

Basic Components of Public Use in Natural Protected Areas

Larry Lechner, Jim Barborak, Ryan Finchum, George Wallace, Peter Newman and Jim Wurz

Abstract: Protected Areas are under increasing pressure to demonstrate tangible economic benefits in addition to conserving biodiversity, natural landscapes and sites of cultural significance. Public use of PAs now has a more central role in conservation planning and management as areas are promoted for ecotourism and recreation. This will result in even greater pressures on management authorities and increased threats to PA resources. Fortunately the emerging science of visitor management is providing tools that can help maximize the benefits of public use and allow for the management of negative impacts.

Introduction

Protected Areas (PAs) are under increasing pressure to demonstrate tangible economic benefits in addition to conserving biodiversity, natural landscapes and sites of cultural significance. The Convention on Biological Diversity, ratified by almost all countries, has as one of its three goals the equitable distribution of costs and benefits of biodiversity conservation. Ecosystem services such as watershed protection, carbon sequestration and direct benefits such as income and employment opportunities are now central to most conservation programs. It is significant that the central theme of the most recent World Parks Conference in Durban, South Africa was “Benefits Beyond Boundaries.” At the same time, the CBD, through its Programme of Work on Protected Areas, specifically requires countries to prepare sustainable funding strategies for their PA systems. Thus, it should be no surprise that public use of PAs now has a more central role in conservation planning and management, and nature-based tourism as an income producing activity (for countries, local communities and PA management authorities) is now a central management objective in most PAs. An additional objective of public use is the creation of constituencies to support conservation by providing visitors with high quality experiences that demonstrate the value and importance of PAs. Unfortunately, attention to the provision of quality experiences, the development of needed infrastructure, concessions management, and implementation of good practices in design, construction and management of tourism infrastructure to reduce and mitigate impacts due to tourism development are still in their infancy in many protected area systems. Appropriate governance mechanisms and staff capacity to ensure educational, enjoyable, and safe experiences for the growing numbers of visitors to protected areas around the world, are also incipient in many areas.

For the purpose of this discussion public use will be limited to tourism, recreation and environmental education in Protected Areas. While other forms of public use such as scientific research, extractive uses, traditional use and religious use all require specific management programs, many of the components discussed in this presentation are applicable to managing these uses.

Public use planning has evolved considerably over the past 60 years. The central focus of early public use planning was providing recreational activities such as hiking, camping, boating and hunting in natural areas. Trails, campgrounds, visitor centers, lodging and boating docks were planned by either local managers or regionally and then constructed so as to allow access and facilitate recreation. The public use section of a management plan was often of secondary importance with an emphasis on activities and access rather than impact management, visitor experience or the public as a potential partner in the planning process. Today, virtually all governments and international donors require some form of public use planning in conservation

the authors are members of the Center for Protected Area Management and Training, Colorado State University, Ft. Collins, CO

projects and great strides have been made that aid PA managers, tourism providers and local communities.

Components of Public Use Planning.

There are a wide variety of frameworks that integrate public use planning into the wider PA planning process. The actual details of public use planning often vary from one land management agency to another and from country to country. The quality of the integration of public use planning and biodiversity conservation planning is directly related to the level of importance given to public use. Good public planning at all levels will include the following components:

- a clear understanding of the management objectives of the natural area in which public use will occur;
- data collection and evaluation relating to the visitors, such as recreation activity preferences, age, origin, length of stay, motivations, etc.;
- an inventory of existing conditions in and around the PA where public use will occur that identifies recreation opportunities and any constraints that exist in the development of such activities;
- community and stakeholder participation in planning and implementation of the plan;
- appropriate infrastructure development that is based upon an understanding of the available recreation opportunities, zoning and the needs of visitors who engage in those activities;
- an emphasis on visitor experience rather than simply developing activities for visitors;
- Strategies that seek to maximize high quality visitor experiences such as adaptive management (i.e., Limits of Acceptable Change), zoning (i.e., Range of Opportunities for Visitors to Protected Areas) that include monitoring public use based upon indicators and standards that protects resource and visitor experience quality;
- A strong focus on high quality interpretive and educational programs for PA visitors
- A financial strategy that ensures that revenues and income streams can cover the costs of building and maintaining infrastructure, programs and staff to implement and sustain the public use program
- A clear strategy on governance mechanisms and roles of key institutions, including government agencies at all levels, local communities, NGOs, academia, and the private for profit sector in implementing the public use program.
- Policies legally enabling concessions management and a sound concessions management sub-plan developed with stakeholder participation.

A clear understanding of the management objectives of the natural area in which public use will occur: Most natural protected areas are designated to preserve significant biodiversity, geologic or cultural features. Public use for tourism and recreation is also an objective in many areas. Good planning for public use begins with a clear understanding of the objectives of an area and how public use and resource protection are related. In areas where the objectives are for strict resource protection such as IUCN Category I and II resource protection will have normally have priority over public use. In other areas resource impacts remain an important consideration but higher levels of impacts may be acceptable. The key here is to make sure that public use development is compatible with resource protection.

Data collection and evaluation relating to the visitors, such as recreation activity preferences, age, origin, length of stay, motivations, etc.: All planning is data driven and planning for public use requires both biophysical and social data. Biophysical data such as land forms, drainage

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patterns, species composition and behavior will influence infrastructure design and scale and reveal recreational opportunities and outstanding characteristics that an area may offer. Biophysical data will also reveal constraints that may limit use in some areas due to the presence of sensitive species, habitats or cultural sites. Social data such as visitor demographics, preferences and motivations are necessary to match levels, type and scale of infrastructure to visitor preferences. User profiles, questionnaires, interviews and observation of visitors and of tourism sector entrepreneurs are all important tools that provide information to planners and managers. Equally important data relating to the local communities surrounding the PA relating to their receptiveness and capacity for tourism.

An inventory of existing conditions in and around the PA where public use will occur that identifies recreation opportunities and any constraints that exist in the development of such activities: Closely related to the data collection process, an inventory of the area in and around the PA is essential for understanding the on-the-ground conditions that exist and the opportunities for visitor experiences that may be offered as well as possible strategies for overcoming constraints and building capacity. An on-site study or site analysis may actually begin off-site with a review of relevant historical data, maps and other available information that will inform the site visit activities. Spending adequate time in the area to truly understand the sense of place and biophysical and cultural aspects that make the site unique provides information that will form the basis for many decisions about the feasibility of public use programs. A first-hand understanding of the setting characteristics is especially important for infrastructure designers and planners so that local conditions are reflected in final designs. Designers and planners must also understand the conservation and public use zoning for the particular site where development will occur. Roads, trails and waterways may cross several zones requiring different design parameters for each zone. For example, a waterway may begin in an urban area, pass through a rural setting and terminate in a remote primitive site whose conservation and recreation objectives seek to maintain a highly natural setting with little evidence of human presence. The use of a motorized boat and larger groups may be appropriate in the first two zones but not be appropriate in the pristine area, requiring a change of transportation and reduced group size.

Community and stakeholder participation in planning and implementation of the plan: Historically, public use planning tended to be “top down” with agency planners or consultants determining every element of the public use program from “carrying capacity” to campgrounds and trail locations. The results, for the most part, were, and continue to be, less than optimal with this planning approach. Mismatches in the scale, style and type of tourism development often result and there is a tendency for over development in many cases. Good public use planning requires input from communities in and around the PA to understand community support, understand recreation opportunities and capacity for the proposed activities. This type of public involvement is often time consuming and difficult but absolutely necessary. Additionally, other stakeholders such as potential concessionaires, tourism operators, visitors to the area and, most importantly, area management and personnel including rangers must be involved in the planning process.

Appropriate infrastructure development that is based upon an understanding of the available recreation opportunities, zoning and the needs of visitors who engage in those activities: Some level of infrastructure development is necessary for public use. Roads, trails, visitor centers, interpretation, communication networks, water and sanitation facilities are but a few of the basic infrastructure elements that must be planned, designed, developed and maintained. Unfortunately, most natural resource planners have little understanding of appropriate design, size and scale of infrastructure. Maintenance and operational costs are rarely considered. Infrastructure development has the potential to promote conservation objectives when carried out at a scale that

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is appropriate to those objectives; however in many cases incompatible infrastructure compromises conservation objectives by altering natural ecosystems, increasing use levels beyond management capacity and incurring operational and maintenance costs that deprive other important management programs of adequate financial resources. Equally important is the development of infrastructure that is compatible with visitor preferences. The ROS/ROVAP planning framework has been developed to guide public use planning and appropriate infrastructure through the use of a zoning system that emphasizes the management of setting characteristics (the biophysical, social and managerial attributes of a particular site) so that visitors may have the opportunity for a particular type of recreational experience. Clearly developed standards for infrastructure elements such as design elements, colors, building heights and materials and locations are important to maintain setting characteristics and visitor expectations. Individual PAs and PA systems must strike a balance between a uniform identity throughout the system and flexibility demanded by a wide variety of setting characteristics that will require varying levels of development. The need to manage development size and scale so as to be appropriate to the setting does not stop at the PA boundaries. PA managers must work actively with local governments to control development elements, size and scale around the PA as well as within. Communication and working agreements with local and regional land use agencies to ensure good destination-level planning is often the most effective tool for tourism development for both the PA and those agencies.

An emphasis on visitor experience rather than simply developing activities for visitors: Initially, public use planning focused on developing recreational activities such as camping, hiking, interpretation, rafting and wildlife viewing for visitors with little understanding or regard for visitor preferences and needs. Extensive research has demonstrated that visitation to natural areas is more complex than simply engaging in particular activities in a natural setting. Driver and others have shown that the visitor experience consists of (a) visitors engaging in activities that (b) occur in settings that have biophysical, social and managerial attributes that influence (c) the experience that the visitor has and that the experience, when realized, provides (d) social and personal benefits. The understanding that setting attributes play an important role in the visitor experience means that planners must give use greater care in understanding visitor preferences and develop infrastructure that is compatible with those preferences. The US Forest Service developed the Recreation Opportunity Spectrum (ROS) as a method of preserving the opportunities for recreation experiences a particular zone in an area may offer. This system has recently been updated adapted specifically for use in Latin American PAs and renamed Rango de Oportunidades para Visitantes de Áreas Protegidas (ROVAP) and is now available in Spanish. ROVAP is designed to function in conjunction with the conservation zoning plan for an area and seeks to balance recreational and tourism use with conservation objectives so that both objectives can be maximized. ROVAP can and should be applied as a continuum zoning plan that functions beyond the borders of the PA and integrates with municipal and regional planning to create and maintain experience opportunities by maintaining the integrity of settings.

Strategies that seek to maximize high quality visitor experiences such as adaptive management (i.e., Limits of Acceptable Change) and zoning (i.e., Range of Opportunities for Visitors to Protected Areas) that include monitoring public use based upon indicators and standards that protect resource and visitor experience quality: Successful management depends on an understanding of what is happening on the ground and the flexibility to act when conditions require action. Adaptive management frameworks such as Limits of Acceptable Change, Visitor Experience and Resource Protection and Visitor Impact Management, when correctly implemented, provide a framework for management that is responsive to public use of natural areas. Adaptive management involves monitoring indicators that reflect change in the resource and social conditions within an area. Standards that relate directly to the indicators are developed

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for each indicator and provide a way to evaluate the indicator that is objective and clearly defined. By comparing the status of the indicator to the agreed-upon standard, judgments can be made about the current conditions and actions taken as necessary to maintain and/or improve conditions. Monitoring needs to be programmatic and carried out in an iterative and systematic program by rangers, volunteers or by personnel specifically trained in monitoring. Monitoring does require time and resources and financial and personal resources necessary for monitoring and evaluation must be clearly spelled out in any adaptive management strategy.

For example, a trail condition indicator may be the percentage of trail edge that does not allow adequate drainage and the standard may be not more than 15% of any monitored segment with inadequate trail edge blockage. In the case of a trail this would be one of several indicators necessary to understand how the trail is functioning. Social indicators would also be included. Examples of social indicators would be litter, conflicts, accidents, crowding, incidents of criminal activity, etc. Management indicators could be the number of visitor contacts, fuel costs, miles of trails patrolled, etc. It is important to develop indicators that are specific to the area and that there is capacity to monitor and evaluate those indicators. The personnel required and frequency of monitoring and will be also depend upon the specific site conditions and resources.

Good indicators have the following characteristics: a) relatively to measure; b) reflect issues that management can affect; c) reflect change that is the result of visitation; d) relate to the objectives of the area and the public use plan. Indicators that are too general to reflect visitation impacts are of little value because they may reflect changing resource condition that is the result of natural processes or conditions other than public use. For example, the presence or absence of a particular species is a problematic indicator because many conditions such as available food supply, rainfall, reproduction success or failure, etc. may influence population size rather than the presence of visitors.

A strong focus on high quality interpretive and educational programs for PA visitors

Environmental education is one of the most important tools for biodiversity conservation. Environmental education and interpretation programs, especially when occurring in a PA setting, have the potential to educate the public about the values and objectives of an area. People are more willing to protect what they know and value and these programs provide the basis for building new constituencies. Education programs should be targeted to visitors and tourists of the area and developed with a clear objective and target audience. Many programs fail to adequately include and address local communities and populations. By targeting local communities, especially the younger members of those communities, the PA can improve relations, promote understanding and build constituencies that include future generations of users and potential neighbors.

A financial strategy that provides for development and maintenance of infrastructure as well as programs and staff to implement and sustain the public use program: There are a variety of costs and expenses involved in planning, developing, operating, monitoring and maintaining public use programs. Even the most basic public use will involve some level of infrastructure and patrolling. Regrettably, there is a tendency to focus on the development of infrastructure and programs without adequate consideration of the operational and maintenance cost implications. Although this is especially true with international development funding, PAs worldwide suffer from inadequate maintenance. The maintenance backlog of the US Park Service is estimated to be five billion dollars and, unfortunately, is increasing. If an area cannot clearly demonstrate how infrastructure and programs will be operated and maintained for a minimum of three years the programs should be given very careful consideration before implementation. The financial strategy must also insure that any new development will add to management capacity rather than strain existing capacity. Problems often arise when scarce resources are diverted from existing programs to maintain and operate new programs and infrastructure. For example, a new

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interpretation program may require guides, pamphlets and signage along a new or existing trail. Will there be enough resources to hire new guides or will rangers be required to add this new duty to their already full work load? Who will maintain the signs and update them during the coming years? Will the potential increase in visitation require other new facilities like bathrooms or parking areas? The financial and management implications of all new public use programs must be fully understood or the negative impacts from poorly maintained infrastructure could be greater than the initial costs of the program. In Pico Bonito National Park, Honduras, a newly build visitor center collapsed and fell into the nearby river because it was poorly planned and there were no funds to maintain the building once it was completed. The result was a loss of the original investment plus the substantial costs of cleaning up the destroyed building and surrounding area. Similar situations are more common than most of us are willing to recognize.

A clear strategy on governance mechanisms and roles of key institutions, including government agencies at all levels, local communities, NGOs, academia, and the private for profit sector in implementing the public use program: Protected Areas require not only clear legal declarations that include the specific objectives of the PA but also the legislative and regulatory framework that provides the institutional framework for management. These arrangements are by nature complex because the usually involve a number of agencies and ministries and spell out issues of jurisdiction, financial arrangements and funding mechanisms, relationships between public and private entities, responsibilities at the site, municipal, state and national levels to name a few. Legal issues for law enforcement and prosecution of offenders, including penalties for offenses must be clearly established. In areas where NGOs, communities and volunteers are involved in planning, operation or maintenance responsibilities for liability, funding, transfer of funds and authority for all activities by all parties must be clearly defined. Many of these issues can be resolved through system planning and agency coordination but in most cases agencies lack the capacity or fail to understand the importance of this aspect of public use.

Policies legally enabling concessions management and a sound concessions management sub-plan developed with stakeholder participation: There is a trend to outsource or use third-party operators for the provision of many services in PAs due to limited agency capacity to provide those services. Concession of services is a common arrangement for the provision of such services as guiding, interpretation, infrastructure management and/or maintenance, trash removal, accommodations, restaurants, etc. Concession agreements should be formally developed with clear written protocols that describe responsibilities of each party, the duration of the contract, rules and regulations of conduct, conditions for cancellation of the agreement and the revenue sharing arrangements. Certain legal and agency regulations must be established that guide concession agreements because such agreements are legal contracts between the PA managing agency and a private company or NGO providing the desired service. The legal framework is often the most complex and difficult elements of concession management. Legal agreements must be structured to benefit all parties mutually and provide a basis for resolution of any problems that may arise. However, they must also be flexible enough to adapt to the rapidly changing tourism and recreation market. Key factors for concession management include: a) capacity within the PA to oversee the concessionaire and monitor any potential impacts of their services; b) detailed agreements that include hours and seasons of operation, performance standards, degree of exclusivity of contract, etc.; c) clear pricing and revenue sharing arrangements; d) contract duration; e) standards for risk management, safety and liability in case of accidents; f) responsibilities for and ownership of any infrastructure developed as part of the agreement; g) design standards and protocols for approval of design, construction and maintenance of any infrastructure developed during the contract; h) financial bonding or security arrangements that are held in escrow for the duration of the contract that provide financial resources should the concessionaire fail to fulfill his obligations.

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Conclusions

The public use of natural protected areas will increase as the recreational demands of a growing and increasingly urban population grow, as national and international ecotourism continues to surge, and as pressure on protected areas to generate revenue for management agencies and benefits for local populations expand. This will result in even greater pressures on management authorities and increased threats to PA resources. Fortunately the emerging science of visitor management is providing tools that can help maximize the benefits of public use and allow for the management of negative impacts. Improved laws and policies, application of good practices in public use facility and program design and implementation, reinvestment of revenues, strengthened staff capacity, community, stakeholder and volunteer involvement, visitor education and orientation, and improved institutional frameworks for managing public use programs have the potential to assist already over-taxed management authorities to meet these challenges.

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the authors are members of the Center for Protected Area Management and Training, Colorado State University, Ft. Collins, CO