This PDF file is a digital version of a chapter in the 2005 GWS Conference Proceedings. Please cite as follows:

Harmon, David, ed. 2006. *People, Places, and Parks: Proceedings of the 2005 George Wright Society Conference on Parks, Protected Areas, and Cultural Sites.* Hancock, Michigan: The George Wright Society.

Making Your Visitors Count:
Collecting and Archiving Visitation Data in U.S. Protected Areas

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Introduction

Overuse and underuse of park resources are two common issues for protected areas in the United States and abroad. While overuse can lead to environmental and social effects, underuse of some protected areas may put their importance in question and affect their ability to justify funding and expenditures. Addressing these and many other management issues effectively requires basic information such as visitation data.

Currently, the authors are conducting a pilot project compiling protected area visitation data in the U.S. as part of the global effort led by the Tourism Task Force of IUCN World Commission on Protected Areas (WCPA) to incorporate visitation data into the United Nations List of Parks and Protected Areas and associated World Database on Protected Areas (WDPA). This effort to add visitation data has recently gained support from the WCPA steering committee (WCPA 2004).

The U.N. List of Parks and Protected Areas is collected by the World Conservation Monitoring Center, an agency of the U.N. Environment Program. The list is regularly compiled under the authority of the U.N. based on resolutions adopted by its Economic and Social Council. From 1962 to 1990, ten editions of the U.N. List were printed. The 1993, 1997, 2003 and 2005 lists are available on the Internet. The overall goal of the U.N. List is to keep an up-to-date list of all protected areas in the world. However, the U.N. List does not include data on visitor use or tourism levels.

The variability in availability and quality of visitation data being archived by U.S. protected areas at federal, state, and local levels may reflect the confidence of any visitation data worldwide. Identifying appropriate data management and reporting practices can help managers communicate needs and use protected areas more effectively. The following discussion is limited to terrestrial protected areas only.

Objectives

The goals of this project are to collect visitation data for protected areas located in the United States, and through that process to develop guidelines and protocols for collecting and reporting visitation data of protected areas worldwide. The purpose of this paper is to report progress on the U.S. visitation data pilot project. The process of data collection has

created an environment to discuss issues and challenges emerging across multiple management offices. Finally, we wish to supply some general recommendations for future research and the development of an international protocol for adding visitation to the U.N. List and WDPA.

Methods

The United States protected area dataset was extracted from the 2004 WDPA. This working dataset contains 4,262 IUCN protected area records in the United States. Protected areas encompass a variety of locations ranging from national parks and forests to state parks or wildlife refuges (Table 1). The wide-ranging management objectives of each individual protected area make systematic visitation data collection challenging because the data are conceived through many different land use perspectives.

Table 1. Example of existing entries in the World Database of Protected Areas (selected categories).

AREA NAME	ISO3	LAT	LON	IUCN CAT	SITE CODE	AREA HA
New River Gorge NR	USA	37.737	-80.907	V	2512	25,101
New River Gorge NR	USA	37.990	-80.976	V	2512	25,101
Newport SP	USA	45.240	-86.992	V	22375	0
Nez Perce NHP	USA	46.434	-116.829	V	22658	1,212
Nez Perce NHP	USA	46.110	-115.363	VI	100934	900,060
Nez Perce NHP	USA	46.202	-116.023	V	22658	1,212

NR = National River; SP = State Park; NHP = National Historical Park

Our strategy was to identify management offices with many listings on the WDPA and prioritize by which may be the easiest offices to identify and contact for information. Data collection efforts began in 2004. Management offices were asked to supply one complete year of visitation data for all of the sites they manage. The individual name was then cross-referenced with the larger protected areas, listed by name type of protected area (or designate) and latitude and longitude coordinates. Once positively identified, the data were entered into the working U.S. database as four new data columns (Table 2).

Results

Table 3 summarizes the current progress of this U.S. pilot project. Visitation data from protected area units managed by National Park Service and U.S. Forest Service are mostly complete, while contacts are being made to gather information from several other federal as well as state offices.

Data from the National Park Service (NPS 2005) reflect an agency-wide consideration for visitation data. One NPS representative unified information to its most simple unit in order to supply the information needed for the WDPA.

Individual state park data varies greatly in availability and quantity. Of collected data, 8% of state park agencies cannot supply any visitation data for parks. There are several parks

VISITATION	UNITMEAS	YEAR	SOURCE
201,410	Visitor-Days	CY2003	Butch Street, Management Analyst NPS
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142,333	Visits	CY2003	Bonnie Gruber, WI Bureau of Parks and Recreation
21,271	Visitor-Days	CY2003	Butch Street, Management Analyst NPS http://www.fs.fed.us/recreation/programs/ nvum/reports/year1/R1_Beaverhead_ final.htm#_Toc524421321
500,000	Visits	CY2000	retrieved: January 11, 2005
21,271	Visitor-Days	CY2003	Butch Street, Management Analyst NPS

Table 2. Example of new data columns on visitation added to the existing WDPA entries.

MANAGEMENT OFFICE	IDENTIFIED	RECEIVED	ENTERED
National Park Service	100%	100%	100%
Individual state park management agencies	96% 8% Unable to Supply Data	74%	16%
U.S. Forest Service	99%	99%	3%
Bureau of Land Management	Need initial contact		
U.S. Fish and Wildlife Service	Need initial contact		
Other agencies (Army Corps of Engineers, TVA)	Need initial contact		

Table 3. Current progress of U.S. data gathering for WDPA.

with detailed and methodical methods of data collection and report data that contain too much detail for parsimonious interpretation and entry. Similarly, there are parks that do not have any visitation data to report.

The U.S. Forest Service (USFS 2005a) reports data on-line. The U.S. Forest Service reports include in-depth information and confidence intervals (USFS 2005b). These reports are fairly easy to navigate, but include separate counts for national forest and wilderness visits.

Challenges

State/province identification. Protected areas, specifically at the state level, are not identified in the U.N. database by their state. In the case of identifying state parks in the database, the process would prove smoother if the database listed provinces or state references for countries with these types of subdivisions. Collecting full state park records including all available data and sorting through to find a small percentage of state data used in the U.N.

List makes the case for including state identifiers.

Additionally, the collection process for state parks yielded many lists of parks and many parks have the same or similar names. Popular park names were listed for several states where the U.N. List may list only one state park with a popular name. In this case the latitude and longitude coordinates in the U.N. List (a geo-referenced database) helped to identify the proper state park to report. The coordinates allow for proper identification, but at a great time cost. Future additions of visitor data would benefit greatly with the time-saving addition of regional identifiers such as the state or province where the protected areas are located.

Site codes. The U.N. List includes site codes as a measure to indicate an individual polygon for protected areas (Table 1). Polygons with the same site code are considered the same location and all polygons with the same identifiers and site codes receive the same reported visitation. Problems may occur is if visitation counts are aggregated by site code and visitation numbers become inflated when the data are transferred and reported in other venues. A measure to prevent this problem from happening is needed.

Site codes also present a challenge because currently the key to what those codes indicate is unknown. In this case the site codes indicate different protected areas with the same or localized coordinates. The managing agency reports that they only manage one area by that name or identifier yet that location is identified in the U.N. List as several sites. This creates the concern for further misspecification in reporting visitation.

Reporting issues. Some protected area management agencies are unaware that their sites are included in the U.N. List and WDPA. This lack of awareness and sometimes lack of understanding of the significance of U.S. protected areas in a world context may decrease the motivation for organization of systematic reporting. Further, individual agencies are not prepared to share information in a standardized manner. Where there is willingness and interest the goal of effective and efficient data reporting is underachieved.

The visitation statistics shared by managing agencies have different levels of variability, yet the variation in validity and reliability across agencies is unidentified. Each individual that enters a park is not doing the same things or having the same experiences as every other. Hornback and Eagles (1999) discuss many factors, such as persons-per-vehicle (PPV), length-of-stay (LOS), and exit–re-entry, that can greatly change the dynamics of a visitation count and the results achieved through different count methods. The variation in validity and reliability must be known to gauge the value of each visitation estimate. Hornback and Eagles (1999) also provide unified definitions for park visitation and tourism statistics that, if adopted, could help provide global standards.

Recommendations

The international effort to add visitation data to the U.N. List requires a protocol for the collection and reporting of visitation data that fall within a reasonable framework of reliability and validity. Currently visitation counts are largely based on agency-level standards and therefore there are problems of generalizability when discussing one protected area in relation to another at the national and international level. Hornback and Eagles (1999) worked to provide a framework for international standards for visitation data. Further work is need-

ed to integrate visitation data following these or similar standards into the U.N. List and management of that database.

The integration of a protocol and effective reporting of visitation data worldwide is a task that lies upon the shoulders of protected area managers and professionals interested and involved in this effort. This can be achieved through increased communication, understanding, and collaboration between local agency managers and WCPA. This is evident in managers of protected areas being unaware of the international designation and little understanding of the purpose and focus of WCPA and IUCN.

Research and development of organization and management systems of WDPA visitation and other related databases will make data more accessible. For example, managers can reference or use the visitation data system to change information as the protected area goes through structural or management strategy changes. This allows any individual accessing protected area information to have the most up-to-date information available. Currently, much of the database information is accessible on-line through the World Database of Protected Areas website (WCPA 2005). A master plan for integration and currency of individual national visitation datasets and WDPA is needed.

Discussion and conclusion

The inclusion of visitation data in the WDPA can help illustrate that protected areas are not merely masses of open land, but that they are actively used and appreciated. Reporting visitation in this venue helps portray the dynamic and powerful impact that protected areas have. Many protected areas in the United States are visited by people from across the nation and the world. The visitation counts alone do not directly portray the unique benefits that protected areas provide, but the popularity coupled with visitor study reports creates a picture of how protected areas affect their visitors.

The WDPA is a list sharing the vital facts and statistics. As the WCPA steering committee has recognized visitation statistics to be a piece of each protected area's record in the U.N. List (WCPA 2004), this U.S. pilot project is one small step towards international visitation reporting in the WDPA. The challenges presented in this project will be addressed to create viable protocols to be utilized when visitation is collected worldwide.

Visitation statistics available for protected areas internationally can assist in identification of issues and characteristics of tourism and protected areas. Once identified international consideration of shared issues can help to develop effective and efficient guidelines and strategies to manage visitation while protecting these unique and valuable resources.

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