VERP, LAC, VIM, VAMP:

A database that compiles user-capacity indicators and standards on the Web

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Background

User capacity, previously referred to as visitor capacity or carrying capacity, came to the forefront of public land planning in the 1970s. Concern over rising visitation in parks and the accompanying impacts on resources and visitor experiences led the National Park Service to focus increasing attention on user capacity. In 1992 the National Park Service began developing a visitor experience and resource protection (VERP) framework to address user capacities in the National Park System (Hof et al. 1994). The VERP framework has subsequently been applied in national parks across the country, including Acadia (Maine), Isle Royale (Michigan), Arches (Utah), Yosemite (California), and Haleakala (Hawaii) (fig. 1).

Although many people think of user capacity as a maximum number of people (i.e., a limit) for a given area, the concept is much more complex. Research has shown that user capacity cannot be measured simply as a number of people because impacts to desired resource conditions and visitor experiences are often related to a variety of factors that include not only the number of people but also types of activities, where people go, what kind of impacts they leave behind, what type of resources are in the area, and the level of management presence. In an attempt to acknowledge these variables, the National Park Service defines user capacity as the types and levels of public use that can be accommodated while sustaining the desired resource and social conditions that complement the purpose of the park.

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The premise behind VERP, and almost all of the other user-capacity management approaches (e.g., limits of acceptable change [LAC], visitor impact management [VIM], and visitor activities management process [VAMP]), is that with any use comes some level of impact that must be accepted. Furthermore, the public land management agency is responsible for determining what level of impact is acceptable and what actions are needed to keep impacts within acceptable limits. As such, user capacity frameworks incorporate the following key elements:

1. Identifying desired resource and social conditions for each area (management zone) of the park
2. Setting resource and social indicators (specific, measurable variables that will be monitored) and standards (a management decision about the minimum acceptable conditions for the indicators) for each zone
3. Monitoring the indicators to measure success in achieving and maintaining the desired resource conditions and visitor experiences
4. Taking management action when resource or social conditions are "out of standard" or are deteriorating and likely to become "out of standard"

Indicators and standards for user capacity may be part of many different types of plans including general management plans, comprehensive conservation plans, resource management plans, river plans (fig. 2), wilderness plans, trail plans, and visitor use management plans.

Figure 1. The National Park Service is developing a commercial services plan at Haleakala National Park (Hawaii) that will include user capacity indicators and standards. This scene depicts a popular park activity: enjoying sunrise from the summit of Haleakala volcano. Indicators and standards will help park staff manage heavy-use areas and commercial services such as bike and horseback-riding tours. USGS/JEFF MARION

Developing the database

In summer 2005, a team of NPS employees from the Denver Service Center, Alaska Regional Office, and Washington Office began developing a database of visitor impact–related indicators and standards. The purpose of the database is to compile and share existing information about indicators and standards that various land management plans and literature sources have used or suggested for monitoring user capacity. The NPS team developed the database as a tool to assist with the selection of indicators and standards. For example, when managers are trying to develop indicators and standards for an area, considering indicators and standards already suggested or selected for other areas with similar resources, use patterns, or visitor-use issues may be beneficial; however, managers must recognize that adopting the exact standard selected for another area may not be appropriate as standards should be based on the desired conditions of each area. Many other resources are available to managers who are developing indicators and standards, so this database is not the sole source of information. The database only addresses recreational impacts that have related indicators and standards in some type of plan or in the literature. Nevertheless, the database has collected information about indicators and standards developed by public land management agencies and the research community, including those from approved draft or final plans developed by the National Park Service (NPS), USDA Forest Service (USFS), and the Bureau of Land Management (BLM). All of these indicators and standards have been vetted through a planning process. Some indicators suggested or tested in research studies, though not put through a planning process, are also part of the database.

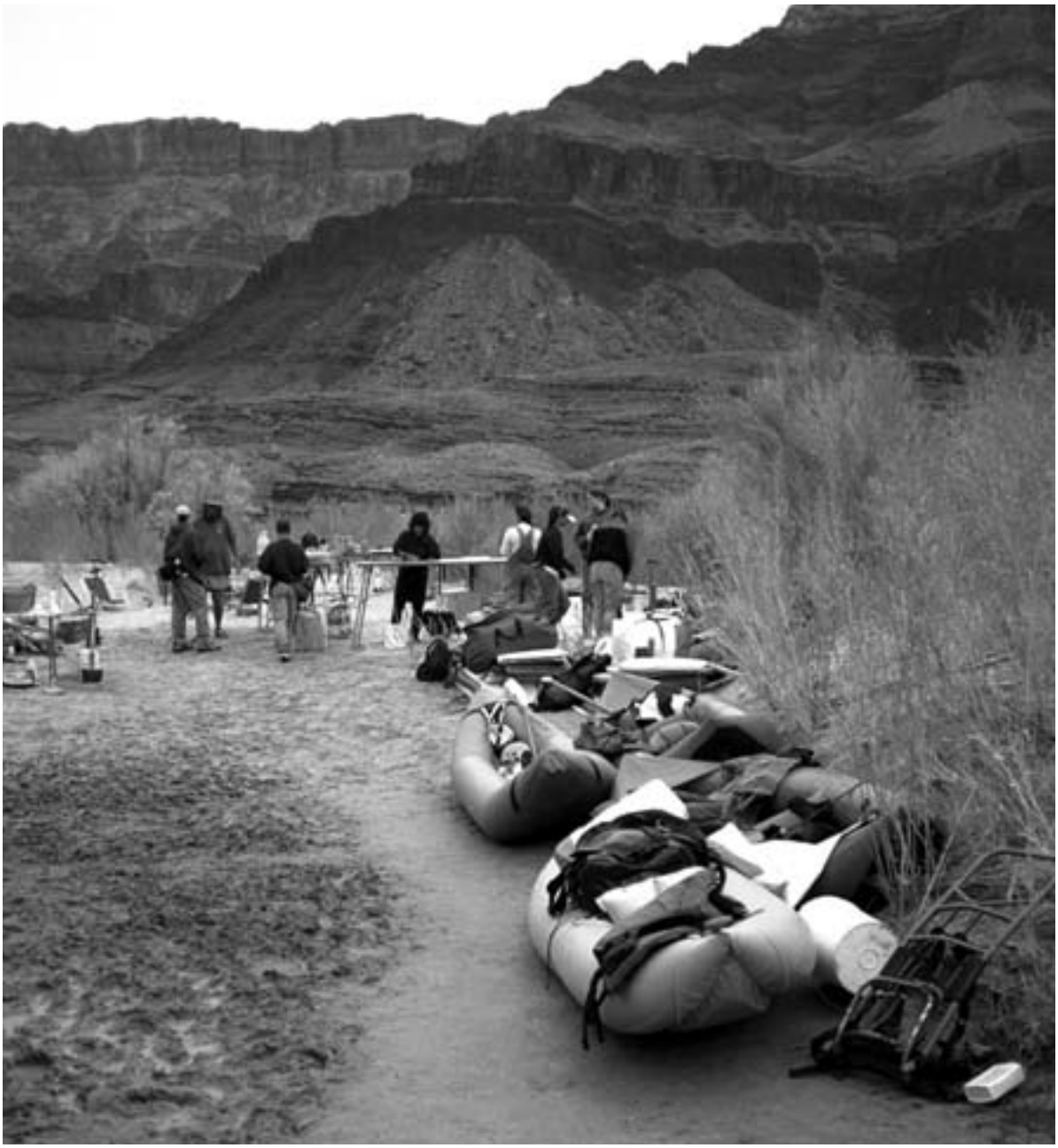

Figure 2. User capacity–related indicators and standards, including impacts to campsites, have been part of planning and management of the Colorado River in Grand Canyon National Park (Arizona) for many years. The Colorado River Management Plan (November 2005) includes a revised set of user capacity indicators and standards that will be implemented over the lifespan of the plan. USGS/JEFF MARION

As of July 2006, more than 250 entries had been made into the database. However, the database is not exhaustive of all possible sources. It is a tool that can be continually updated with indicators and standards as they are collected from existing sources or are developed during new planning or research efforts.

Database structure

Table 1 shows a simplified version of three examples from the database. The examples, taken from National Park Service, Bureau of Land Management, and USDA Forest Service plans, show only the indicators and standards. However, the actual database has other fields, for example, sources of information for further inquiry. In addition, some fields are intended to allow the user to search various topics of interest and identify related indicators and possibly standards (if provided). For instance, users can search the database for indicators and standards related to topics such as loss of vegetation, vandalism of archaeological sites, and visitor-use volume/density. Furthermore, users can search the database for indicators and standards applicable to certain types of settings such as wilderness and backcountry areas, rivers, and developed areas. However, although many types of settings occur in parks, the database only includes settings for which the team found reported indicators and standards. Finally, users can search the database for indicators and standards related to types of facilities such as campsites, trails, roads, boat docks, and transit facilities.

For each indicator and standard entry, the following information is provided in the database (as available):

- Agency
- Unit (name of the public land management area)
- Type of document (e.g., approved plan, draft plan, or study)
- Name and date of document
- General issue category (general query field for major topics, e.g., "vegetation")
- Secondary issue category (general query field for more specific subtopic relating to "general issue category," e.g., "removal/loss of vegetation")
- Setting/resource type
- Facility/site
- Any additional clarification of the indicator or standard that might be helpful (e.g., suggestions for clarification of terms or units of measurement)
- General comments (e.g., notes on the application of the indicator, other applicable standards to different zones, or more information on the source or implementation of the indicator)

Using the database

Hosted by the Denver Service Center, the user capacity indicator and standards database is available at http://usercapacity.nps.gov. The database is read-only, searchable, and provides a user's guide, which should be read by first-time users (click on "Help"). For questions about the database, suggestions for changes or additions, or technical problems, users can send an e-mail to usercapacity@nps.gov.

Potential users

Although the database has been operational for NPS users since June 2006—when the Park Planning and Special Studies Division in Washington, D.C., announced it in "Inside NPS"—the authors have not tracked the use of the database. However, a large population of potential users exists, both within and outside the federal government. In addition to park planning teams and park staff, other likely users include other federal land agencies (e.g., USDA Forest Service, Bureau of Land Management, and U.S. Fish and Wildlife Service), state and private land managers, and researchers in educational institutions. The database became publicly available on the Internet in January 2007.

Reference

Hof, M., J. Hammett, M. Rees, J. Belnap, N. Poe, D. Lime, and B. Manning. 1994. Getting a handle on visitor carrying capacity—A pilot project at Arches National Park. Park Science 14(1):11–13 (Winter 1994).

About the authors

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Table 1. Sample fields of the user-capacity database

Agency	Name of plan	Indicator	Standard
BLM	Mt. Trumbull/Mt. Logan Wilderness Management Plan, 1990	Number of undesignated campsites per 500-acre area (203 ha)	No more than one undesignated campsite per 500-acre area (203 ha)
USFS	Hells Canyon National Recreation Area Comprehensive Management Plan, 2003	Number of human encounters per day on trails	80% probability of not more than one human encounter per day on trails
NPS	Shenandoah National Park Backcountry and Wilderness Management Plan, 1998	Number of informal/user-created trails to campsite	No more than two informal/user-created trails to campsite