



Canoing on the Delaware River, NPS photo

# **Economic Impact, Significance, and Values of Delaware Water Gap National Recreation Area**

## **Technical Report**

April 2015

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for  
National Parks Conservation Association

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## EXECUTIVE SUMMARY

Delaware Water Gap National Recreation Area lends economic vitality to a region that includes five counties—Sussex and Warren counties in New Jersey, and Monroe, Northampton, and Pike counties in Pennsylvania. Accounting for the influence of spending by out-of-area and local park visitors, as well as National Park Service employment, in 2014 the park supported:

- \$219 million in sales at local businesses;
- 2,232 local jobs; and
- \$97 million in wages and salaries.

Out-of-area park visitation added more than \$2.5 million in hotel and sales tax revenues to local and state government coffers.

In 2014, every \$1 of federal government funds invested in the park's operating budget yielded \$24 in sales at local businesses.

Equally important to the region's economy and quality of life are the park's values as a community partner and as an anchor in a larger landscape of conserved and natural areas. Because the park remains largely forested and undeveloped, it provides ecosystem goods and services such as clean water, reduced floods, fish and wildlife habitat, and carbon storage with an estimated annual value of \$159 million.

This technical report details an analysis of the economic impact and significance of 2014 visitation to Delaware Water Gap National Recreation Area in the five-county study region, and provides references for other sources of data and analysis used on the National Parks Conservation Association's (NPCA) report entitled, *Making Connections: Investing in a Vibrant Economic Future in the Region at Delaware Water Gap National Recreation Area* (April 2015).

## INTRODUCTION

One of the last large undammed rivers in the lower 48 states, the Delaware River flows freely for 300 miles along its main stem from Hancock, New York to the Atlantic Ocean at Delaware Bay. The river divides Pennsylvania from its eastern neighbors—New York and New Jersey—and flows between New Jersey and Delaware before reaching the ocean.

This is one of the cleanest rivers in the United States, supporting a noteworthy cold-water trout fishery in its upper reaches. The Lower Delaware is broad, tidal, and active with commercial ship traffic. In between, the Middle Delaware leaves the Appalachian Plateau at Port Jervis, New York, and flows for 40 miles through a narrow valley surrounded by heavily forested hills and mountains.

This 40-mile stretch of river flows through the heart of Delaware Water Gap National Recreation Area, one of the country's most-visited national park areas.<sup>1</sup> In many ways, the river defines this park, influencing everything from its most popular recreational offerings to its split between Pennsylvania to the west and New Jersey to the east.<sup>2</sup>

Delaware Water Gap National Recreation Area is consistently among the most-visited parks in the National Park System, welcoming between four and five million visitors annually. The core analysis for this study estimates the economic influence of Delaware Water Gap National Recreation Area in a five-county region that includes Sussex and Warren counties in New Jersey, and Monroe, Northampton, and Pike counties in Pennsylvania.

Tourism is big business in this region. Between 1998 and 2012, tourism employment grew 26 percent in the five-county study region (Sussex and Warren in New Jersey, and Monroe, Northampton, and Pike in Pennsylvania).<sup>3</sup> According to the U.S. Department of Commerce, in 2012 nearly one of every five private-sector jobs in the region was in an industry related to travel and tourism.

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<sup>1</sup> Much of the length of the Delaware River is protected within the National Wild and Scenic Rivers System, which was created by Congress to safeguard the natural, cultural, and recreational values of rivers across the country. As it flows through the park, most of the Delaware River is recognized as a National Scenic River, while a shorter stretch near the Water Gap is designated as a National Recreational River. Upstream and downstream, other stretches of the river are administered by the National Park Service and supporting partners in the Upper Delaware Scenic and Recreational River, Delaware and Lehigh National Heritage Corridor, and the Lower Delaware Scenic and Recreational River.

<sup>2</sup> "Park" and "national park" are used throughout this report to refer to Delaware Water Gap National Recreation Area, one of more than 400 parks in America's National Park System.

<sup>3</sup> Tourism employment as reported in "A Profile of Socioeconomic Measures," and "A Profile of Industries that Include Travel and Tourism," Headwaters Economics

## **Study Overview**

Delaware Water Gap National Recreation Area provides or contributes to a range of economic benefits. This analysis focuses on out-of-area visitation (visitation by persons who live outside the five-county study region), which is by far the largest source of the park's economic impact. It examines the effect of out-of-area visitor spending on local jobs, personal income (payroll and proprietor income), and economic activity (sales of goods and services), as well as local and state hotel and sales taxes.

In addition, the analysis estimates the economic significance of spending by area residents when they visit the park. While the amount of local park visitor spending is much smaller than the spending of out-of-area visitors, it is still an important source of economic activity in the region.

Finally, the analysis updates a 2010 Michigan State University estimate of the economic impact of National Park Service employment in the region surrounding Delaware Water Gap National Recreation Area. The bulk of the park's annual operating budget is spent on staff pay and benefits, and most park employees reside in the surrounding region.

The economic contributions of out-of-area visitor spending and local visitor spending are added together with an estimate of the impact of National Park Service employment to create a core estimate of the economic contributions of the national recreation area to the region's economy.

Two of these components represent the park's economic impact—the economic activity that would likely take place in the region if Delaware Water Gap National Recreation Area did not exist. Spending by out-of-area park visitors and federal funds spent on park employment both bring “new” dollars into the region's economy.

## **Beyond Economic Impact**

Park visitors, park employees, and the local jobs they support provide the most visible face of the park's economic benefit to the region. Other impacts that are perhaps not as widely recognized include the park's roles as a customer, a neighbor, a property manager, a community services provider, a partner, and a steward. The magnitude of some of these can be suggested in terms of sales, jobs, and income, or other measurable terms. Others yield benefits that are not as easily quantifiable or are less studied.

To suggest these broader influences—such as the value of the natural assets the park protects, the larger natural landscape to which the park is connected, and qualities that are important to year-round and seasonal residents—this study draws on findings from other studies and plans, interviews with local experts, and consultation with park staff and community leaders including three community roundtables involving business owners, tourism promoters, government agency staff, and other community members.

In the National Parks Conservation Association's April 2015 report entitled, *Making Connections: Investing in a Vibrant Economic Future in the Region at Delaware Water Gap National Recreation Area*, these sources were used to provide a broad and rich

context for understanding the park's economic importance well beyond its obvious role in attracting visitors. This technical report provides references for specific data and information cited in the *Making Connections* report.

## TECHNICAL BACKGROUND

### **Economic Contributions Analytical Methods**

This economic impact analysis uses an “input-output” model. This model assumes that money spent locally—for example, by visitors paying for meals, lodging, fuel, and gifts—supports further economic activity. Businesses spend these dollars to pay employees, purchase goods, and pay for rent, fuel, taxes, and other expenses. Park employees pay bills, buy food, fuel, and entertainment. Some of these expenditures are made locally, where the money can then be spent “again” by the businesses and persons who receive it, and so on.

“Direct impacts” are calculated as the amount of spending for an activity or by an organization or group—such as park payroll or the expenditures of out-of-area visitors—and the economic activity this spending immediately supports. “Total impacts” reflect the “multiplier effect” of portions of those direct expenditures being circulated through the local economy, as described above. When impacts are reported in the NPCA *Making Connections* report, the “total impacts” figure is used.

### **Data Sources and Components for Estimating Economic Impact**

Economic contributions of out-of-area and local visitor spending are calculated based on three inputs, each of which is estimated based on a variety of information sources, as described below.

#### *Recreation visits*

In 2014, the National Park Service estimated a total of 4,041,672 recreational visits to Delaware Water Gap National Recreation Area. This represents a 16 percent decline from 2013 estimates, which surpassed 4.8 million. Much of the difference is likely due to the replacement and ongoing calibration of vehicle counters in key locations at which the NPS counts visitors.<sup>4</sup>

Rather than estimating or attempting to correct for any potential error in the 2014 numbers, this analysis employs the conservative approach of using the lower 2014 visitation number as its basis.<sup>5</sup>

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<sup>4</sup> Personal communication with Delaware Water Gap National Recreation Area superintendent John Donohue, and other NPS staff.

<sup>5</sup> As explained in the official National Park Service report, *2013 National Park Visitor Spending Effects*, “Parks count visits as the number of individuals who enter the park each day. For example, a family of four taking a week-long vacation to Yellowstone National Park and staying at a lodge outside of the park would be counted as 28 visits (four individuals who enter the park on seven different days). A different family of four, also taking a week-long vacation to Yellowstone National Park but lodging within the park, would be counted as four visits (four individuals who enter the park on a single day and then stay within the park for the remainder of their trip). These differences are a result of the realities of the limitations in the methods available to count park visits.”

### *Visitor behavior and spending data*

The raw figure of 4,041, 672 visits was adjusted to convert the total number of recreation visits to visitor party days/nights. This adjustment results in visitation numbers that were then used in conjunction with visitor spending profiles to estimate total visitor spending.

Key visitor characteristics including visitor party size, the percentage of local and out-of-area visitors, type of lodging used, visitor re-entry rates, and average length of stay in the park were used to create an overall profile of park visitors organized around the following visitor segments:

- 27% Local day-use
- 32% Non-local day use
- 11% Non-local overnight, staying in free accommodations
- 19% Non-local overnight, staying in paid lodging
- 8% Non-local overnight, camping outside the park
- 3% Non-local overnight, camping inside the park<sup>6</sup>

Park visitor spending profiles were developed from a variety of sources, yielding a weighted average across all segments of \$128.36 per visitor party day/night.<sup>7</sup> The spending is broken down into eight categories:

- Hotels, motels and bed and breakfasts,
- Camping fees,
- Restaurants and bars,
- Groceries and takeout food,
- Gas and oil,
- Local transportation,
- Admission and fees, and
- Souvenirs and other expenses.

### *Economic multipliers*

The final component of the impact analysis is the multiplier set, which are 2012 county-level multipliers from the IMPLAN (Impact Analysis for Planning) data sets, inflation-adjusted to 2014 dollars.

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<sup>6</sup> Park visitor profile based largely on Blotkamp, Ariel, N. Holmes, M. Littlejohn, S. Hollenhorst. *Delaware Water Gap National Recreation Area RiverVisitor Study, Summer 2010*. National Park Service, 2011. Refinements based on extensive conversations with administrative and interpretive staff at Delaware Water Gap National Recreation Area.

<sup>7</sup> Park visitor spending profiles were developed using the following sources: Blotkamp *et al.*; Longwoods Travel USA, *The Poconos 2012 Visitor Report*, Longwoods International; D.K. Shifflet and Associates, *Fiscal Year 2012 Visitor Profile: An Inside Look at the Overnight Leisure Travel Market in New Jersey*, 2013; Longwoods International, *Pennsylvania's Annual Traveler Profile, 2012 Travel Year*.



## **ECONOMIC IMPACT AND SIGNIFICANCE ESTIMATES**

Economic impacts are estimated for the five-county region for 2014.

### **ECONOMIC IMPACTS OF OUT-OF-AREA PARK VISITOR SPENDING, 2014**

Number of out-of-area visitors	2.95 million
Visitor spending	\$120 million

#### **Total economic impacts of out-of-area**

##### **Park visitor spending**

Sales	\$168 million
Personal income (payroll and proprietor income)	\$75 million
Jobs (full-time and part-time)	1,751
State and local sales and hotel tax revenue	\$2.5 million

### **ECONOMIC CONTRIBUTIONS OF LOCAL PARK VISITOR SPENDING, 2014**

Number of local visitors	1.1 million
Visitor spending	\$18 million

#### **Total economic impacts of local**

##### **park visitor spending**

Sales	\$26 million
Personal income (payroll and proprietor income)	\$12 million
Jobs (full-time and part-time)	266

### **ECONOMIC IMPACTS OF NATIONAL PARK SERVICE EMPLOYMENT, 2014**

National Park Service payroll	\$7.6 million
Jobs directly provided	100 year-round, 70 seasonal

#### **Total economic impacts of National**

##### **Park Service employment**

Sales	\$25 million
Personal income (payroll and proprietor income)	\$10 million
Jobs (full-time and part-time)	215

## APPENDIX

### References for *Making Connections: Investing in a Vibrant Economic Future in the Region at Delaware Water Gap National Recreation Area*

- p. 4 *Basic information about the Delaware River*  
Delaware River Basin Commission website at [www.state.nj.us/drbc/](http://www.state.nj.us/drbc/), under the “Basin Information” tab. Accessed 21 April, 2015.
- Information about resources under park stewardship*  
Personal communication Delaware Water Gap National Recreation Area staff, and National Park Service inventories.
- p. 5 *Reliance on drinking water sources from the Delaware River basin*  
Delaware River Basin Commission website at [www.state.nj.us/drbc/](http://www.state.nj.us/drbc/), under the “Basin Information” tab. Accessed 21 April, 2015.
- p. 6 *\$1 federal investment in the park yields \$24 in sales at local businesses*  
2014 NPS operating budget divided by the total local sales supported by visitor spending (local and out-of-area) and National Park Service employment.
- 1998 to 2012 growth in tourism employment in the five-county region, and one in five private-sector jobs related to travel and tourism*  
“A Profile of Industries that Include Travel and Tourism” generated using the Headwaters Economics Economic Profile System-Human Dimensions Toolkit from [headwaterseconomic.org](http://headwaterseconomic.org).
- Local contributions keeping Kittatinny Point and Milford Beach open through the 2013 summer season during the Federal budget sequester*  
“Donations keep Kittatinny Point open this summer,” *The Pike County Courier*, 21 June 2013.
- Estimate of economic impact of National Park Service employment, 2014*  
(updated estimate based on the analysis in Stynes, Daniel J., *Economic Benefits to Local Communities from National Park Visitation and Payroll*, 2010. National Park Service, 2011.
- p. 7 *Employment figures from three large park partner organizations*  
Information provided by Appalachian Mountain Club, Peters Valley School of Craft, and Pocono Environmental Education Center.
- Volunteer hours, program investment, and examples*  
Personal communication, Delaware Water Gap National Recreation Area staff.
- Monetary value of volunteer time donated to the park*  
Calculated by multiplying the total number of volunteer hours by the Independent Sector’s 2013 estimate of the labor value of volunteer time.

*Park infrastructure responsibilities, maintenance load and backlog, value of routine construction projects, and value of small park purchases and contracts*  
Personal communication, Delaware Water Gap National Recreation Area staff.

*Economic impact of construction*

Estimated using the Center for Strategic Economic Analysis California statewide economic benefits of stimulus calculation tool at [strategieconomicresearch.org](http://strategieconomicresearch.org).

*\$2.5 million hotel and sales tax revenue supported by out-of-area park visitation*  
Ancillary impact analysis using the MGM2 impact model and county-level multipliers for the five-county region.

*\$92 million cost for needed major road repairs, and NPS Northeast Regional Office annual transportation budget*

Personal communication, Delaware Water Gap National Recreation Area staff; National Parks Conservation Association.

- p. 8 *NPS investment in highway maintenance, search and rescue, and other community services*

Personal communication, Delaware Water Gap National Recreation Area staff.

*Value of ecosystem services*

Kauffman, Gerald J. *Socioeconomic Value of the Delaware River Basin in Delaware, New Jersey, New York, and Pennsylvania; The Delaware River Basin, an economic engine for over 400 years*. University of Delaware, 2011.

*90% forestation of the park*

Personal communication, Delaware Water Gap National Recreation Area staff.

- p. 9 *Forest cover in Pennsylvania and New Jersey*

Open Space Institute. Compilation of land cover and development statistics for eight sub-watersheds Delaware River Basin.

*Reliance on drinking water sources from the Delaware River basin*

Delaware River Basin Commission website at [www.state.nj.us/drbc/](http://www.state.nj.us/drbc/), under the "Basin Information" tab. Accessed 21 April, 2015.

*Relationship between forest cover and water treatment costs*

American Water Works Association and Trust for Public Land. Survey of 27 municipal water suppliers, 2002.

- p. 10 *Pennsylvania state bear management plan*

Ternet, M.A. Management and Biology of Black Bears in Pennsylvania: Ten Year Plan (2006-2015). Bureau of Wildlife Management, Pennsylvania Game Commission, 2006.

*2011 impacts of hunting, fishing, wildlife viewing in Pennsylvania and New Jersey*

U.S. Fish and Wildlife Service. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

*Percent of strenuous exercise done in a park or on a trail*

2009 Outdoor Recreation in Pennsylvania Resident Survey, Pennsylvania Department of Conservation and Natural Resources.

*Avoided healthcare costs from recreation on conserved open space*

Economy League of Philadelphia, Econsult Corporation, Keystone Conservation Trust. Return on Environment: The Economic Value of Open Space in Southeastern Pennsylvania. GreenSpace Alliance and Delaware Valley Regional Planning Commission, 2010.

- p. 15 *Conserved land saves taxpayers money*  
Fiscal analysis conducted by the Monroe County Planning Office, 2015.
- p. 16 *Development map of the five-county region*  
Land cover change analysis and map by Dan Servian.
- p. 17 *Optimal and actual percentage of riparian forest cover in small watersheds*  
Price, W. and E. Sprague. *Pennsylvania's Forests: How They are Changing and Why We Should Care*. Pinchot Institute, 2012.
- p. 18 *Value of ecosystem services of 1,000 acres of conserved forest land*  
Application of forest ecosystem values reported in Kauffman, Gerald J. *Socioeconomic Value of the Delaware River Basin in Delaware, New Jersey, New York, and Pennsylvania; The Delaware River Basin, an economic engine for over 400 years*. University of Delaware, 2011.