Jonathan Meade

Business Models for Protected Areas

Introduction

The application of private-sector solutions to policy problems in the environmental arena has resulted in the availability of a greater diversity of tools to decision-makers and managers. While this has occurred primarily in the remediation of pollution, such as sulfur dioxide permitting programs (Chertow and Esty 1997), innovative business management tools used to solve conservation or natural resource management problems at the operational level have not traditionally been applied.

Though the use of private-sector management principles in public management of the environment has expanded significantly in the past two decades, innovations in public land management have lagged considerably. The primary innovations have been wide-ranging advances in reserve design, community conservation, ecosystem management, sustainable development, and financing mechanisms (Repetto 1992; The World Bank 1997; Phillips 2000). In concert, much attention has been paid in the scientific community to the specific effects of management decisions on resources at the field level. The result is a focus at either too fine or too large a scale. The functional administrative unit—a park or protected area—has been ignored as the fundamental leverage point for influencing the state of resources in protected areas. In essence, while park managers, particularly in developing countries, have reams of advice for conceptual approaches to various problems (e.g., species and visitor management, water resources, community interaction), there is minimal guidance for developing strategic plans, gaining financing, and identifying priorities for management (Worboys 2001; Thomas 2003). This area of research and scholarship greatly needs expansion.

The administration of protected areas, both newly created and well-established, usually follows a strict, traditional model, defined by foresters and park managers in the United States in the early 1900s (Adams 1993; Clarke and McCool 1996; Sellars 1997). This is not to say innovation does not exist. In fact, many non-traditional management applications exist outside the U.S. where historical trends do not heavily influence contemporary decision-making. The conservation community is becoming more interested in the development of innovative mechanisms for managing public lands that are moving away from the traditional Yellowstone model of national parks. For example, park managers are experimenting with non-traditional approaches to managing hunting, tourism, and wildlife, including being more and more permissive of indigenous peoples living within park boundaries (Bishop, Green, and Phillips 1998).

The problem explored here is a lack of organizational management guidance for park units. This may be due to inadequate funding levels provided by managers at organizational

levels of the federal government higher than National Park Service administrators, or due to deficiencies in park management. By clarifying the alternatives to managing resources at national parks, the use of business models provides for increased success in achieving conservation goals. Employing this private-sector tool can assist park managers in the decision process of scarce resource allocation. These alternative tools, however, must be evaluated through a comprehensive policy analysis process, such as the policy sciences framework. Only through such an analysis can park managers proceed with adequate information and consensus.

Very recent scholarship has begun to help define a modern model of a park or protected area (Mitchell 2003; Phillips 2003). These are critically important as park managers reassess their goals and core values. However, even these newly defined models tend to continue to define parks or protected areas rather than offer a method for identifying a management approach, While they incorporate the most recent principles of resource management, they neglect to incorporate modern thinking in business management. The advent of an innovative public–private partnership in 1998 between the National Park Service, the National Parks Conservation Association (NPCA), and several philanthropic organizations to write business plans for national parks has signaled a new approach to managing parks in the U.S., adjusting the focus from crisis management to forward-thinking, proactive prevention of conflict and crisis (Reinhardt and Huntsberger 2003). From this business planning experience, conceptual development of business models for protected areas arose.

The business models can be used both to describe and prescribe park operations. Park managers can also use these models to identify more precisely the requirements of park operations, to focus those operations, and to improve strategic planning. Use of these models can allow park managers to focus internally on results and performance, and externally communicate mission, vision, operational requirements, and financial needs.

In addition to enhancing management capacity, the application of business models can aid in the development of better national policies for administering the national system of protected areas. While in the past, comprehensive studies of the National Park System have been limited by the diversity of park units, using business model policy studies can go further towards an understanding of functional differences between types of parks and protected areas, and therefore add significant value to future studies when guided by the groupings suggested here.

Methods

Overview of protected areas. The United Nations system for categorizing protected areas, which includes six types, is listed in Table 1 (IUCN 1994). While offering some direction for management, the categories are generally vague in relation to operations, activities, and infrastructure. Much like the National Park Service's principal designations for national park units in the U.S., shown in Table 2, these designations are useful for high-level categorization, but offer insufficient guidance for management and policy decisions. Further, while able to broadly capture the "identity"

Table 1. IUCN categories of protected areas.

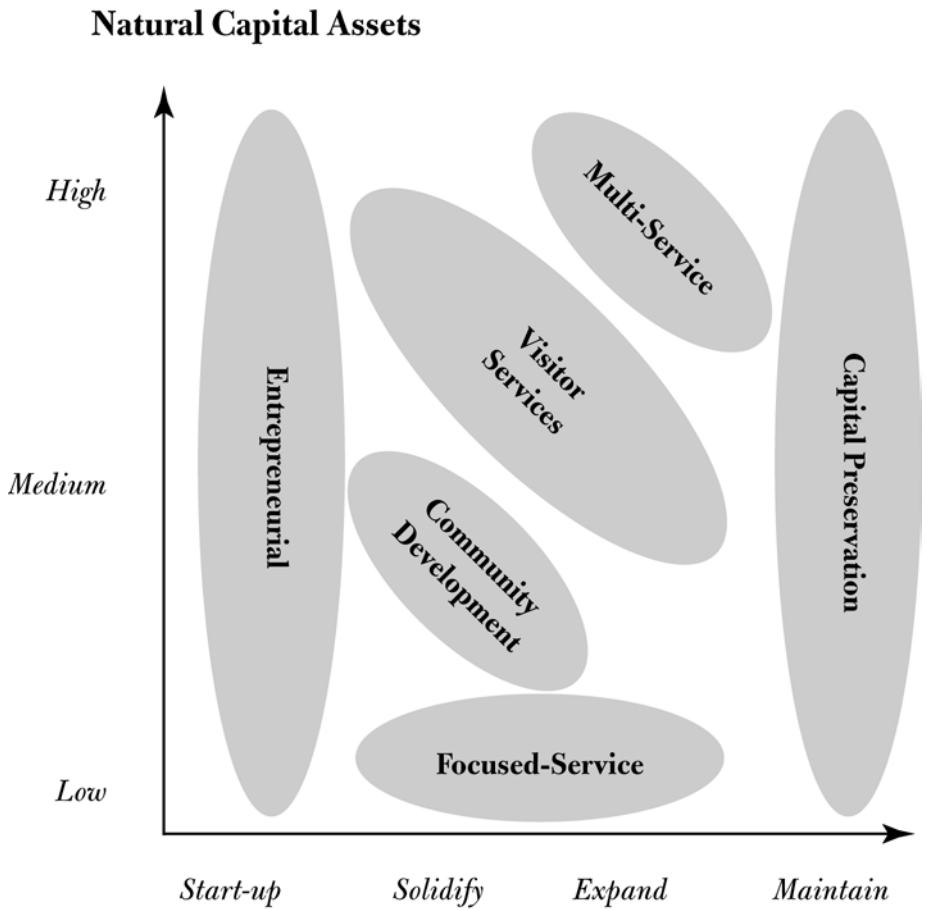

Table 2. Principal U.S. National Park Service unit designations.

U.S. Park Unit Type	Description
National Park	These are generally large natural places having a wide variety of attributes, at times including significant historic assets. Hunting, mining, and consumptive activities are not authorized.
National Monument	The Antiquities Act of 1906 authorized the president to declare by public proclamation landmarks, structures, and other objects of historic or scientific interest situated on lands owned or controlled by the government to be national monuments.
National Preserve	National preserves are areas having characteristics associated with national parks, but in which Congress has permitted continued public hunting, trapping, oil/gas exploration, and other extractive activities. Many existing national preserves, without sport hunting, would qualify for national park designation.
National Historic Site	Usually, a national historic site contains a single historical feature that was directly associated with its subject. Derived from the Historic Sites Act of 1935, a number of historic sites were established by secretaries of the interior, but most have been authorized by acts of Congress.
National Historical Park	This designation generally applies to historical parks that extend beyond single properties or buildings.
National Memorial	A national memorial is commemorative of a historic person or episode; it need not occupy a site historically connected with its subject.
National Battlefield	This general title includes national battlefield, national battlefield park, national battlefield site, and national military park. In 1958, an NPS committee recommended national battlefield as the single title for all such park lands.
National Cemetery	There are presently 14 national cemeteries in the National Park System, all of which are administered in conjunction with an associated unit and are not accounted for separately.
National Recreation Area	Twelve NRAs in the system are centered on large reservoirs and emphasize water-based recreation. Five other NRAs are located near major population centers. Such urban parks combine scarce open spaces with the preservation of significant historic resources and important natural areas in locations that can provide outdoor recreation for large numbers of people.
National Seashore	Ten national seashores have been established on the Atlantic, Gulf, and Pacific coasts; some are developed and some relatively primitive. Hunting is allowed at many of these sites.
National Lakeshore	National lakeshores, all on the Great Lakes, closely parallel the seashores in character and use.
National River	There are several variations to this category: national river and recreation area, national scenic river, wild river, etc. The first was authorized in 1964 and others were established following passage of the Wild and Scenic Rivers Act of 1968.
National Parkway	The title parkway refers to a roadway and the parkland paralleling the roadway. All were intended for scenic motoring along a protected corridor and often connect cultural sites.
National Trail	National scenic trails and national historic trails are the titles given to these linear parklands (over 3,600 miles) authorized under the National Trails System Act of 1968.
Other Designations	Some units of the National Park System bear unique titles or combinations of titles, like the White House and Prince William Forest Park.

of a protected area, they do a poor job of describing the functional niche of a park.

While national parks are the primary focus of this paper, comparison to protected areas managed by other federal agencies (e.g., national forests) and their broad models for land management is both useful and informative. National forests, managed in the United States by the U.S. Forest Service, preserve forested and grassland areas with a mandate for multiple use, including timber harvesting, hunting, fishing, and recreation. The U.S. Fish and Wildlife Service manages the nation's wildlife refuges and generally allows more extensive use than in national park units, but less so than on the national forests. Other land management agencies, such as the Bureau of Land Management and the Bureau of Reclamation, manage sizable portions of the public domain, guided primarily by the concept of multiple use, though they provide far less infrastructure and visitor services than the National Park Service, the Fish and Wildlife Service, or the Forest Service.

As defined by relative priorities for management, national park units are managed primarily for resource protection with significant non-consumptive visitor services, while national forests, Bureau of Land Management areas, and Bureau of Reclamation lands are managed primarily for mixed, consumptive, and non-consumptive uses. Wildlife refuges represent a moderate level of use, with a focus on resource conservation and management, while doing so with less extensive visitor services than at national parks. The models elucidated here may be applicable to non-park protected areas; however, it should be remembered that they were developed specifically for national parks and may need further refinement for other types of protected areas.

There are nearly 400 national park units administered by the U.S. National Park Service, ranging from 137 years to just several months old, from less than 1 acre to 13 million acres. Their budgets range from hundreds of thousands of dollars to over $50 million (National Park Service 2003; Mantell 1990). The diversity is also reflected in the variety of resources protected by national park units, both natural and cultural. Indeed, one of the principles of biodiversity conservation and the design of national systems of protected areas is representativeness: to preserve the best examples of what is left. This diversity of purpose, size, and scope makes management difficult. Yet, it is the mission and vision of the Park Service and of individual park units that drives the variations in business models. Consequently, a singular, uniform business model for all parks or protected areas would not suffice.

It is the statement of purpose, derived from the National Park Service's mission statement, that provides the foundation for park operations. This mission statement is often derived from the park's enabling legislation; separate laws are enacted to create every national park. This legislation, the congressional record of discussion prior to the creation of a park unit, and the general management plan serve as guidelines for overarching management principles for the park. However, these are often far too general to aid park managers executing operational decisions at the field level.

There are many business models in the private sector, but is there one sim-

ple model to serve all park units? The immediate answer is no; the National Park System is too diverse for a simple solution. Still, while every park's enabling legislation (and hence purpose) is unique, drawing parks together in functional groups instead of defining them by types of resources or levels of protection serves to better guide managers through difficult policy decisions. By examining the missions, strategies, and management styles at 60 national park units involved in business planning in the U.S. National Park Service, several business models applicable to national parks, both domestically and internationally, have become apparent. These business models are based on traditional private-sector business models, but employ the principles of public administration to identify elements of revenue streams, markets and customers, and goods and services comparable with the private sector. As Paul Light suggests, nonprofits need not necessarily become more businesslike, but rather better define what it means to be "nonprofit-like" (Light, Light, P.C. 2001). In this case, the business principles best suited to federal land management were adapted for use at the National Park Service. The six described in this paper do not represent the entirety of business models applicable to protected areas; instead, the intent here is to begin a discourse on those which are specifically available for adoption by park managers.

Competitive landscape mapping. Using a private-sector business analysis called *competitive landscape mapping,* the potential "business" of national park units was identified using a crosswise comparison of two factors: resource area and services offered. The competitive landscape approach graphically maps the potential business focus of a company by understanding where competitors focus their business and comparing strengths and weaknesses of several with many factors. Applying this to the public-sector management of national parks is not without difficulty, but the benefits of a greater understanding of park management are important and achievable.

The landscape, described in Table 3, shows how a sample of park units can be distributed according to the resource management focus, here using the six IUCN categories, and the services offered, mapping how they focus their mission and organizational energies. For example, a park with significant sensitive natural resources can provide a variety of visitor services, but should make critical choices about which ones to provide so as to limit resource impacts. Conversely, a park with resources that are resistant to visitor impacts can emphasize visitor infrastructure development and focus on providing visitor services (McNeely, Thorsell, and Lecourant 1992).

Companies can avoid competitors in order to maximize their profits and create successful marketing of their products (Brandenburger and Nalebuff 1996). It is argued here that since units of a national system are intended to be unique representations of nationally important cultural and natural resources, they should avoid overlap in the specific application of their mission and strategy. This relates both to national system planning as well as from individual park perspectives.

In the public sector, the government provides unique services that

Table 3. Competitive landscape for selected national parks in the United States.

	Where Do We Work? ***Park Resources and Level of Human Intervention***					
What Do We Do? ***Functional Niche***	**Category I:** Strict nature reserve/wilderness area	**Category II:** National park	**Category III:** Natural monument	**Category IV:** Habitat/species management area	**Category V:** Protected landscape/seascape	**Category VI:** Managed resource protected area
Frontcountry visitor services	Great Smoky Mountains NP	Shenandoah NP	Devil's Tower NM	Muir Woods NP	Cape Hatteras NS	Lake Mead NRA
Backcountry visitor services	Canyonlands NP	Sequoia-Kings Canyon NP	Hawaii Volcanoes NP	Joshua Tree NP	Olympic NP (coastal unit)	Wrangell-St. Elias NP&P
Wildlife protection and management	Isle Royale NP	Yellowstone NP	Grand Teton NP	Olympic NP	Padre Island NS	Big Cypress NPRES
Ecosystem and watershed protection	Death Valley NP Big Bend NP	Grand Canyon NP Yosemite NP	Badlands NP	Everglades NP	Ozark NSR Voyageurs NP	Redwoods NP
Cultural resource management and protection		Mesa Verde NP	Mount Rushmore NM		Keweenaw NHP Lowell NHP	Golden Gate NRA
Community Development and Interaction	Gates of the Arctic PRES	Acadia NP	Apostle Islands NL	Santa Monica NRA	Cape Cod NS	Delaware Water Gap NRA
Existence value	Bering Land Bridge NPRES		Cape Krusenstern NM		National Park of American Samoa	

cannot or should not be provided by the private sector. Still, park units essentially compete against each other; they also compete with all forms of leisure and entertainment, but this paper focuses on comparing types of nationally administrated protected areas. They compete for funding and visitors, both against each other as well as with other public and private options for recreation and outdoor experience. This can logically be extended to serve as a proxy for private-sector competitiveness, whereby park units should strive to avoid overlapping responsibilities for protecting and preserving the nation's resources. That is, parks should seek to find a niche where few other parks exist, thereby maximizing the representativeness of the National Park System and their own effectiveness. This is essentially the value proposition of park management: providing protection for areas of national heritage (cultural or natural) not found elsewhere. However, the services provided may overlap. This is where the potential for competition and collaboration begins. Parks should provide those services, both visitor-related and resource management, where they are strongest. Parks with competitive advantage in one or both areas should seek to exploit that advantage by focusing management skills and energies.

Of course, parks also benefit tremendously from each other's existence, and should generally continue to support each other through partnerships and resource sharing. Where parks find advantages in partnering, they should do so to improve their overall competitiveness. This occurs often in the private sector and methods for "co-opetition" can be adapted by the public sector (Brandenburger and Nalebuff 1996). The purpose of this paper is not to argue for an antagonistic approach to park management, but rather a concerted effort on behalf of all park managers to specialize their operations, and to do it in a conscientious manner.

Types of Business Models

The business models presented here are not the only models available to protected areas managers. While historically parks have been unable to clearly communicate their primary management focus, particularly in the setting of operational priorities, park managers should not be daunted by clearly communicating their business focus, especially if it is different from the current or historical focus.

A park need not adopt a model with the assumption that it will be in place forever. While long-term ecological stability should always be a high priority, altering a business model, especially when it does not provide adequate direction or hampers goal achievement, is important and natural. For example, the entrepreneurial model would serve a young park well, but could be laid aside in favor of a visitor services model at the appropriate time. Similarly, should important endangered species be discovered, a park might choose to move from a multi-services model to a capital preservation model. Understanding where a park is currently and where it should be moving towards on Figure 1 (described later in this paper) is critical to knowing how best to prepare for future funding and staffing needs. The strategic planning process would ideally inform this aspect of management direction.

Visitor services provider. Using principles of good management, park

managers can provide a diverse set of appropriate tourism-related services, while managing for other objectives as well (e.g., resource protection). As such, the primary focus for managers adopting this model should be providing high-quality visitor services. Success should be measured against the number of visitors and citizens that the park reaches and educates, the quality of these services, and the satisfaction of the visitors.

This does not mean that protecting resources is ignored in management strategies. In fact, the opposite might well be the result, as resource degradation would likely impair tourism, reducing revenues. However, the decision-making focus would be serving visitors and responding to their needs. A primary goal of park managers should be adjusting the level of services to meet changing visitor demands, minimizing emphasis on resource protection and management. At its most extreme, the focused service provider model results in a multiple-use model based on both consumptive and nonconsumptive use of park resources by visitors.

Practically speaking, the visitor services provider model stimulates fee revenue maximization. Higher entrance or user fees and other targeted visitor charges would provide a significant level of revenue, which could then be reinvested in infrastructure such as trails and visitor centers, in order to maximize the visitor experience. Additional reinvestment in interpretive services, signs and information would also enhance the visitor experience, further augmenting the level of business services provided. Critical to success for these types of parks is a consistent, though not necessarily high, volume of visitors. Though a high volume can potentially have a large impact on park resources, visitation that is manageable by park staff can ensure sufficient levels of revenue and exploit economies of scale to both cover costs and provide for reinvestment as infrastructure depreciates and resources are degraded. Consequently, marketing would play a significant role in the attraction and retention of park visitors, and so would be an emphasis area for managers.

The suite of visitor services a park could provide is quite diverse, and includes both frontcountry and backcountry services. Frontcountry services might include a combination of both high levels of park- or concessioner-managed operations, such as formal guided walks, self-directed interpretation, hotels, gas stations, and visitor centers. These are the services most demanded by pass-through visitors—those that stay only a few hours. Park infrastructure should be directed towards ease of access through the park as well as restroom, picnicking, and other day-use facilities. Backcountry services might include wilderness trip planning, travel and weather information, search and rescue operations, and roving or informal interpretation. Infrastructure for backcountry services would focus on trailhead and backcountry camping needs.

The operational costs at parks adopting visitor services provider models—particularly the frontcountry model—can be high due to several factors, including significant infrastructure and concentrated impacts on resources. However, the higher costs are frequently offset by the potential for collecting more revenues (which in turn can be used to mitigate visitor impacts), as well as by the fact that services are concentrated geographi-

cally, reducing overall costs. Frontcountry parks can be very successful if the fee structures are designed to provide for both immediate cost recovery and long-term preservation of park resources. The consequence of neglecting the first is a precipitous decline in visitor services due to deteriorating infrastructure and limited staffing capabilities as funding levels drop. On the other hand, the consequence of not providing for the second is that the impacts on the very resources visitors come to see—the drawing power of the park—will increase to the point that visitors cease to arrive at the park gates. Minimizing the infrastructure costs while focusing on interpretive and other services can offer greater flexibility from year to year.

The ecotourism industry recognizes that visitors come in all shapes and sizes and bring with them a diverse set of interests (McNeely, Thorsell, and Lecourant 1992). Parks adopting a focus on visitor services would do well to identify with one or several of these primary interests in order to better focus park operations. If the park wants to identify primarily with the day-use tourist, visiting for lunch with the family, then an emphasis on frontcountry infrastructure is appropriate. On the other hand, if the park is more interested in providing services for the backcountry hiker, mountaineer, or explorer, then backcountry trails, search and rescue services, and the like are more important. While some parks can succeed at providing both of these types of services to visitors (see the multi-service provider model below), parks that emphasize their strengths and maintain a focus on the long term will succeed more at both managing their operations, and achieving their mission goals.

Multi-service provider. The traditional national park in the United States has been providing a diverse set of services for visitors for over a century (Sellars 1997). In recent decades, the public—and public administrators of national parks—have recognized that additional services parks provide to the country as a whole, as well as services provided by the ecosystem (e.g., watershed protection and air quality preservation), are important and should be emphasized by parks adopting this model. In contrast to the visitor services model, the multi-service provider model is adopted to reach a much broader group of "customers." The multi-service provider does not focus solely on reaching a subset of visitors, nor on all visitors, but rather strives to provide services to visitors and non-visitors, to humans and non-humans, to present and future generations. This broad-based model is one of the most difficult to implement. For example, Yosemite National Park provides services to visitors in frontcountry and backcountry areas, ecosystem and watershed protection services to the surrounding areas, and finally existence value as a World Heritage site. In this broad suite of services, managers must strive for a balancing of priorities and interests. Large parks with well-developed infrastructure can be considered long-term public investments in intergenerational equity. The national, international, and generational importance of the multi-service provider park means that each management decision and action is highly scrutinized, and so managers in turn must be responsive to most, if not all interest groups. Somewhat paradoxically, parks in this category have an

inward focus, and, as a consequence, are usually isolated from the surrounding community—a result of historic biases, a disincentive towards experimentation, and past negative experiences.

Visitor services are necessarily diverse in order to match the nature of the park's visitors. In order to provide such an array of services, parks adopting the multi-service provider model often require large staffs with specialized experience and abilities, as well as significant infrastructure. The nature of the organizational hierarchy further complicates decision-making. The infrastructure required to service large numbers of visitors takes time to develop. At parks that have the necessary roads, buildings, and other structures, maintenance requirements are quite large. In order to maintain the infrastructure in working order, a comprehensive cyclic maintenance program is critical. Unfortunately, most older parks in the United States have failing infrastructure precisely due to inadequate cyclic maintenance programs.

While infrastructure reinvestment is key to maintaining visitor services, reinvestment in natural capital is also important to the viability of the park. This would provide for long-term growth and buffer against ecological instability, incompleteness, resource degradation, and visitor impacts. Reinvestment could take the form of either land acquisition—not always a practicable option for large parks—or through resource enhancement. Land acquisition could take place either within the park or outside the park's current boundaries. There are frequently inholdings of private property within a park, some of which may represent ongoing management challenges. Similarly, resource enhancement could take place either inside or outside the park. Through partnerships with the local community, park managers can provide for a buffer against resource perturbation or degradation; for example, by working to improve wildlife habitat on private property adjacent to the park (Wondolleck and Yaffee 2000). Carefully directed reinvestment in natural capital can provide for stability of the current portfolio of resources, while avoiding the stigma of encroachment on private lands around the park. In the long term, stable resources and environmental systems will provide a better foundation for management decisions about both resources and visitors.

While competition can drive businesses to avoid each other's strengths, natural capital-rich parks can provide a broad set of services without suffering from or being disadvantaged by other parks providing similar services. This comes in part from significant "customer" support at many levels, and from the high-quality "product" that high-profile parks can provide, particularly when the resources at the park are in fact globally unique. Still, this approach is a difficult one to implement at small parks or those where visitor impacts on natural resources would be great.

Entrepreneurial. With the rise and decline of the Internet technology industry, the concept of a "start-up" company has gained national recognition. Newly created businesses, some often still in the conceptual phase, dominated investor attention for several years. The strategic principles utilized to leverage funding and create important, lasting companies can be applied to some park units in similar

start-up phases. The business focus for this model—the start-up model—is to exploit the abilities of a small, flexible staff to respond to visitor needs and operational requirements, while providing for a clear vision of the future of the park.

Newly established national park units might be provided modest start-up investment capital, and even less operational capital to provide visitor services and resource protection. This can generally be attributed to the fact that new parks will usually have low levels of visitation, and hence minimal impacts on resources and demands for services. Exceptions to this trend occur where parks established for specific natural or cultural restoration purposes or when areas with existing operations are transferred to an agency of the federal government (e.g., from BLM to NPS). In the United States, park establishment comes with enabling legislation, from which the mission statement is derived. Despite this fact, the possibility of poorly implementing the park's mission is great. For example, parks created following significant local opposition or other controversy often experience protracted battles with local communities as animosities developed at the outset intensify and fester.

In the United States, few new large natural parks are being established. Consequently, new parks that might adopt the entrepreneurial model are not typically rich in natural capital, but rather more frequently are established to protect specific natural or cultural resources, such as an endemic species. This situation is quite different in many other parts of the world where large parks and reserves are still being established, such as in Madagascar (Ravalomanana 2003) and Gabon (Quammen 2003). As new lands are acquired, new resources are identified, and the mission may even expand. For example, a park may be established through a specific resource acquisition—e.g., purchase of a historic home—with the intention of expanding the resource base to include other buildings nearby. Entrepreneurial parks might choose to adopt a high-growth model, whereby significant investment in infrastructure and visitor services would serve to establish the park physically and socioeconomically. This might be of particular importance in rural or remote areas. Further, the implementation of a high-growth approach might lead directly towards the community business model in the next stage of development, where management policy would focus on a mutually beneficial relationship with the local community. In contrast, a "start small, stay small" approach might also be effective for entrepreneurial parks. Finding a particular niche would allow the park to maintain its presence with less capital investment, and a smaller ecological footprint.

These parks, due in part to their small budgets and limited staff, enjoy virtually no administrative oversight. The park staff functions with an interdisciplinary, can-do focus, frequently working with many collateral duties. One benefit of the start-up business model is that the organizational structure is flexible and potentially more responsive due a smaller staff. This, however, is tempered by the potential for limited diversity of knowledge, experience, or technical capacity.

The most important component of the entrepreneurial model is adequate strategic thinking, particularly with respect to future staffing and invest-

ment needs. Greater innovative funding and management opportunities exist for the entrepreneurial park, but without internal or external reward for these innovations, park managers can fall prey to managing for no net loss.

Running the organization purely on energy can accomplish some goals initially, but long-term thinking is important to focus and refine the management's vision as the park moves into the future. Additionally, a clear vision and strong strategic thinking will allow the park to succeed in the difficult initial years by providing a reinforcing idea of purpose to park staff. This purpose, when clearly communicated to constituents and appropriators, will also ensure the development of strong support for the park. Though many new businesses fail within the first year, a permanent reservation creating a park will not likely be reversed. Still, failures to lay the groundwork for sound management early can hamper the long-term success of the park and its staff.

Capital preservation. While the above models provide for either visitor services as a focus or a multi-faceted approach to providing services, the capital preservation model emphasizes maintaining and enhancing the natural and cultural capital of the park (Lovins, Lovins, and Hawken 1999). While the capital preservation model does not exclude visitor services, resource protection is prioritized above visitor services in all elements of park operations, and consequently must be integrated into decision-making.

"Natural capital" in this context is broadly defined as the park's collection of physical and natural resources that can be utilized by a corporation, agency, government, or individual. While currency is the capital that drives the modern marketplace, natural capital has been offered as the driving force for a newly defined economy, one that incorporates depletion and reinvestment in physical and natural resources. In order to properly value the resource base of a nation, protected areas systems such as national parks should be managed with a clear, uniform understanding of the underlying economy. If the economy to be understood is the public management of lands and resources, then natural capital is perhaps the most appropriate foundation for exploring the how and why of park management as a business. With complicated or non-existent market mechanisms, limited understanding of the economics issues such as non-market valuation of environmental services (e.g., watershed protection of water quality), natural capital provides a single denomination for understanding scaled evaluation of strategic park management in a diverse range of park types. Using natural capital as a basic currency provides an initial focus for why parks are established: (a) to protect unique resources not protected elsewhere, (b) to provide formal protection for resources where currently informally protected, and (c) to acquire important lands and assets for the purpose of restoration. The concept incorporates a paradigm shift from mere production of goods and services upon demand in a traditional market system, to a focus on providing a continuous flow of service or value.

The management of parks with a single focus on natural capital preservation could, in contrast to other models, be considered a pure public good since no consumptive or extractive activities would be permitted (Turner

2002), though most are more typically club goods. [Ed. note: "Club goods" are those provided by a voluntary club to its members. Within the club, consumption of the club good by members is non-rival and non-excludable, but non-members are excluded from enjoying it.] In contrast, visitor services are a private good since they are excludable. A business focus on long-term stabilization and preservation of resources, as well as on enhancing natural wealth, would clearly communicate the priorities of park managers. Often this is possible only when such a clear mandate is provided in the enabling legislation of the park.

As mentioned, reinvestment in natural capital can be a beneficial focus for parks in preserving or enhancing their resources. Some parks that are in need of restoration or management attention may benefit from this approach, while others benefit from a mandate to improve resources degraded prior to designation, and still others may benefit from an approach that proactively strives to prevent further degradation. Above all, the management focus is on preservation, maintenance, and improvement of the stock of natural and cultural capital at the park. Improving or acquiring resources can achieve this. For example, the restoration of an endangered species, such as the reintroduction of wolves into Yellowstone in the late 1990s, would significantly enhance the natural capital stock of a park.

An important concept that managers must adopt in concert with this model is that resources must be managed so they cannot be consumed, degraded, or eroded in quality or quantity. While one dollar can be traded for one dollar in the private sector, it is far more difficult to trade ecological units for others. As such, even replacing land for land, or species for species, can result in a net loss of natural capital. However, where natural resources are exchangeable managers could permit consumption if this improved the natural capital of the park. For example, consumption might be permitted for targeted services if the goal were enhancing a different component of the ecosystem, or to preserve the quality of the entire ecosystem. Prescribed fire and mechanical thinning are good examples of consumption of resources to preserve an ecosystem. This means that managers must prevent both temporary and permanent impacts from infrastructure development, visitor impact, or ecological degradation. Visitor access might further be constrained by limiting broad access to areas of both backcountry and frontcountry. This would be done, for example, to protect an important species during mating season. Maintaining this approach will certainly require significant investment in management, monitoring, and inventorying of species, ecosystems, and ecological variables. Without these, adequate management of park resources cannot be achieved. An adequate inventory must be in place before major decisions are made concerning specific species of ecosystems. Additionally, restoration and research are also important to continuously refine management policies and prevent potential problems from developing. This scientific feedback provides information to policy analysis and development, so that, ultimately, the program's goals can be achieved.

Parks have always been considered important for long-term preservation of natural resources; however, concur-

rent with the rise of the field of ecology, the importance of parks as vehicles for long-term ecological research and protection of natural heritage has been clearly identified (Burger, Ostrom, and Policansky 2000). This research is another programmatic avenue that parks adopting this model can take to forward goals of ecological integrity.

With a specialization in resource protection, preservation, and restoration, parks adopting the capital preservation model may find their revenue availability somewhat limited, particularly due to the reduction in visitor gate and user fee receipts. One approach to offset this consequence would be to more directly link the fee for backcountry use to the protection of various species so visitors could better identify the benefits their potentially higher fees have on park resources. Alternatively, parks could seek funding from communities benefiting from the indirect effect of ecosystem and watershed protection (Wondolleck and Yaffee 2000).

In the competitive landscape, parks adopting the capital preservation model would find substantial room for specialization. An example of this is the jaguar preserve in Belize where tourists come, not necessarily with the hope of seeing a jaguar, but more often to simply be in the presence of them (Eagles and McCool 2002). Parks with a high level of natural capital could benefit from this model by capitalizing on the uniqueness of the park's resources. Marketing themselves as a species-specific park would provide focus for external communications, while not confining or limiting visitation for other reasons, and attracting specialized funding and achieve business goals of preserving resources.

Community development. In its creation and through a long-term relationship, the community park model is designed to have a positive influence on both the local community as well as on the professional development of staff. If there are important ongoing changes in the park or its resources that can be influenced using the appropriate business management practices, adopting this model would mean acknowledging the tight bond to local community many parks have. Currently, few park models identify socioeconomic objectives as an important part of overall management direction (Bishop, Green, and Phillips 1998). Still, greater emphasis is being placed on integrated conservation methods in the developing world, and, to a lesser extent, in developed nations. Further, finance and economic issues are increasingly moving to the forefront of discussions about impacts parks and protected areas have on local communities (Eagles 2003).

This model focuses on relationships with the communities outside park boundaries in order to support the achievement of the park's mission. The more interaction with local citizens, community groups, and businesses, the better integrated the park can be in the surrounding community and the better opportunities for mutual improvement. Principles of sustainable development usually applied to parks and protected areas in developing nations are appropriate to this model. One particular aspect of community interaction that is critical to successful park management with this business model relates to planning (Dixon and Sherman 1990; Machlis and Field 2000). For example, fluctuations in seasonal tourism can greatly affect small towns found near the

entrances to national parks, often called "gateway communities." As such, planning for major park infrastructure disturbances, for example, should be coordinated with the community to help prevent significant loss of revenue. Overall, park managers must reach out not only to local community leaders in order to prevent problems and enhance resource stewardship, but should also involve other federal, state, and local land managers, including specific private citizens, so that impacts to resource protection can be minimized (Machlis and Field 2000).

The interaction with the community can potentially result in arrangements where consumptive use of park resources, such as hunting at a national preserve, are permitted. Including these uses can result from ongoing historic uses or their reinstatement. These are very difficult policy decisions, and so parks with high levels of natural capital—irreplaceable and irreparable features—should avoid consumptive use of park resources, especially if they contradict the park's mission. This model could be successful at parks with moderate to low levels of natural capital where "experimentation" can take place.

With the community model, there are many opportunities for parks to maintain a local or regional focus while providing substantial and high-quality services to visitors. The competitive landscape is open to parks with important but not irreplaceable resources to be utilized to develop relationships with surrounding communities. In general, many park units have failed to develop long-term, productive relationships with gateway communities and regional organizations. Consequently, the opportunity for many newer parks to take chances and explore new ground is ripe for the large number of parks units in the middle range of budget, visitation, and resource availability.

One characteristic of the transformation model is a high degree of flexibility on the part of the staff and management. This is most likely a consequence of a number of factors, but invariably staff at these parks are mid-career or rising stars in the organization, those with a particular interest in improving parks willing to take a chance. The result is that moderately sized parks, not typically in the public limelight, can serve as a proving ground for young park managers. With smaller budgets, and a more flexible staff organizational structure, park mangers can hone their skills with less to lose.

The community park model would be most applicable to those parks with moderate visitation, localized to the state or region, and with relatively modest budgets. While this model would be an option for parks with either cultural or natural resources or both, the important characteristic is that the resources are important to the local community in the long-term.

This model is perhaps the most flexible, and innovative, next to the entrepreneurial model. As such, the options for developing new revenue streams are far greater than with other business models. For example, the myriad of potential partnerships with organizations, schools, and other agencies could be leveraged to either increase funding or shift some of the financial burden of operations to the partner organization. For example, while a local chamber of commerce might help obtain new private donations to be used to develop a visitor

center, a neighboring university might commence research the park requires before making policy decisions.

Focused-service provider. While the models discussed so far have focused on broad management goals and strategies, there are many parks where more specific strategies and objectives are necessary for effective park management. These parks, often small in acreage and visitation, need more specific guidance. Unfortunately, the value of the guidance found, for example, in the park's enabling legislation either becomes diminished over time, thereby stagnating management, or else is insufficiently specific for the development of park operations.

As with any park business model, the primary management goal for focused-service providers should be the long-term stabilization of park resources and revenue streams. However, this is even more important for this model, for two reasons. First, focused-service or niche parks simply are not as competitive for most funding sources, so dependable funding is imperative to long-term preservation of park resources, as well as to consistent visitor services. Second, the missions of focused parks are inherently narrow, so a management approach for the longer term is most appropriate. Still, neither of these factors precludes growth in services, nor a change from a focused business model to a broader one; rather, they reflect a priority being placed on key strengths of staff or a highly focused purpose.

National parks serve the collective good by providing environmental, educational, and tourist services to both visitors and non-visitors, for this generation and future ones. Focused-service parks perhaps embody this principle more than any other business model. The consequence of providing services to a very small subset of the population is that the value of the park is heavily weighted to existence values. Still, managers should focus operational energies on providing for specific requirements of the visitor base.

While the park's resources are important to visitors from the present generation, they are perhaps even more important as representative of intergenerational equity. For example, remote wilderness parks, though attracting only modest visitation, have a purpose rooted in the preservation of a core national value and key elements of our natural history.

Long-term relationships with friends' groups and partner organizations are very important for the focused-service park, but since these parks do not necessarily require substantial amounts of operational funding to run the park, the partnerships do not have to be based on financial relationships. Rather, partnerships with friends' groups can take the form of bartered services, such as interpretation and historic maintenance. These friends' groups can also become tightly linked to membership organizations that support and utilize the park. Strategies for the focused-service park might include development of membership-specific resources and programs. For example, where repeat visitation is significant, the park might choose to create a membership program whereby members would gain additional benefits. With a dedicated and somewhat focused visitor base, these parks draw consistent visitation, but are not likely to experience significant growth or expansion. Other parks that could benefit from adopting this model

include small sites located near cities or town centers. By definition, the focused-service park protects and interprets very unique resources.

Revenue streams might be limited due to specialization, but competition is also limited for the same reasons. If competition is limited, the focused-service park might be presented with funding options not available to other parks. However, focused-service parks may find themselves poor competitors for the larger, more traditional funding sources, particularly government appropriations. For example, a small park with high local but low national visibility might be an excellent competitor for donations from local citizens interested in the relevance of the site to local natural history, while simultaneously be a very poor competitor for a national funding source.

When viewing the competitive landscape, similar conclusions can be drawn about overall competitiveness. With potentially very high levels of natural capital, focused-service model parks may compete well for specialist visitation and funding, but poorly for long-term capital development from central offices.

Comparison of Models

The several models discussed above represent only a few potential directions that park managers can take in orienting park operations. Each park, with its uniquely determined establishment, must choose how best to serve the public interest. Models can be changed, adapted, set aside, and renewed. While the multi-service provider and visitor services provider models provide a framework for well-developed parks to consider a broad suite of services to be delivered to an equally diverse group of visitors, the focused-service, community development, and entrepreneurial models provide business frameworks for parks with a far narrower focus. The entrepreneurial and the capital preservation models, while not divergent from current (though unstated) management approaches at many national parks, represent an identification of a specific focus, not narrowed by the type of services as mentioned above, but rather by the time horizon: short for the entrepreneurial, long for the capital preservation model.

In Table 3, several parks are mapped according to business services and the resources protected using the IUCN classification of protected areas. This table is functionally a competitive landscape, a tool frequently used in the private sector to identify how and where a business should operate in relation to its competitors. By comparing the types of protected area—mission, objective, or management focus—to the types of services offered, the relationship to other protected areas can be identified. This could also be done using the set of U.S. park designations or other groupings. The goal is to better understand where the park can best succeed. Table 4, a comparison of the various business models offered here, was largely derived from examining Table 3 and Figure 1.

In Figure 1, the several business models are mapped according to natural and traditional capital (financial) assets. The location of models can be used to better understand the requirements of a type of park, as well as the best possible combination for success. Tracking along the development stage axis gives an indication of the level of organizational growth, and, to a certain extent, financial resources

Table 4. Description of business models for national parks.

Business Model (example)	**Mission Element**[i]	**Natural or Cultural Capital**	**Business Focus Value Proposition**	**Market Opportunities**	**Revenue Source**	**Budget**	**Visitation**
Visitor Services (Shenandoah NP)	Visitor services	Cultural	Offer visitor services and well-developed frontcountry infrastructure; alternatively provide destination tourism services	Ecotourism National / Int'l focus Family vacation Moderate growth	Base funding Fee revenue Concessions	$3M to $30M	Up to $3M
Multi-service Provider (Yosemite NP)	Both	Both	High profile, crown jewels; long-term protection and visitor services; high degree of infrastructure, significant pressure to preserve resources intact	National / Int'l focus Congressional committees Low growth	All	$10M to $30M	Up to $3M
Capital Preservation (Everglades NP)	Resource protection	Either or both	Protect resources from degradation, restore damaged resources, long-term research opportunities	National / Int'l focus Ecotourism Destination tourists Environmental NGOs Low to moderate growth	Base funding Project funding Donations Grants	$1M to $8M	Less than $500K
Focused-Services (Isle Royale NP)	Either	Cultural	Provide adequate, but limited visitor services to target market; protect specialized resources	Local, regional or national Limited to specialty groups Low growth	Base Funding Donations	<$2M	
Entrepreneurial (Marsh-Billings-Rockefeller NHP)	Either	Either	Immediate protection of resources; long-term development of visitor services	Local partnerships High growth	Base funding Project funding Donations	<$1M	Less than $100K
Community (Lowell NHP)	Both	Either or both	Sustainable development with high degree of integration within local community; administrative proving ground for NPS staff	Local & regional Moderate to high growth	All	$1M to $5M	$250K to $1M

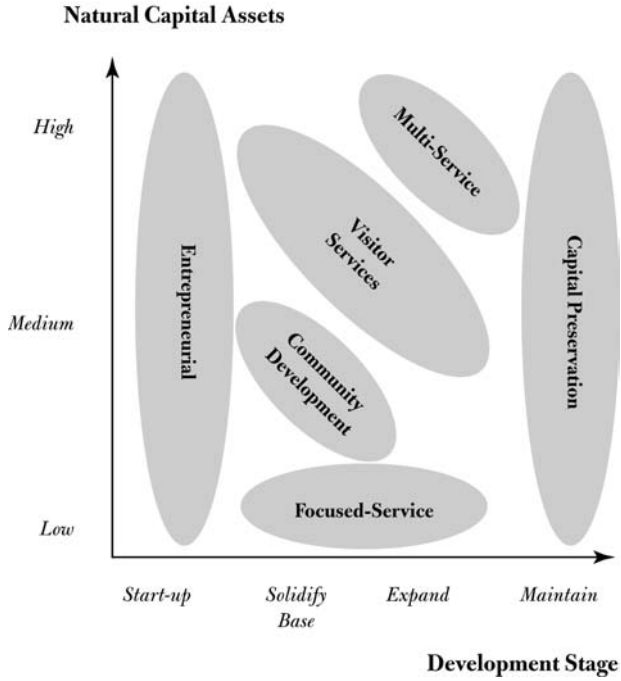

Figure 1. Graphical representation of six business models and the relationship to natural capital and stage of business development.

required for management. The natural capital assets—species, ecosystems, watersheds—vary among parks, and should be positively factored into management approaches. While some parks should be inviolate reserves, many can accommodate modest levels of infrastructure development. Openly addressing what level of "quality" the resources of a protected area should be at can be a healthy and necessary process for park managers.

Adopting Business Models

Choosing the right business model is a critical step towards effective park management. It should take place prior to major management decisions, though this may not be possible at all parks. The choice of business model should involve stakeholders from both inside and outside the park, including core staff, local community representatives, and others. However, it must be remembered that as a national park, the business model must fit the needs of the National Park Service and serve the interests of the nation.

There are many paths to take in order to choose the right business model. No single method is suggested here. However, there are many factors to consider, including enabling legislation, mission, visitor carrying capacity, infrastructure capabilities, revenue and funding expectations, and staff capacity. Carefully evaluating each of these, and deciding on a model will allow park managers to face difficult policy and management decisions with the support of a vision for the role of the park. Ultimately, this role is defined by the method by which managers feel they can be succeed, be it in terms of providing visitor services, ecological services, or community

services.

One important step to take before adopting a business model is the evaluation of both the customer base, or in this case a stakeholder analysis, and subsequently, a competitive landscape analysis. Finally, the park should evaluate its current and potential areas of strength—that is, what it is that the park does well.

Parks that would benefit from applying the visitor services provider business model include those with significant, consistent levels of visitation. The high levels of demand offer stability, particularly if funding were more intimately tied to fee receipts. This model is also appropriate for parks established with a particular focus on visitors. At the opposite end of the spectrum is the capital preservation model, focused more clearly on resource protection. In short, the choice between these two is a choice not between visitors and resources, but which has higher priority when conflict arises.

The multi-service provider model attempts to strike a balance between these two extremes. It is most appropriate for those parks with a wide variety of options for visitor services, as well as significant natural and cultural resources. These parks will need substantial funding, owing to infrastructure and the high cost of resource management. Yet fee revenues from visitor and gate receipts is often an option for supplementing basic funding. With a diversity of services, managers should attempt to exploit a range of revenue sources to enhance stability and long-term reliability. High visibility can aid competitiveness for these funding sources from both appropriated and non-appropriated sources. Parks adopting this model can also focus on enhanced visitor fee receipts through balanced and appropriate fee structures. Managers should, however, be cautioned against adopting this model as a "safe" choice; it is not safe, but rather the most difficult to implement. The focused-service provider, on the other hand, offers specific visitor services that, while not limited in scale, are limited in scope. Focused-service providers do only a few things for visitors, but do them very well. Some examples might be a park that offers only alpine mountaineering services. Management would focus on meeting the needs of this very specialized group.

Parks that might benefit from the entrepreneurial model include small, newly established parks that can exploit a wide variety of revenue models simultaneously, as well as leverage multiple skill sets from a limited number of employees. Those able to take chances and experiment with different approaches are able to adopt this model with success; however, this model demands flexibility in staff capabilities and attitude. Still, well-established parks can also benefit from this kind of approach if the leadership is able to motivate staff to take chances, and if the political environment is amenable to experimentation and a "non-traditional" style.

The community model might best be identified with the current trend towards community-based conservation. While more frequently implemented in developing nations, community-based conservation certainly has a place in developed nations' protected areas. Park managers most interested in extended relationships with community organizations and members would do well to bring them into the decision-making process as

soon as possible. Allowing external parties to gain buy-in can prevent larger problems down the road. Indeed, with the rising focus on collaboration in conservation, currently this model is perhaps the most popular. However, the community-based model is not without its limitations, and parks without the opportunity for innovative experimentation should approach it with caution, as is also the case with the entrepreneurial model. This is not to say that parks with sensitive resources or endangered species cannot embrace this model. Rather, by extending decision-making to non-park staff, managers must more fully balance priorities and interests outside park boundaries.

The capital preservation model's focus on preserving resources lends itself to implementation in remote wilderness areas, or those where visitor services would not be expected to be extensive. Those parks with very sensitive or irreplaceable resources might also benefit by clearly focusing on enhancing them through restoration or species recovery.

Summary

While there are many business models available to park managers, almost no parks are currently employing a model to help direct their operations. Instead, managers rely on singular adherence to the National Park Service's mission, which, while important and effective in guiding the agency as a whole, does not give managers enough guidance in prioritizing operations, policies, and activities on a daily basis. Aligning strategic park management to the business models outlined here, and perhaps using a business plan to do so, would aid managers in clarifying operational focus and achieving mission and strategic goals.

By choosing a model, a clear vision for the business services to be provided can be offered by managers to employees, the public, and other stakeholders. Still, adopting a business model for a national park or protected area does not preclude changing that model at a future time; many businesses do just that as they enter new phases of development. Figure 1 demonstrates that as protected areas develop their natural and capital assets, they may need to change their business model in order to better compete. Broader strategic planning incorporating local, regional, and national constituent groups could be used to periodically adjust park management in new directions.

The information presented here is useful to both developed and developing nations; however, developing nations would benefit from greater exploration of a national business strategy or a national system of protected areas (including identifying the mission and vision for the managing agency) before embarking on business management approaches for individual parks and protected areas. This would clarify the purpose of a national system of protected areas, preventing the piecemeal cobbling together of parks of disparate types and missions.

There are several elements of adapting business principles to national parks that were not explored in depth here, but an understanding of which is critical to the overall evolution of protected areas management. First, the models outlined here were developed primarily with national parks in mind. Other protected areas where more intensive consumptive activities are permitted might find

these models too limiting, and so more work on the development of additional business models for these types of protected areas may prove useful. Other models would have to consider the nature of the use of public goods by subsets the population (e.g., timber company salvage permits) as it relates to the balanced provision of services to a potential "market." In this regard, research on types of resource extraction on public lands would be useful to help guide the development of other business models for protected areas.

Second, a further exploration of partnership models could prove useful to some protected areas where joint management by a multi-agency organization exists, particularly in situations where management direction is provided both by government and nongovernmental actors. In addition, revenue models are generally limited in developed nations to in-country sources, but even so there are diverse funding outlets for national parks. The primary limitations for U.S. national parks are federal restrictions on soliciting donations from individuals or corporations. This simple fact makes a friends' group a virtual necessity. While the National Park Foundation serves to coordinate much of the interaction between park units and the philanthropic community, there are significant outlets for additional funding development locally and regionally.

References

Adams, D.A. 1993. *Renewable Resource Policy: The Legal-Institutional Foundations.* Washington, D.C.: Island Press.

Bishop, K., M. Green, and A. Phillips. 1998. Models of national parks. *Scottish Natural Heritage Review* 105. (Perth: Scottish Natural Heritage.)

Brandenburger, A., and B. Nalebuff. 1996. *Co-opetition.* New York: Doubleday.

Burger, J., E. Ostrom, and D. Policansky. 2000. *Protecting the Commons: A Framework for Resource Management in the Americas.* Washington, D.C.; Island Press.

Chertow, M., and D.C. Esty. 1997. *Thinking Ecologically: The Next Generation of Environmental Policy.* New Haven, Conn.: Yale University Press.

Clarke, J.N., and D.C. McCool. 1996. *Staking Out the Terrain: Power and Performance Among Natural Resource Agencies.* Albany: State University of New York Press.

Dixon, J.A., and P.B. Sherman. 1990. *Economics of Protected Areas: A New Look at Benefits and Costs.* Washington, D.C.: Island Press.

Eagles, P.F.J. 2003. Emerging trends in park tourism: the emerging role of finance. *The George Wright Forum* 20:1, 25–57.

Eagles, P.F.J., and S.F. McCool. 2002. *Tourism in National Parks and Protected Areas: Planning and Management.* Wallingford, U.K.: CABI Publishing.

IUCN. 1994. *Guidelines for Protected Area Management Categories.* Gland, Switzerland: IUCN.

Light, Light, P.C. 2001. "Nonprofit-like": tongue twister or aspiration? *Nonprofit Quarterly* 8:2.

Lovins, A.B., H.L. Lovins, and P. Hawken. 1999. A road map for natural capitalism. *Harvard Business Review* (May–June). Reprint no. 99309.

Machlis, G.E., and D.R. Field, eds. 2000. *National Parks and Rural Development: Practice and Policy in the United States.* Washington, D.C.: Island Press.

Mantell, M.A. 1990. *Managing National Park System Resources: A Handbook on Legal Duties, Opportunities, and Tools.* Washington, D.C.: The Conservation Foundation.

McNeely, J., J. Thorsell, and H.C. Lecourant. 1992. *Guidelines: Development of National Parks and Protected Areas for Tourism.* UNEP-IE/PAC Technical Report series No. 13. New York and Madrid: United Nations Environment Program and World Tourism Organization.

Mitchell, B. 2003. International models of protected landscapes. *The George Wright Forum* 20:2, 33–40.

National Park Service. 2003. *Budget Request Fiscal Year 2004.* Washington, D.C.: National Park

Service.
Phillips, A. 2000. *Financing Protected Areas: Guidelines for Protected Area Managers.* Best Practice Protected Area Guidelines Series no. 5. Gland, Switzerland: IUCN.
———. 2003. Turning ideas on their head: the new paradigm of protected areas. *The George Wright Forum* 20:2, 8–32.
Quammen, D. 2003. Saving Africa's Eden. *National Geographic* 204:3, 50–75.
Ravalomanana, M. 2003. Address of Madagascar President Marc Ravalomanana to the Fifth World Parks Congress, Durban, South Africa.
Repetto, R. 1992. Earth in the balance sheet: incorporating natural resources in the national income accounts. *Environment* (September), 13–45.
Reinhardt, F., and B. Huntsberger. 2003. National Parks Conservation Association. *Harvard Business Review,* N9-703-045.
Sellars, R.W. 1997. *Preserving Nature in the National Parks: A History.* New Haven, Conn.: Yale University Press.
Thomas, L., and J. Duff. 2003. *Guidelines for Management Planning of Protected Areas.* Best Practice Protected Area Guidelines Series no. 10. Gland, Switzerland: IUCN.
Turner, R. 2002. Market failures and the rationale for national parks. *The Journal of Economics Education* 33:4, 347–356.
Wondolleck, J.M., and S.L. Yaffee. 2000. *Making Collaboration Work: Lessons from Innovation in Natural Resource Management.* Washington, D.C.: Island Press.
Worboys, G., M. Lockwood, and T. De Lacy. 2001. *Protected Area Management: Principles and Practice.* Melbourne: Oxford University Press.
The World Bank. 1997. *Five Years After Rio: Innovations in Environmental Policy.* Environmentally Sustainable Development Studies and Monograph Series no. 18. Washington, D.C.: The World Bank.

Jonathan Meade, National Park Service, Office of the Comptroller, 13461 Sunrise Valley Drive, Herndon, Virginia 20171; jon_meade@nps.gov