999-00 (Phillips 2000).

TABLE 18. PARKS CANADA NATIONAL PARKS ATTENDANCE, 1999-00.

Province	Visits
Newfoundland and Labrador	363,764
Prince Edward Island	954,873
Nova Scotia	492,690
New Brunswick	505,552
Quebec	858,209
Ontario	1,174,377
Manitoba	314,061
Saskatchewan	228,416
Alberta	7,242,503
British Columbia	4,054,459
Yukon	59,623
Northwest Territories	11,371
Nunavut	659
TOTAL	16,260,557

Source: (Parks Canada 2000a)

In its national parks, Parks Canada allows uses that promote the purposes and objectives of the parks, and all activities must be considerate of the ecosystem's integrity and with a minimum of facilities built (Parks Canada 1999). Within the national parks commercial exploration, extraction, and development are terminated before a park becomes formally established, although some traditional uses of natural resources such as hunting may be permitted (Parks Canada 1999). Unlike NPS, Parks Canada has allowed townsites to be formed within its national

parks. This presents an additional management issue described below. Additionally, each of Canada's 10 provinces and three territories has its own park agency and varying park policies.

Canadian protected area visitor use fees

Like the United States' national parks, visitation to Canadian national and provincial parks has been increasing over time (see Table 19). Simultaneously, government appropriations to these agencies have decreased over time. Visitor use fees have been in place in Canada's parks for decades (Van Sickle and Eagles 1998). Parks Canada and provincial park agencies have consulted with park users, business partners and members of local communities regarding visitor use fees and other charges. This consultation process ensures that those paying the fees are charged a fair and appropriate amount (Minister of Public Works and Government Services 1998). Fees are charged on a per person basis to all park visitors. Fees are a nominal charge for the use of basic services provided to all visitors. Services include access to designated areas, trails, beaches, picnic areas, washrooms, access to information about the park, and personal safety services (Minister of Public Works and Government Services 1998).

TABLE 19. PARKS CANADA ATTENDANCE, 1995-95 TO 1999-00.

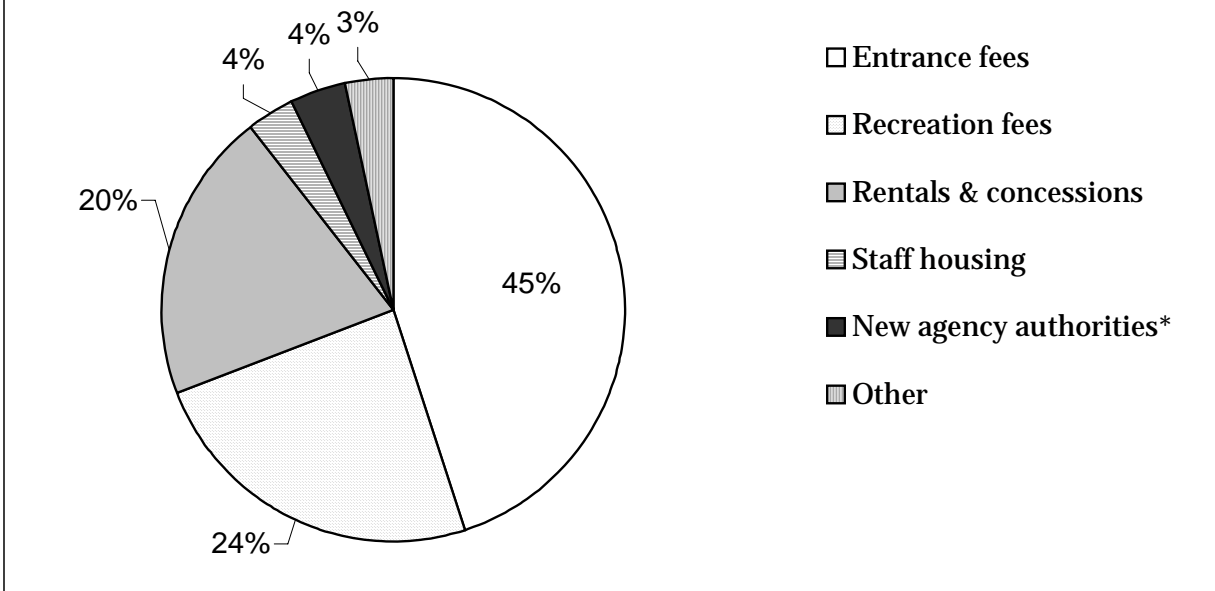
Year	Total Visits
1995-96	15,385,828
1996-97	14,684,145
1997-98	14,904,140
1998-99	15,696,158
1999-00	16,260,557

Source: (Parks Canada 2000a)

In February 1994, Parks Canada implemented a new visitor use fee system in its national parks, the guiding principle being that those deriving personal benefit from the services should pay for the benefit they receive. User and other fees fund park operations and maintenance while tax-based appropriations pay for the costs of establishing and protecting these areas (Minister of Public Works and Government Services 1998). Prior to 1994, most parks simply collected a flat vehicle charge and this revenue was placed in the government's Consolidated Revenue Fund. The park system was funded solely through governmental appropriations and the money generated by the parks was unrelated to the money they received from the government. Revenues increased after the policy change and subsequent introduction of individual visitor use fees at most parks (Minister of Public Works and Government Services 1998). According to Parks Canada surveys of visitors, Canadians in general accept visitor use fees as long as revenues are kept by Parks Canada to sustain park operations (Minister of Public Works and Government Services 1998).

Currently, the government finances creation and protection of parks but users finance certain services such as camping, boat lockage and cross-country skiing. A new management plan, implemented in 1998, allows Parks Canada to recover costs from its users (Eagles 1999). Parks Canada retains and reinvests all park-generated revenues (CDS\$74 million in FY99-00) on a non-lapsing basis (Figure 13). The plan allows the agency to increase revenues from products and services and links revenues to costs (Eagles 1999). The plan allows Parks Canada to manage itself in a market-responsive fashion (Minister of Public Works and Government Services 1998).

Figure 13. Parks Canada sources of revenue, 1999-2000.
(total CDS67.6 million*)



Source: (Wade 2000)

* does not include CDS7.9 million from revolving funds.

Parks Canada has removed subsidies previously given to commercial businesses and town sites within the parks (Minister of Public Works and Government Services 1998). All enterprises within parks must fund their operational costs and capital investments through the monies they earn (Minister of Public Works and Government Services 1998). When setting rates for the use of services and facilities controlled by Parks Canada or private enterprise within the parks the agency considers market factors such as supply and demand, the price, quality and location of similar services outside the parks (Parks Canada 1999). Additionally, parks in the northern territories and provinces charge high visitor use fees (CDS100). This fee is labeled an annual excursion fee and visitors pay when they register at the park; visitors are required to register for safety reasons. Parks Canada is able to charge this relatively high fee since parks are inaccessible, the costs of reaching them are high and visitors are more willing to pay a high visitor use fee (Phillips 2000).

Parks Canada policy states that in order to avoid deleterious impact on park ecosystems commercial facilities and services should take place outside of parks, ideally in adjacent communities (Parks Canada 1999). Parks Canada also locates most of its own administrative facilities outside its parks' borders (Parks Canada 1999). If facilities are to be located within a protected area, certain factors are considered such as 1) impacts on the ecosystem, 2) contribution to park themes and messages, 3) heritage character, 4) environmentally appropriate design, and 5) that the needs and expectations of visitors are consistent with park objectives (Parks Canada 1999).

Provincial park policy

Canadian provincial park agencies vary in budget, operations, and management. In 1994-95 provincial budgets ranged from CDS1,743,000 for Prince Edward Island to CDS38,572,000 for Alberta (see Table 20) (Van Sickle and Eagles 1998). Provincial park agencies have also been

affected by reductions in tax-based allocations and all 13 have lost staff due to these reductions. Like their U.S. counterparts, provincial parks looked towards visitor use fees to offset costs. In 1995 however, five of the twelve provinces did not have written fee and charges policies. The lack of written policy reflected a low commitment to fee collection (Van Sickle and Eagles 1998). Although some agencies did not have formal policies in place in 1995, they did have informal pricing policies and only one agency reported that it had never considered a written policy. The remaining four indicated that fee policies are covered in general parks policies or are in varying stages of development (Van Sickle and Eagles 1998).

TABLE 20. CANADIAN PROVINCIAL PARKS AGENCIES BUDGETS, 1994-95, (CDS).

Park Agency	Total Parks Budget	Capital Budget	Operating Budget
Alberta	38,572,000	2,503,000	36,069,000
British Columbia	no data	no data	no data
Manitoba	17,400,000	280,000	14,600,000
New Brunswick	7,346,000	700,000	6,561,100
Newfoundland	5,405,000	850,000	4,555,000
Northwest Territories	5,000,000 *	3,000,000 *	2,000,000 *
Nova Scotia	5,000,000 *	1,176,000	3,800,000 *
Ontario	47,711,395	6,575,018	41,136,377
Prince Edward Island	1,743,700	none that year	1,743,700
Quebec	10,000,000 *	2,000,000 *	8,000,000 *
Saskatchewan	10,990,000	990,000	10,000,000
Yukon	3,260,000	1,730,000	1,530,000
TOTAL	132,428,095	14,804,018	116,195,177

Source: (Van Sickle and Eagles 1998)

* approximate budget.

Provincial park funding

The 12 provincial park agencies have a variety of funds generation mechanisms in addition to government appropriations (Table 21). All agencies have differential fees, with fee differences based on the season, type of group, location of campsite, residence of visitor, and the popularity of the park. Retention of revenue varied among the provinces as well; in 1994-95, six agencies kept the revenue they earned (Table 21). Since that time Quebec has made regulations to keep revenue within the agency (Van Sickle and Eagles 1998) and Ontario Parks has been restructured from a government agency into a parastatal (i.e., a government-owned corporation), which has led to an increase in income from tourism (Eagles 2000). In Northwest Territories and British Columbia, revenues go directly to contractors to offset the contractor's costs. Overall, there is a national trend towards revenue retention by Canadian park agencies (Van Sickle and Eagles 1998).

TABLE 21. SOURCES AND RETENTION OF REVENUE IN CANADIAN PROVINCIAL PARK AGENCIES, 1994-95.

Park Agency	Revenue Sources	Revenue Retention
Alberta	Camping fees, land dispositions, visitor use fees and permits, special visitor use fees, contracts, concessions, misc. revenue.	no
British Columbia	Government provides 99% of funding, campgrounds operated by commercial contractors who retain all revenues.	yes
Manitoba	Lodge/private land/commercial leases, golf, camping/park entry.	no
New Brunswick	Visitor use fees, leases.	no
Newfoundland	Camping fees.	no
Northwest Territories	Fees, retail merchandise, licenses, permits.	yes
Nova Scotia	Camping fees.	yes
Ontario	Visitor use fees, concessions, misc.	yes
Prince Edward Island	Visitor use fees.	no
Quebec	Contracts, visitor use fees, camping and other activities.	no
Saskatchewan	Visitor use fees, lease fees, permit fees.	yes
Yukon	Camping fees.	no

Source: (Van Sickle and Eagles 1998)

Canadian park agencies have developed innovative methods for funds generation. Parks Canada conducts visitor surveys on an ongoing basis that provide data to the agency enabling better management of park programs (Minister of Public Works and Government Services 1998). Each park has developed a visitor activities database that is used for park management and reporting to Parliament. Information collected is used for improving facilities, creating management and service plans, and developing visitor risk management programs (Parks Canada 1999). Reliance on volunteers and volunteer organizations, private sector involvement, fundraising, and donations has increased in recent years (Van Sickle and Eagles 1998). Parks Canada is continually examining ways to improve service and reduce costs (Minister of Public Works and Government Services 1998). In 1997, three national parks in the maritime provinces took part in a pilot project of centralized reservation system (Minister of Public Works and Government Services 1998). Campers reserved camping sites over the telephone using a credit card to pay a reservation fee that went to a private contractor. Parks Canada incurred no costs and public response was substantial with 100 percent reservation for campsites during July and August (Minister of Public Works and Government Services 1998). Additionally, as part of the Government-on-Line initiative, Parks Canada is developing a national on-line reservation system for campsites (Wade 2000 (unpublished)). Parks Canada is also developing a national pass similar to the Golden Eagle Passport issued by NPS. This pass is slated to go on sale in December, 2000 (Wade 2000).

Canadian park concessions

Unlike U.S. parks, which use only a single concessioner per park, Canadian parks host multiple homes and businesses, often within town sites (Lowry 1994). Revenue is collected in the form of lease payments rather than a percentage of profits (Lowry 1994). Lands in national parks are leased to individuals for commercial or residential use and the leaseholder pays an annual rent to the Crown for use and occupancy of national park lands (Parks Canada 2000b). The Treasury Board requires government departments to receive fair market value for the rent and use of federal property and therefore rental rates are based on market value appraisals of the leased lands (Parks Canada 2000b). Commercial and residential lessees receive one bill for utilities

(e.g., water, sewer, and garbage) and one land rent bill from Parks Canada (Parks Canada 2000b). Historically, the issue of towns within national parks has been the subject of disputes between residents and park officials. Before the 1980s the agency encouraged the growth of towns within the parks, today however, Parks Canada prohibits new communities from developing within parks (Lowry 1994).

Summary

- Visitation to Canadian national and provincial parks has increased while government appropriations to these agencies have decreased over time. Prior to 1994, parks collected a flat vehicle charge and Parks Canada was funded solely through government appropriations and all revenue generated by the parks was placed in the government's Consolidated Revenue Fund and was unrelated to the money parks received from the government. Since 1994, Parks Canada has retained 100 percent of its park-generated revenue, visitor use fees fund park operations and maintenance while tax-based appropriations pay for the costs of establishing and protecting these areas.
- When setting rates for the use of services controlled by Parks Canada or private enterprise within the parks, the agency considers market factors such as supply and demand, the price, quality and location of similar services outside the park.
- The 12 provincial park agencies have a variety of funds generation mechanisms in addition to government appropriations. Retention of park revenue also varies between provinces. Overall, there is a national trend towards revenue retention by Canadian park agencies. The parks conduct visitor surveys and maintain databases to encourage better management of park programs and develop new methods of generating revenue.
- Canadian parks host multiple homes and businesses often within town site and revenue is collected in the form of lease payments rather than a percentage of profits. Parks Canada retains the revenues generated from these fees.

V. NATIONAL PARKS OF COSTA RICA

Historical overview

The basis for the formation of Costa Rica's park system was quite different than for those in North America. The Costa Rican government formed the park service in the late twentieth century with main focuses being conservation and protection of biological resources rather than for enjoyment and recreation of its citizens as is the case in the United States. The Forestry Law of 1969 established a national program of protected areas in Costa Rica. This legislation made the government responsible for the management, protection, appropriate use and conservation of Costa Rica's natural resources (MacFarland *et al.* 1982). The 1969 law mandated the General Forestry Directorate (DGF) and its two departments the National Parks and Forest Protection to carry out the policies of the legislation (MacFarland *et al.* 1982). The costs of the program were covered by annual governmental appropriations and the formation of the Forestry Fund, which provided additional funds (MacFarland *et al.* 1982). The DGF administered the Forestry Fund, whose monies came from voluntary contributions, governmental institutions and other donating parties (MacFarland *et al.* 1982).

Throughout the 1970s the government purchased park lands and paid the operational budgets of the parks. However, during the economic crisis of the 1980s the park service received funding from external sources including U.S. environmental organizations and other foreign governments (Honey 1999). The government was forced to make certain concessions in exchange for funding from the World Bank, International Monetary Fund and USAID. One of these concessions required the reduction of park service budgets and staff (Honey 1999). During this 10-year freeze on budget increases, visitor services were scaled back and protected area employees were barely paid living wages (Rovinski 1991). During this time park entrance fees were US\$1 for both foreigners and nationals, with annual revenues totaling US\$0.5-1 million (Honey 1999).

In the 1990s international donations of funds decreased and the government was faced with financial emergency in the park service and chose to raise national park entrance fees. Entrance fees were raised to US\$15, advance purchase fees to US\$10 and US\$5.25 for bulk purchases by travel agents (Honey 1999). Some worried that the increase would lead to decline in visitation but results showed that most visitors were willing to pay the fee (van der Straaten 1997). Apparently, since visitors had already spent a substantial amount on their travel and accommodations they were willing to pay an additional \$15 (van der Straaten 1997). From January to September 1995, US\$3.78 million was earned from entrance fees although visitation decreased, four times the amount earned in all of 1994 (Honey 1999). However, the additional funds from the increase still did not cover the park service's costs.

In 1996, after much criticism from tourism industry the park service moved to a two-tiered fee system, with foreigners paying a US\$6 entrance fee for national parks and nationals paying US\$1 (Honey 1999). Additionally, 75 percent of the revenues are retained in the park in which they were earned with the remaining 25 percent going to parks with lower incomes (Honey 1999). United States, Canadian, and Swedish governments provide support to certain conservation areas as well. Since 1989, management of protected areas has fallen under the Ministry of Natural Resources, Energy and Mines. Under this agency, nine protected area units consisting of multiple parks and reserves have been designated. Each of the nine regional conservation areas is financed independently and must define its own regulations in a management plan, which must take into account protected area carrying capacity. However, such plans only exist in a few parks. Much like their North American counterparts, management

budgets of Costa Rican public parks have not kept pace with the increase in park tourism (Baldares and Laarman 1990). The amount appropriated for operating funds has decreased while the area of protected lands has more than doubled (between 1981-1987) (Baldares and Laarman 1990).

Current status

Today, national parks, wildlife refuges, and biological reserves cover an area of over 630,000 hectares in Costa Rica, (The Costa Rica Tourism and Travel Bureau 2000) with over 25 percent of the country's territory under protection (Honey 1999). Nearly all of Costa Rica's habitat types are represented in its network of parks. Costa Rica was named the "number one ecotourism destination in the world" in 1992 by the U.S. Adventure Travel Society (Honey 1999). In 1999, there were an estimated 1.03 million international tourist arrivals to Costa Rica, with tourism receipts totaling over US\$1 billion (World Tourism Organization 2000). Of the 781,000 tourism arrivals in 1996, over 66 percent of these tourists visited a protected area (Instituto Costarricense de Turismo cited by The Ecotourism Society 1998). Costa Rica's national park system forms the foundation for its successful ecotourism industry (Honey 1999).

Revenue earned from various sources supports Costa Rica's national park system. Protected area budgets are supplemented by proprietary funds (Baldares and Laarman 1990), which are monies earned through: 1) donations; 2) user and concession fees; 3) fees from concessions of operation of radio and television towers and a food concession at the zoo; and 4) fiscal stamps, which must be purchased for documents such as passports, first-time auto registrations as well as all liquor vendors and places of entertainment (McNeely 1988). Additional revenue paid into proprietary funds are raised through the sale of hunting licenses, excise taxes on arms and ammunition and transfers from other governmental agencies (McNeely 1988). Proprietary funds cover park operating costs whereas salaries and wages are paid from Costa Rica's central budget (Baldares and Laarman 1990). The Costa Rican Tourism Institute must also provide financial support to protected areas (McNeely 1988).

A 1995 contingent valuation study of Costa Rica's national parks found that the current fee of US\$6 (foreigners) or US\$1 (residents) was not optimal in terms of revenue generation or as a scheme to balance visitation across all of the national parks (Shultz *et al.* 1998). The authors surveyed both Costa Rican nationals and foreigners for their willingness to pay for future visits to Volcán Poás and Manuel Antonio National Parks. Costa Rican residents expressed a mean willingness to pay US\$11 for Poás and US\$10 for Manuel Antonio. This willingness to pay is almost 900 percent more than the current fee for residents (Shultz *et al.* 1998). Foreign visitors indicated they would pay more than double the current fees, with a mean willingness to pay US\$23 for Poás and US\$14 for Manuel Antonio.

Private reserves

Unlike North America, Costa Rica has an extensive system of popular private reserves and protected areas. These have been supported by the government, national park officials, the World Bank, and the tourism industry (Honey 1999). Private parties can afford to purchase and manage land and provide ecotourism facilities the government could neither buy nor provide (Honey 1999). They also provide an additional tourist and research draw for the country (Rovinski 1991). "Private reserves bypass government bureaucracy and red tape, are often more efficiently run than national parks, can respond quickly to conservation and ecotourism, and provide resources to support other activities such as scientific research, organic farming, and sustainable harvesting from the forest" (Honey 1999). However important, little is known about the economics underlying their functioning (Langholz *et al.* 2000).

La Selva, a private reserve operated by the Organization for Tropical Studies (OTS) is responsible for expenditures that have accrued to Costa Rica because of OTS return travel (up to 1987) of US\$7.51 million. In 1989, more than 13,000 tourists visited and spent US\$291,000 (Rovinski 1991). The 50,180 hectare Monteverde Cloud Forest Reserve is the most renowned private reserve in Costa Rica and the most popular ecotourism destination in the country (Honey 1999). Monteverde receives around 50,000 visitors annually (Honey 1999). Monteverde employs a multi-tiered fee system. Currently, foreigners pay a US\$23 entrance fee, up from US\$2.75 in the 1980s (Honey 1999). Residents pay US\$2 and Costa Rican students pay US\$1 entrance fees (Honey 1999). In 1994, the reserve earned over US\$850,000 with 90 percent of this covering operating costs. The remaining 10 percent goes to the Tropical Science Center, the nonprofit organization that manages the reserve (Honey 1999).

A 1998 survey of 68 private reserve owners in Costa Rica examined the economics and motivations behind private reserve management (Langholz *et al.* 2000). The survey examined how private landowners determined how much land to purchase and protect, and the non-market and market values associated with private reserves. Results of the survey showed that most private reserves are small, with a median area of 101 hectares. Owners were more concerned with having sufficient resources to manage their reserve well than they were with having large areas. One of the most important market values identified in private reserves is profitability, with profit being the second most powerful motivator for reserve ownership, although conservation and land stewardship had higher priority than profits in many cases. An additional value of private reserves is bequest value, which is the value of keeping a resource intact for one's heirs (Langholz *et al.* 2000). Eighty-six percent of the reserve owners indicated that they would prefer an heir to assume management of the reserve in the future.

Summary

- Costa Rica's national park system is relatively young, established in 1969 with main focuses being conservation and protection of biological resources rather than for enjoyment and recreation of its citizens as is the case in the United States.
- The Costa Rican government was forced to make certain concessions in exchange for funding from the World Bank, International Monetary Fund and USAID during the economic crisis of the 1980s. These concessions included scaling back park service budgets, staff, employee wages and visitor services. At this time entrance fees were US\$1 for both foreigners and nationals.
- In the 1990s entrance fees were raised to US\$15 in the wake of reduced international donations, however after much criticism from the tourism industry fees were reduced to

US\$6 in 1996 and remain at this level today. This fee is thought to be insufficient by some economists.

- The park system is funded through governmental proprietary funds and through financial support from The Costa Rican Tourism Institute.
- Costa Rica has a flourishing private reserve industry. Reserves are owned and operated by private parties who can afford to purchase and manage the land. Private reserve owners provide ecotourism facilities the government could neither buy nor provide and are additional tourist and research draw for the country.

VI. NATIONAL PARKS OF BELIZE

History and current status

The Central American country of Belize has 194,000 residents and an area of 22,690 km². In 1928, Half Moon Caye was set aside by the colonial government to preserve the habitat of the red-footed booby (Boo 1990b). Belize gained independence in 1981 and passed the National Parks System Act soon thereafter. This act legislated the establishment of national parks, natural monuments, and wildlife reserves (Boo 1990b). The Conservation Division of the Forest Department is responsible for the management of the 24 parks that make up Belize's National Parks System (Pinelo 2000). There is therefore no formal park service, which has been an impediment in the growth of ecotourism in Belize (Boo 1990b). Non-governmental organizations co-manage nine of the protected areas but there has not been an agency that has undertaken the responsibility of developing management plans or monitoring the protected areas (Boo 1990b). The government does manage some protected areas, including marine reserves that are managed by the Ministry of Agriculture and Fisheries (MAS) (Lindberg and Enriquez 1994a). The MAS manages the Hol Chan Marine Reserve and other reserves that have been established recently (Lindberg and Enriquez 1994a).

The Conservation Division does not receive governmental appropriations for the management of their 24 parks. Although the parks are the responsibility of the government they do not receive financial inputs from it. In 2000-2001, the Conservation Division received US\$118,000 to pay the salaries of the four employees and some equipment maintenance, administrative costs and materials (Pinelo 2000). The parks managed by the Conservation Division do not have management plans, infrastructure or onsite management (Pinelo 2000). Visitors may enter and leave the parks at will; no entrance or visitor use fees are collected, although some areas, such as nature reserves, prohibit all public access and use.

The government enacted the Protected Areas Conservation Fund (PACT) to collect revenues and taxes earned from tourist activities and visitor use fees. The monies are then channeled into protected areas management and conservation activities. Competition to receive grants from this fund is fierce and the maximum amount granted is US\$17,5000 (Pinelo 2000). PACT receives 20 percent of the revenues earned by the non-governmental organizations co-managing some of the parks (see below).

Belize's low population density has permitted the country to retain significant amounts of forested, unexploited areas (Lindberg and Enriquez 1994a). These protected areas form the foundation of ecotourism in Belize and its park system (Lindberg and Enriquez 1994a). Belize has protected 41 percent of the country (9,417 km²) in its twelve parks and natural reserves (Pinelo 2000). In 1999, Belize hosted over 387,000 tourists who collectively spent US\$111.5 million during travels (Mossiah 2000). In a 1997 survey of tourists by the Belize Tourist Board and Central Bank, over 28 percent reported visiting a national park during their stay (Mossiah 2000). Visitation to some of Belize's protected areas is presented in Table 22. Belize's marine ecosystems have been the major ecotourist attraction for most visitors. Sixty percent of visitors report participating in snorkeling, 17 percent in sport fishing and 30 percent in scuba diving (Mossiah 2000). Over 70 percent of tourist arrivals participating in a 1990 World Wildlife Fund survey reported that visiting a protected area was important to them and influenced their decision to travel to Belize (Boo 1990b). However, as of 1990, no national park service existed and 8 protected areas were co-managed by a non-governmental organization, the Belize Audubon Society (BAS). The BAS was mandated by the Department of Forestry to manage and finance these areas (Boo, 1990b).

TABLE 22. NUMBER OF VISITORS TO A SAMPLE OF BELIZE'S PROTECTED AREAS.

Protected Area	1997	1998	1999
Guanacaste National Park*	2,582	2,567	2,788
Crooked Tree Wildlife Sanctuary*	2,074	1,483	1,619
Cockscomb Basin Wildlife Sanctuary*	3,488	4,078	3,603
Blue Hole National Park*	5,017	7,098	6,162
Half Moon Caye National Monument*	N/A	7,310	7,940
Belize Zoo and Tropical Education Centre	37,029	40,855	39,838
Mountain Pine Ridge	32,262	17,896	25,835
Community Baboon Sanctuary	4,931	4,676	4,011
Hol Chan Marine Reserve	41,380	38,737	37,954

Source: (Mossiah 2000)

* managed by Belize Audubon Society

The Community Baboon Sanctuary

Belize hosts one exceptional example of innovative protected area management. The Community Baboon Sanctuary is managed by an association of village landowners (Ceballos-Lascurain 1996). This community-operated refuge hosts a large population of howler monkeys (*Alouatta pigra*), locally known as baboons and covers an area of 15.5 kilometers of riparian habitat (Boo 1990b). Community residents voluntarily complied with a management scheme written by biologists and earn revenue through renting rooms or selling meals to tourists (Boo 1990b). The collective control of the Community Baboon Sanctuary has proven to be an effective local tourism endeavor (Ceballos-Lascurain 1996). In 1999, over 4,000 individuals visited the sanctuary (Table 19).

Belize Audubon Society

The Belize Audubon Society (BAS) is "a non-profit, non-governmental, membership organization dedicated to the promotion of the sustainable use and preservation of [Belize's] natural resources" (Belize Audubon Society 2000). The BAS manages eight protected areas established under the National Parks System Act of 1981. In 1984, BAS was directed by the government of Belize to direct the daily management, financing, development and operation of certain protected areas (see Table 20) (Belize Audubon Society 2000). The government and Forest Department are responsible for providing and maintaining infrastructure and security for the areas including access roads, boundaries demarcation, signage, guard posts, radio equipment, and patrol support (Government of Belize 1999). BAS manages two natural monuments, two wildlife sanctuaries, two national parks, one nature reserve and one private nature reserve.

Concessions and activities are decided on jointly by the BAS and the government and include overnight facilities, food, beverage and other services, sales of goods, equipment rentals, and other like concessions (Government of Belize 1999). The BAS has the right to refuse any recreation-related concessions and activities (Government of Belize 1999). The government authorized the BAS to collect visitor use fees, concession fees, and other fees associated with the management and development of the protected areas. Profits from the operation of the various concessions go to the concessioner. Twenty percent of the fees collected by the BAS go to the Protected Areas Conservation Trust. Seventy percent of the collected fees are used for the management and development of the protected areas. The remaining 10 percent helps meet expenses specifically related to infrastructure and security for the areas. This 10 percent is

considered the government's partial contribution towards infrastructure and security for the protected areas (Government of Belize 1999).

Park management depends on financial support from foundations, non-governmental agencies, and private donations (Lindberg and Enriquez 1994a). Table 23 outlines the sizes of protected areas managed by BAS and fees for entering. BAS managed areas total 60,703 hectares (Belize Audubon Society 2000). Entrance passes can be purchased upon entering the protected area, or in advance at BAS office in Belize City (National Park Service 2000c). Visitation for a sample of BAS-operated areas is shown in Table 22.

TABLE 23. PROTECTED AREAS MANAGED BY THE BELIZE AUDUBON SOCIETY, SIZES AND ENTRANCE FEES, 2000.

Protected area	Hectares	Entrance fees (US\$)	
		Belizean Nationals	Foreigners
Guanacaste National Park	20	0.50	2.55
Blue Hole National Park	232	1.00	4.00
Crooked Tree Wildlife Sanctuary	6,475	1.00	4.00
Cockscomb Basin Wildlife Sanctuary	41,278	1.25	5.00
Half Moon Caye National Monument	3,925	1.25	5.00
Tapir Mountain Nature Reserve	2,728	no access	no access
Shipstern Nature Reserve	8,903	1.00	5.00

Source: (Belize Audubon Society 2000)

Summary

- The National Parks System Act, which legislated the establishment of the national parks of Belize, was passed in 1981. There is no formal park service in Belize and the Conservation Division of the Forest Department is responsible for the management of the 24 parks in the system. The Conservation Division shares the management of several parks with the Belize Audubon Society.
- The parks managed by the Conservation Division do not have management plans, infrastructure or onsite management, visitors may enter and leave the parks at will and no visitor use fees are collected. BAS managed parks charge entrance fees and are allowed to retain 80 percent of the revenues generated for management and security.

VII. COMPARISON AND TRENDS IN PARK SYSTEMS

Several trends can be identified in the protected area systems of North America (see Table 24). Park systems in these developed countries are moving towards greater financial self-sufficiency in their operations and management. This move has been spurred by the reduction in governmental appropriations to the protected areas and the increase in overall visitation. In general, park systems in North America implement visitor use fees to both manage the number of visitors and to raise much needed revenues. There has been a global trend of protected areas covering a larger percentage of their operating budgets from protected area-generated revenues (Eagles 1999). There has also been a concomitant change from protected area revenues funneling directly into the general governmental treasury to revenue retention by the park agencies. Park services are moving towards allowing individual parks to keep a share of the revenues generated at the site, as in the Recreation Fee Demonstration Program of NPS and the Entrepreneurial Budgeting System of Texas. Park concession licensing and leasing are moving towards more market-based schemes with fees competitive with those in the private sector.

In developing nations, such as Costa Rica and Belize, park systems may be much younger, have less infrastructure in place and fewer governmental funds available to them. Costa Rica has a formal park service and charges the same entrance fee (US\$6) at all protected areas within the system. Belize does not yet have a national park agency and does not have a cohesive management plan for its protected areas nor does it charge fees for their use. The Belize government has the unique situation of co-managing several of its protected areas with a non-governmental organization, the Belize Audubon Society. BAS charges entrance fees to its managed areas and retains 80 percent of the revenues. Costa Rican parks retain 75 percent of their park-generated revenues at the site of collection and distribute the remaining 25 percent to low-income parks in the system. Both countries use multi-tiered fee systems, with nationals and students paying less than foreigners. Both nations also rely on voluntary donations and assistance from non-governmental organizations. In developing countries, private reserves have filled a conservation niche where governments often do not have the resources to purchase nor operate additional protected areas.

TABLE 24. COMPARISON OF PARK SYSTEMS.

	U.S. NPS	Idaho	Texas	New Hampshire	Vermont	Parks Canada	Costa Rica	Belize
Funding	governmental appropriations (US\$2 billion) and park-generated revenues	56% of operational budget (US\$45.5 million) from state government, 27% covered by park revenues	84% of operational budget (US\$49 million) covered by park-generated revenues	self-sufficient, US\$4.7 million operating budget covered by park system	park-generated revenues cover all but US\$30,000 of operational budget (US\$5.27 million)	governmental appropriations (CDS388 million) and park-generated revenues (CDS74 million)	proprietary funds, governmental appropriations and donations.	US\$118,000 from government, BAS sites use fee revenues.
Visitation	288 million	2.4 million	21 million	4.4 million	834,000	16 million	515,000*	108,000*
Entrance fees	yes	vehicles only	yes	yes	yes	yes	yes	some (BAS sites)
Visitor use fees	yes	yes	yes	yes	yes	yes	N/A	BAS sites yes
Revenue retention	some –RFDP, 80% on site, or non-RFPD 15%	revenues to a dedicated park fund, and must be appropriated	yes, 100%	yes, 100%	yes, 100%	yes, 100%	yes, 75% on site, 25% to other parks	BAS, yes 70%
Concessions	yes, fees retained	yes, revenues retained by some enterprises	yes, fees retained	yes, fees retained	yes, fees retained	yes, fees retained	N/A	BAS – yes, fees retained

* estimates

VIII. MANAGEMENT OPTIONS AND RECOMMENDATIONS

Levying fees for the use of public lands has been one of the most contentious topics in public park policy throughout the last decade (More *et al.* 1996). Pricing and park revenue generation policies have been ignored in developed nations' public policy, possibly due to a long-standing tradition of free access and governmental financing (Van Sickle and Eagles 1998). In developed nations it is politically popular to favor free access and therefore political leaders are hesitant to support fee increases in fear of public backlash (Laarman and Gregersen 1996). Nature-based tourists often visit national parks as a main destination and entrance and visitor use fees generally fall below the amount that visitors are willing and capable of paying and the amount necessary to cover park operations (Laarman and Gregersen 1996). In developing nations this type of pricing results in relatively poor countries subsidizing visitors from wealthy nations, who constitute the majority of all nature-based tourists (Laarman and Gregersen 1996).

Debate in the United States centers around the "free good" nature of protected areas, which traditionally are considered part of a country's natural heritage (Lindberg 1991). Historically, protected areas have become increasingly popular and less tax money has been provided for their operations and maintenance. Due to funds shortages many park systems have considerable maintenance backlogs (Leal and Fretwell 1996). Increased visitor use fees have been cited as a technique to offset dwindling tax-based governmental budgets (Van Sickle and Eagles 1998). Charging fair market value for use of public protected areas ensures that those who get the most use of the commodity also pay the costs (O'Toole 1999a). Visitor user fees also provide the services that visitors are willing to pay for, not what a politician wants for her district (O'Toole 1999a). Market-based visitor use fees are a potentially powerful tool to move towards greater efficiency, equity and environmentally sustainable management, although this tool is commonly underexercised (Laarman and Gregersen 1996).

Issues in Latin America and the Caribbean have differed somewhat from those in North America. The most difficult fee policy issues are: 1) how to handle residents from different income levels who may be priced out of the market by high fees, and 2) how to handle foreign visitors who may have a higher willingness to pay for protected area services (Baldares and Laarman 1990). Budget issues may also be different in developing countries whose public agencies may not have ample funds available to appropriate for protected area operational budgets (Baldares and Laarman 1990). For protected areas with low visitation, visitor use fees do not necessarily remedy the problem of inadequate public funding because they may not generate sufficient revenue through fee collection due to low visitor numbers or low fees.

In general, middle and upper class individuals visit protected areas more heavily than those with lower incomes. People in higher income brackets have the money and leisure time to travel. If visitor use fees are raised to market-based values, these individuals are unlikely to decrease their visits to protected areas (Mackintosh 1983). However, tourists who will pay high visitor use fees may also be the tourists that expect the most amenities and luxurious services. Often, the individuals that can provide such luxury services are from the wealthiest sector or are foreign investors (World Congress on National Parks and Protected Areas 1993). Tourists who are able to pay only lower prices for protected area access and services may not demand lavish services and therefore money spent by these tourists generally stays in the local economy (World Congress on National Parks and Protected Areas 1993).

In a 1996 study that examined the effect of fees on U.S.-based campers' expectations and behavior, 84.7 percent of respondents surveyed believed that the government has a direct

responsibility in the provisioning of camping, but that users should bear a share of the costs (More *et al.* 1996). Respondents believed the public should be willing to pay for the benefit gained from visiting public protected areas and those who enjoy the benefits directly should pay for them. Interestingly, they disagreed that camping should be available to all individuals regardless of their ability to pay visitor use fees (More *et al.* 1996). As prices increase the number and quality of facilities and amenities expected by campers also increases (More *et al.* 1996). Respondents indicated a mean willingness to pay US\$8.19 for a primitive campground; US\$12.50 for a campground with restrooms and running water; and US\$16.27 for a campground with restrooms, running water, showers, electricity, interpretive programs and a small store (More *et al.* 1996). More *et al.*, (1996) concluded that the public wants to know they are getting something for the money they spend.

Pros of visitor use fees

In the United States, historic precedent and tradition deter fee increases for national and other types of parks. Despite this trepidation the list of reasons to support market-based visitor use fees for protected areas is long. Cost recovery and revenue generation are the two major justifications for levying visitor use fees (Harris and Driver 1987). Both covering the operating costs of administering and protecting the resource have been historical explanations for fees (Harris and Driver 1987). Visitor use fees generate revenue in two ways, 1) directly through fees collected from visitors and, 2) indirectly by reducing the use of the recreation site and the concomitant reduction in costs (Binkley and Mendelsohn 1987). There are various additional benefits of visitor use fees:

- *Public appreciation.* Surveys and observation have shown that the public has greater appreciation for the services it pays for (Ibrahim and Cordes 1993; Binkley and Mendelsohn 1987).
- *Congestion control.* Fees allow increased management and control of park access by users. Market-based visitor use fees may eliminate overcrowding because congested parks have the highest demand and hence will charge the highest fees. Visitors will pay more for a less-crowded experience (O'Toole 1999a; Ibrahim and Cordes 1993).
- *Inequitable competition eliminated.* Visitor user fees would facilitate development of protected areas and recreation in the private sector by removing inequitable advantages realized by free access to public parks. (Manning *et al.* 1984).
- *Operational costs.* Fee revenues could offset operation costs. Protected area self-sufficiency would encourage realistic market-based pricing. Visitor use fees cover the costs of the services and activities offered at protected area whereas government-financed parks fail to collect fees and encourage resource exploitation by subsidizing use (Leal and Fretwell 1997).
- *Comparative equity.* Those who currently do not participate in public protected area or recreation activities are taxed for a service they do not use. Visitor use fees guarantee that only consumers of the recreation pay for the site and bear the cost of their activities. Additionally, unlike public schools, use of recreation facilities and protected areas is not mandatory and should not be funded in the same manner (Manning *et al.* 1984).
- *Tragedy of the Commons.* Pricing of a good below its market cost encourages exploitative use by its users (Manning *et al.* 1984). Parks and protected areas tend to be used to the point where their value is eliminated and fees would limit such exploitative use (Lindberg 1991).

- *Information exchange.* Free access policies allow visitors to bypass all contact with park employees. Visitors lose anonymity through contact with fee collectors. Fee collection provides an opportunity for information exchange between users and park personnel. Additionally, inappropriate users can be filtered out (Manning *et al.* 1984).
- *Service and innovation incentives.* Protected area self-sufficiency gives managers incentives to provide attractive services to the public and maintain parks in good condition because the protected area depends on its revenues for its operational budget. Managers then strive to increase the attractiveness to the user to encourage their return (Leal and Fretwell 1997). Fees encourage managers to be entrepreneurial, since their budgets may be dependent on fee revenues (Crompton 1998). Self-sufficiency would also discourage managers from providing money-losing services, environmentally damaging projects, and facilities that are too expensive to maintain (O'Toole 1999a). Tax-funded managers can ignore both economic realities and visitor satisfaction (Leal and Fretwell 1997; O'Toole 1999b).
- *Improved resource management.* Resources are better managed when agencies levy fees and retain the revenue. For example, the U.S. Forest Service is more responsive to the needs of timber purchasers than recreational users because it can charge fair market value for timber but not for recreation (O'Toole 1999b).
- *Less political.* Protected area self-sufficiency rather than governmental appropriations reduce the need for managers to cater to politicians and special interests (Leal and Fretwell 1997). This also reduces the incentive for creation of substandard protected areas by politicians for political gain (O'Toole 1999a).

Cons of visitor use fees

Although there are numerous positive effects of visitor use fees, possible negative aspects must be addressed as well.

- *Seller and buyer.* Visitor use fees may alter the social roles of manager and visitor, transforming them into seller and buyer. This type of shift could possibly change the rights, responsibilities and obligations of managers and visitors (More *et al.* 1996). User driven funding suggests the agency should be responsive to the users, rather than to society as a whole (Crompton 1998). Visitor use fees may increase expectations and amenities and over time may lead to additional fee increases (More *et al.* 1996).
- *Profit seeking.* Some conservationists believe that emphasis on revenue generation in protected areas may be encouraged for its financial benefit, which may have a damaging effect on protected area ecosystems (Van Sickle and Eagles 1998).
- *Double taxation.* Individuals are charged for protected area resources twice, once through taxes and again through visitor use fees (Ibrahim and Cordes 1993).
- *Excludes the poor.* Generally, those who benefit most from outdoor and nature-based recreation are the least able to pay for its use (Ibrahim and Cordes 1993). Fees may be prohibitively expensive, price some users out of the market and ultimately discourage low-income visitors (Manning *et al.* 1984; Laarman and Gregersen 1996).
- *Tradition.* Some object to paying for what has traditionally been free (Manning *et al.* 1984). In the United States, the belief that public protected areas are owned by citizens is held

widely. Some object strongly to the idea that citizens should have to pay for access to their own land (Wilkinson 2000b).

- *Parks are merit goods.* (Ibrahim and Cordes 1993). Visitor use fees conflict with the idea of recreation as a merit good and therefore should be funded through tax-based appropriations (More *et al.* 1996).

Pricing Schemes

Fee prices should be based on visitor demand for access to the protected area. Price levels affect demand for a commodity. Price elasticity is the change in demand associated with a change in the price of a commodity. Generally, price elasticity is high in parks and recreation because substitutability is high between tourist attractions (Lindberg 1991). When the price of a recreation resource is high, consumer demand decreases and total expenditures decrease. However, variables other than price affect demand for recreation goods and leisure services; these include: 1) socioeconomic characteristics of the consumer; 2) attractiveness of the recreation site; 3) availability of a substitutable service; 4) travel time; 5) congestion or crowding; and 6) taste preference of the consumer (Walsh 1986).

When setting visitor use fee policies, managers must consider equity and if the fee will maximize benefits or efficiency. The First Welfare Theorem of economics dictates that maximum efficiency is achieved when each commodity's price equals its marginal cost (Katz and Rosen 1998). Efficiency depends on the supply and demand in the market. Economists recommend that visitor use fees be set where added costs of producing recreation opportunities equal the added benefits (Walsh 1986). Managers must choose fee levels that are neither capricious nor inequitable (Walsh 1986).

There are many methods and pricing schemes available to park managers (see Table 25). Flexibility in fee structure is a crucial component in any fee system. Flexibility allows managers to deal with inflation and changes in user demand on an ongoing basis (Lindberg 1991). Van Sickle and Eagles (1998) identify four pricing strategies used in parks and protected areas: 1) token charges to impute value to visitation, 2) revenues from fees used to offset operating costs, 3) fees used as management tools to regulate visitation, and 4) high fees to produce profit (this last scheme is seldom used).

Laarman and Gregersen (1996) recommend basic criteria when deciding the type and method of payment to be implemented in a protected area. First, the pricing system should indicate who is paying for what services and facilities. Second, equitable fees reflect the ability to pay and fees should be in proportion to the benefits received by the user. Third, visitor fee systems should not reduce economic efficiency. Finally, managers must weigh expected protected area revenues against the costs of fee collection and administration. When making decisions regarding fee implementation or increases in fees, Parks Canada considers whether the particular service is a public good or of personal benefit. If it is of personal benefit, then Parks Canada decides if the fee is going to be based on partial-cost recovery, full-cost recovery or a market-based price (Van Sickle and Eagles 1998). Table 25 summarizes visitor use fee systems that may be employed by protected areas.

TABLE 25. TYPES OF PROTECTED AREA PRICING STRATEGIES.

Pricing scheme	Description
Peak load pricing	Different prices for different times, depending on demand.
Comparable pricing	Prices based on average of user fees charged by other parks for equivalent attractions or services.
Marginal cost pricing	Prices set where the added costs equal the added benefits of producing the park; prices set at the intersection of the marginal cost and marginal benefit curve.
Multi-tiered pricing	Different prices based on residency, age, location, etc.
Differential pricing	Different prices based on level of service offered.

Source: (Walsh 1986)

How much should we charge?

Marginal cost pricing

Cost recovery is generally the most important guideline for pricing strategies and is the most logical and economically defensible scheme (Walsh 1986). The objective of a visitor use fee system should be to find the economically efficient number of users at a facility (Binkley and Mendelsohn 1987). The incremental cost of each additional user is the critical amount when setting appropriate fees (Binkley and Mendelsohn 1987). According to Binkley and Mendelsohn (1987), fixed costs must be paid regardless of the number of visitors and should not be considered when setting fees. The efficient quantity of use occurs when the marginal user is just willing to pay for the incremental cost of his/her visit. Marginal costs are based on the costs of administration, operations, degradation incurred with one additional user. In this case, managers would calculate the maximum optimum number of visitors and find the marginal cost of additional users at that level. Fees would be set based on the cost of that additional user and all visitors would be charged the same fee. This fee will be higher than the cost of marginal users at low levels of visitation. The fee may be higher than visitors are willing to pay at lower levels of use. However, if users do not have to pay for the incremental costs too many visits will result (Binkley and Mendelsohn 1987).

Ideally, user fees should be set at the intersection of demand curve with the marginal/average cost curve (when supply equals demand, average cost equals marginal cost) (Ibrahim and Cordes 1993). If demand is greater than supply, marginal cost will increase and the park will realize profits. However if supply is greater than demand, marginal cost will decrease and subsidy will be needed (Ibrahim and Cordes 1993). Additional funds will still be needed to cover the total costs of the facility when fees are set where variable costs equal willingness to pay because this is unlikely to generate enough revenue to cover the total costs (Binkley and Mendelsohn 1987). For revenue generation, fees could be set to equal average costs and would cover all costs of the facility. However, average-cost pricing may force many consumers out of the market (Binkley and Mendelsohn 1987). For those individuals priced out of the market by high fees, the concept of "park stamps" has been suggested, where low-income residents could receive vouchers for protected area use for free or at a reduced cost (Binkley and Mendelsohn 1987). Likewise, residents could be given park coupons for discounted visitor use fees or could be offered certain times of the day where fees are reduced (e.g., an "early bird special").

Comparable pricing

Another pricing scheme is known as comparable or going-rate pricing, where fees are based on the average prices at equivalent attractions. Comparable pricing tends to avoid controversy because fees are consistent with fees charged by other parks (Walsh 1986). Problems may arise

when a park is unique and there are not other comparable parks on which to base a price (Walsh 1986).

Multi-tiered pricing

Multi-tiered pricing, where fees vary by category of visitor, is sometimes used. Fees are often reduced for locals, children, students, disabled individuals, and retired persons. Two-tiered pricing may distinguish between residents and foreigners, who do not pay taxes. A multi-tiered system could involve local residents, nationals, researchers, and foreigners who have a higher willingness to pay (Lindberg 1991). Multi-tiered pricing schemes can be justified because foreigners do not pay taxes, international travelers can usually afford to pay higher fees, and foreigners do not have to bear the opportunity cost for not exploiting the natural resources (Ceballos-Lascurain 1996). Two-tiered pricing schemes have been found to yield more revenue than a high or low fee alone (Laarman and Gregersen 1996). However, multi-tiered pricing has limits. When park carrying capacity is reached some visitors may have to be excluded and the park subsequently earns more revenue by selling to the non-residents rather than nationals. Laarman *et al.*, deem multi-tiered pricing schemes as extremely imperfect as a policy instrument because they "discriminate among individuals on the basis of broad but mythical averages i.e. foreigners are rich, students are poor" (Laarman and Gregersen 1996).

In a willingness to pay survey of Costa Rican citizens and foreign tourists, results showed that both foreigners and residents are willing to pay higher fees than were in place at the time of the study (Baldares and Laarman 1990). Both Costa Ricans and foreigners supported a two-tiered pricing system with higher fees for foreigners than residents (Baldares and Laarman 1990).

Differential fees

Differential fees based on the level of service are common, and commonly are found in the hotel industry (Van Sickle and Eagles 1998). Many parks charge differential fees, with fee differences based on residence, facility location, and congestion. Differential fees used in a set of campgrounds in Vermont resulted in a more even distribution of campsite use and a small increase in total revenue (Manning *et al.* 1984). In this study differential fees were hailed as a potentially effective management tool (Manning *et al.* 1984).

Other fee schemes

Another fee option is to keep fees low at entrance, which allows universal entrance, and then levy charges for individual services and facilities (Laarman and Gregersen 1996). This approach can be costly for management to implement and aggravating to park visitors. Taxes levied on equipment rentals are usually good revenue generation tools for developed countries. However, in less developed nations visitors often bring their own equipment and have no need for rental equipment (Laarman and Gregersen 1996). Additionally, collection of taxes at airports and hotels is another option, but this is less equitable than collecting directly from protected area visitors. Finally, voluntary contributions of cash, land and labor can be significant money generators, but neocolonial influences must be considered in the nature sector where foreign contributions are significant (Laarman and Gregersen 1996).

Reduced public resistance to fees

Laarman *et al.* (1996) offer strategies to reduce public resistance to fees. They note that the public resists fees less when fee revenues are used for quality improvements to trails, toilets, maps, and other facilities. The public also prefers fee increases in small increments rather than a large jump. They oppose fees less when the money goes towards operational costs rather than to

control visitor entry (Laarman and Gregersen 1996). Finally, there is less reluctance to pay when users know exactly what their money is being used for and when it is retained by the park (Laarman and Gregersen 1996). Tourists will pay more if they know the extra money goes to conservation of the area they visited (Lindberg 1991). A survey carried out by the National Parks and Conservation Association found that 80 percent of respondents supported entrance fees as high as US\$6 per day, as long as the parks were able to retain the revenue (O'Toole 1999b). Tourists also appreciate it when complimentary distribution of educational cultural and natural information accompanies fee increases (Lindberg 1991).

Protected areas with low visitation

Unlike North American parks, protected areas in developing nations may not receive large numbers of visitors. In this case, managers must consider the user demand for the protected area and the associated travel costs when implementing a fee system. The appropriate visitor use fee in this situation is difficult to determine. Protected areas with low visitation and hence low demand may or may not be able to charge high entrance and user fees. Parks that are relatively inaccessible may have very high travel costs associated with them and visitors may not be willing to pay additional access fees if they are set too high. However, in northern Canada, where travel costs are very high to reach some protected areas, visitor use fees also are set relatively high (i.e., CDS100). In this case, visitors have a high willingness-to-pay for access to the resource after investing a considerable amount in travel expenses. Phillips (2000) noted that "as a general rule of thumb, [protected areas] that are unique and expensive to reach should charge a premium fee." Therefore, high fees may be successful revenue-generators.

However, modest fees could generate some revenue and impute value of the resource to users in cases where high fees would discourage visitation. Fees should not be so high that they deter visitation. Fees set between US\$10-20 may not reduce demand for foreign visitors who have traveled great distances and spent substantial amounts of money to get to the park. However, residents may have a much different demand curve and fees may have to be set at low levels (e.g., park stamps, coupons or "early bird specials") to encourage use. In this case, visitor use fees may be insufficient revenue generation mechanisms and may not cover the costs of the protected area. Funding from alternative sources, such as voluntary donations, governmental appropriations, and support from environmental organizations may be necessary.

Revenue retention by protected areas

Recommendations made by Leal (1997) are applicable to fee policy implementation in developing nations. Leal suggests that 95 percent of the revenue collected should stay in the protected area where they were collected. This revenue could be used to fund protected area operations, facilities maintenance, wage increases and research (Lindberg 1991). The remaining 5 percent could go to other protected areas in the system. Managers who spend less than their budget should be allowed to keep all cost savings for the following year. Protected area managers should also have flexibility in raising fees and not need governmental approval to do so. "Tourism will provide little support to sustainable development if the benefits it generates remain in the hands of the tourists, the tourism industry, or the government treasury instead of being channeled back into the park and surrounding communities" (Lindberg 1991). Each protected area should be funded from a share of its own fees and this share should be based on their net income rather than gross income (O'Toole 1999a). O'Toole (1999a) asserts that protected areas funded out of their net income will have increased incentive to maximize their net income and avoid money-losing activities and policies (O'Toole 1999a).

Concessions

Protected area concessions are a potentially powerful revenue generation tool. Managers have the option of choosing from a number of different concession management tools (see Table 26). Protected area managers generally lack the technical expertise, and economic and organizational resources to manage and develop tourism facilities effectively. In this case it is appropriate for protected area managers to lease concessions to individuals or local communities (McNeely *et al.* 1992). Provision of accommodations and services in protected areas may be carried out in various ways. First, concessions can be provided by private construction, ownership and operation of the concession facility (Ise 1961). Competition or regulated monopoly would keep prices down and service quality up in this case. Second, concessions may be provided through government ownership of concession facilities and private sector operations (Ise 1961). Third, protected areas can provide concessions through government ownership and operation. Finally, they can be provided through government ownership and nonprofit operation (Ise 1961). In the U.S., early NPS concession operations were under private ownership and operation (Ise 1961).

TABLE 26. CONCESSION FEE PRICING STRATEGIES

Scheme	Description
Tradeable licenses	Discreet number of transferable licenses issued; overseen by third party.
Auction/bidding for licenses	Competitive, open bidding for permits.
Flat fee	Annual fee derived from gross receipts, operational costs, etc.
Percent of gross receipts	Share of gross income.
Percent of net income	Share of total receipts less operational costs.

Sources: (Shah 1995; Ise 1961; O'Toole 1999c)

Bidding on licenses

Concessions licenses can be issued through a competitive bidding process. This may be impractical when larger competitors apply political and financial influence on the bidding process (Laarman and Gregersen 1996). Historian John Ise questioned the awarding of concessions licenses through competitive bidding. He noted that bidding is unlikely to work well because "it is likely to turn up incompetent, inexperienced, uninterested [people], often without enough capital to carry on the business properly" (Ise 1961). He recommended that concessioners be selected on the basis of "known ability, character and interest in the business" (Ise 1961). Ise also stated that expected income from concessions "ought not to be a governing factor in granting them" and that improved public service and protection and maintenance of protected area resources should be primary objectives (Ise 1961). One concessioner is better than multiple concessioners within a protected area for several reasons. First, cooperation is easier to get from one concessioner than from several (Ise 1961). Second, since there is no stable buying public within the protected area, managers cannot guarantee enough business to keep multiple concessioners in business. In the case of protected area concessions, a natural monopoly the best outcome since a competitive market cannot be supported (Ise 1961).

Tradeable licenses

Shah (1995) presents the interesting idea of tradeable licenses, using the example of cattle grazing permits for protected area buffer zones. Licenses would be transferable among existing users and new users could only enter into business by buying an existing license (Shah 1995). The number of licenses issued would be fixed by an authority although initially it would be hard to determine how many to issue (Shah 1995). This idea can be adapted to include protected area concession services, especially in large tropical protected areas where multiple tour companies may vie for use of protected area resources. Shah notes that the chances of tradeable licenses working is high if a competitive market can develop but he notes that there may be some doubt

about one developing (Shah 1995). However, tradeable licenses have not been tried in developing nations and some experimentation is needed preceding implementation of such a system (Shah 1995). Shah also recommends a third party facilitator to oversee the licensing process, especially to prevent wealthy, monopolistic players from emerging and cornering the market (Shah 1995).

Flat fees

A flat rate for renting a concession service is a commonly used tool. Since the early years of NPS, the flat fee has been the traditional method of charging concessioners, although for some smaller businesses it has been "nominal or very modest" (Ise 1961). The risk of this type of fee is that it must be paid by the concessioner whether she makes a profit or not (Ise 1961).

Flat fees for concessioners have historically been used in the U.S. NPS (Ise 1961). Flat fees can be calculated taking into account gross revenues, operating expenses and net profits (Ise 1961).

Percentage of revenues

In the United States prior to 1950, concessioners paid a percentage of their net profits (Ise 1961). However, after 1950, this policy changed from a portion of net receipts to a portion of gross receipts to avoid complicated auditing procedures required to compute net profits (Ise 1961). Concession fees based on a share of the net income, a concession's receipts less its expenses, would be an equitable method of determining a concession fee. However, this method may be more difficult to compute. Ise recommends that by paying a portion of their net revenues the government would receive as much as a flat fee and the concessioner would be relieved of some of the risk involved because they would only pay when they had net revenues (Ise 1961). When the concessioner is able to cover costs and receive some return on the investment they will in turn have more incentive to improve customer service and management (Ise 1961).

Construction of concession facilities

In the U.S. NPS, after 1958 the maximum term for leases on privately constructed concession facilities was 30 years (Ise 1961). This is perhaps the minimum necessary for a concessioner to amortize his investment (Ise 1961). Ise (1961) recommends that concessioners should have the option of renewal after the lease expires. Many issues arise when concessioners build facilities. For example, if the concessioner builds a facility costing US\$50,000 and when the lease ends 20 years later the same facility could cost US\$100,000 to build. "Should the concessioner be allowed the cost of production or the cost of reproduction?" (Ise 1961). Questions also arise concerning allowances for depreciation and obsolescence of facilities.

Role of local communities

Households near protected areas may incur considerable costs from losing access to resources in those areas (Shyamsundar and Kramer 1996). Some sort of compensation or incentive may be necessary to gain and keep the support of local communities. One way to compensate locals is through protected area concessions. Locals often become the best wardens of the protected area's resources since their livelihood is at risk (McNeely *et al.* 1992). If the private sector can provide protected area support services at a fair rate, private competitive bidding for protected area support functions such as trash removal, security, and fee collection would reduce government-provided support staff and reduce costs (Leal and Fretwell 1997). The use of local businesses to provide protected area support services would also benefit local communities and keep revenues in the region. Revenue sharing, where local communities receive a portion of the revenues generated through visitor use fee systems may be another option for protected area

management. Revenue sharing with local communities' protected area revenues may be insignificant to a national treasury but substantial to a local community. This policy is not widely practiced, as it requires mutual trust between government and community, which is unusual in developing nations (Laarman and Gregersen 1996).

IX. CONCLUSIONS

Overall, visitor use fees are a potent method for protected areas to obtain self-sufficiency, equity and sustainable ecotourism (Laarman and Gregersen 1996). The most beneficial fee system would include fee levels that take into account the operational costs of the protected area and the willingness to pay of protected area visitors. Setting appropriate fees is difficult and controversies will doubtlessly envelop any policy. But protected areas are not costless to provide and user fees provide a legitimate solution to funding (Laarman and Gregersen 1996). The proper fee level will vary according to the each site's characteristics. Protected area managers should consider historical demand and competition with other sites and use these data for fee policy formation (Lindberg 1991). In general, user fees should be raised and can be raised until excess demand disappears (Lindberg 1991). In developing countries, optimal user fees cannot generally be estimated due to the lack of historical data but appropriate fee levels can be estimated and later raised to capture the attraction's value (Lindberg 1991).

Flexibility is a critical element of any fee system. Managers should be able to raise and lower fees according to demand and other market changes. Visitors to developing nations typically are accustomed to paying moderate fees for recreation activities and feel that it is appropriate to pay higher fees than residents to experience pristine protected areas. Finding an appropriate fee level may be the most difficult component when implementing a fee system. Managers must calculate the cost of maintaining and operating a protected area, the opportunity cost of the resource and the possibility that the protected area may reduce the welfare of local residents. Fees should be set based on these costs and the amount visitors are willing to pay at similar protected areas.

Protected areas with high visitation should set fees at the highest possible level, which would serve both to raise significant revenues and manage visitors. Protected areas with low visitation will have a more difficult choice to make. Managers may be forced to set fees at a lower level due to reduced demand on the resource, but could still raise significant revenues by charging moderate fees. Managers may also set fees relatively high due to the high costs of travel associated with the protected area and the high prices visitors are willing to pay to enjoy the area. Protected areas with low fees may have to look towards voluntary donations or governmental appropriations to cover some expenses. In either case, foreign visitors will have a higher willingness to pay. Protected area managers should take advantage of this increased willingness to pay through charging higher fees. Residents and nationals of developing nations should be charged lower fees as they are already paying taxes to the government and they have a lower willingness to pay in general. Protected area managers are not providing a free access recreation opportunity and should provide protected areas in the most economically efficient manner possible. Protected area management based on consumer demand and costs of supplying the commodity is the most logical and economically defensible method.

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