U.S. Federal Recreation: Diverse Lands, Diverse Agencies – Comparing Agency Methods of Monitoring Visitation and Estimating Economic Impacts

***Christian Crowley**, U.S. Department of the Interior, USA, Christian.Crowley@ios.doi.gov*
***Sarah Cline**, U.S. Department of the Interior, USA*

Introduction

U.S. Federal lands and waters provide recreational opportunities to nearly 900 million visitors a year, resulting in billions of dollars of spending and related economic impacts. These recreation areas encompass over a billion acres, managed by a diverse set of agencies for a variety of uses. This presentation describes similarities and differences across the methodologies used by U.S. agencies to estimate visitation to recreation areas under their jurisdiction; the amount and patterns of related spending by those visitors; how this spending affects local economies in terms of economic impacts; and challenges to reporting nation-wide totals.

Background

U.S. Federal recreation areas are managed by the seven agencies that make up the Federal Recreation Council (FRC): the National Park Service (NPS), the Bureau of Land Management (BLM), the U.S. Fish and Wildlife Service (USFWS), the Bureau of Reclamation (Reclamation), the U.S. Forest Service (USFS), the National Oceanic and Atmospheric Organization (NOAA), and the Army Corps of Engineers (USACE).

FRC agencies use data on recreation to consider economic values and economic impacts; to inform plans and policies for management, transportation, and infrastructure; to anticipate management issues related to visitor impacts on recreation resources; and to efficiently allocate personnel and management resources across sites. Local governments, business communities, and researchers are also interested in this information to inform a wide array of activities related to visitation.

Characterizing visitation on Federally managed lands is a challenge given the diversity in the types of sites and activities available to visitors. Many sites have multiple unmonitored access points in remote areas. As such, visitation monitoring and approaches for data collection differ across agencies and sites.

Visitation data can be collected using on-site or off-site methods. Off-site methods typically involve a survey, with respondents asked to report their number of trips to specific destinations within a given time period. These surveys often rely on memory, and like other surveys of the general population appear to suffer from declining response rates. Furthermore, it may be a relatively small portion of the general population that visits Federal recreation sites, making it difficult for even a large random sample of households to identify a statistically sufficient number of visitors.

On-site methods count visits as they occur at the recreation areas, avoiding so-called response bias or recall bias, however these approaches have other challenges, including (1) the expense and resources required for monitoring and counting visitation at sites where recreation is widely dispersed; and (2) the difficulty in training field personnel, and verifying count consistency at the different types of sites found across the country.

Data and analysis

Table 1 reports data for 2016 for the FRC agencies: visits, visitor spending, related economic impacts (value added), and the recreation acres managed by each agency. The extent of an agency's management area does not necessarily determine the number of recreation visits the agency will receive, or the economic impact of those visits. For example, NOAA and BLM together manage for 59 percent of total recreation acreage, while visitor spending to these areas accounts for 16 percent of the total. Conversely, 67 percent of recreation visits were to sites managed by NPS and ACOE, which together manage 9 percent of recreation acreage. The most visitor spending (37 percent of the total) is related to visits to NPS sites, which make up 8 percent of recreation acreage.

Table 1 also illustrates differences in the type of spending associated with a visit to each agency's lands. For example, comparing agency-wide visitor spending to visits implies an average of about $33 per visit to a Reclamation site, compared with $62 per visit to a USFS site.

Table 2. U.S. Federal Recreation, by Managing Agency (2016)

Federal Agency	Abbreviation	Managed Area (million acres)	Recreation Visits in 2016 (millions)	Visitor Spending 2016-$ (billions)	Value added 2016-$ (billions)
National Park Service	NPS	84	331	$18	$20
Bureau of Land Management	BLM	250	65	$3	$4
U.S. Fish and Wildlife Service	USFWS	150	50	$2	$3
Bureau of Reclamation	Reclamation	6	30	$1	$2
U.S. Forest Service	USFS	193	146	$9	$11
National Oceanic and Atmospheric Organization	NOAA	384	n/a	$5	n/a
Army Corps of Engineers	USACE	12	267	$11	$13
Total		**1,079**	**889**	**$49**	**$53**

Sources:

Area: Leggett et al., 2017; National Marine Sanctuaries website: sanctuaries.noaa.gov

Visits and Spending: Cline, S., and C. Crowley, 2018

Notes:

Visitation estimates are for the 2016 fiscal year (Oct-Sep), except that:

NPS uses the 2016 calendar year (Jan-Dec);

USFS uses an annual estimate for the period FY 2012 – FY; and

NOAA does not estimate annual visitation.

One acre = 0.4 hectares

Results and discussion

We find that FRC agencies tend to rely on on-site methods to estimate visitation rather than off-site surveys. Agencies tend to use automated vehicle and pedestrian counters where practical, as well as various administrative data sources such as campsite registrations and permit applications. Agencies differ in the degree to which data collection is centrally coordinated; the level of documentation of the approach used; the spatial and temporal resolution of the estimates; the method and frequency with which conversion factors for

automated counters are updated; the degree to which double counting of visits is addressed; the definitions used for various visitation metrics; and the provision of public access to the statistics.

Agencies would likely benefit from improved documentation, guidance, training, and interagency coordination of current methods for data collection and reporting. For example, there is variation in definitions of key concepts (e.g., what constitutes a *visit*, or *visitor-day*), activities considered, the degree of autonomy in developing methods (i.e., site-level versus agency-level), and the spatial and temporal resolution of data.

There is also potential for improving current methods of data collection, and exploring new methods. For example, visitors who enter and leave a site within a single day may be double-counted; this could be avoided by counting only "last-exiting" visitors. More sophisticated automated counters could provide richer data on temporal patterns, and may provide an option for reporting data wirelessly, reducing the need to access counters in person.

References

Cline, S., and C. Crowley. 2018. Economic Contributions of Outdoor Recreation on Federal Lands (2016).

Leggett, C., E. Horsch, C. Smith, and R. Unsworth. (2017). Estimating Recreational Visitation to Federally-Managed Lands.