



Conducting and Using Visitor and Recreational User Research

A Do-It-Yourself Guide & Toolkit

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The Partnership Behind This Guide

The idea for this guide and toolkit grew out of suggestions and queries from colleagues, clients and course participants, as well as long experience creating estimates to fill gaps in locally available data. The vision behind this guide is to support the capacity of communities and organizations to produce solid research and use it for good. Organizational partners like those that invested in developing this guide will nurture grassroots capacity building over time.

The Harbinger Consultancy developed this guide in partnership with organizations in the U.S. and Canada that are using it to educate, support, build capacity, and encourage data collection by members, allies and constituents. Partners include:



Lower Susquehanna Heritage Greenway
UpperBayTrails.org



Outdoor Recreation Council of British Columbia
ORCBC.ca



Maine Coast Heritage Trust
MCHT.org



Wisconsin Office of Outdoor Recreation
OutdoorRecreation.wi.gov

About The Harbinger Consultancy

For more than 30 years, Harbinger has worked with small cities, rural communities and organizations that support local heritage and culture, conservation, education, outdoor recreation and public lands. Our collaborative research and community economic development approach uses tools such as regional economic analysis, impact projections, studies of economic contributions, visitor and resident surveys, outdoor recreation assessments, and peer area reviews. Since 2020, Harbinger has offered virtual courses to build capacity for this kind of work amongst the staff and volunteers of communities and organizations in these spheres.

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Chapter 1

Building Local Capacity to Make a Case for Outdoor Recreation

Across the U.S. and Canada, many trails, preserves, recreation areas, visitor centers, museums, historic sites and heritage areas are managed and promoted by small-to-mid-sized organizations, agencies and partnerships led by all-volunteer boards or small staffs with significant volunteer support. Groups like these can be short on resources to hire a consultant to spearhead research about visitors and recreational users, and the know-how to collect and analyze their own data. That means they may miss out on the many ways in which understanding visitors and users can help their organizations better plan, educate, promote, manage and advocate.

Better understanding visitors can help organizations in many ways. Here are a few:

- Make a case for funding or community support.
- Manage existing facilities and plan for expansions or developing new ones.
- Craft and evaluate marketing campaigns.
- Understand user conflicts.
- Shape and assess programming.
- Identify opportunities for entrepreneurship or business growth.
- Influence how visitors behave — ranging from outdoors to in communities.

This guide and toolkit details ways in which these smaller organizations can conduct visitor and user research, supporting this “do-it-yourself” approach with guidance, templates, equations and examples, as well as an extensive resources section. It also focuses on how to analyze and use the results of this research in three key ways: estimating economic impact, communicating about community and economic benefits, and informing management and planning.

We use plain language in this guide, translating technical concepts for people who are not researchers or economists. While the guide is intended to work as a standalone document, live and recorded webinars provide additional support for using and adapting these processes. If you have further questions or would like to explore how you can tap into coaching or other sources of support, please contact Michele Archie, The Harbinger Consultancy, michele@harbingerconsult.com.



Chapter 2

First Steps in Visitor Research

At its heart, visitor research is simply the quest to learn more about people.

In this guide, “visitors” are people who use trails and recreational facilities, explore places like parks, or attend related events. You can use similar research methods to learn about residents, business owners, and others.

This is not the kind of research you need a Ph.D. to do. This guide aims to help you learn how to conduct specific types of visitor research in ways that are valid and reliable enough so you can be confident in what you learn, use your findings, and explain how and why you got to the conclusions you draw. There are some potential gaps and pitfalls in this kind of research, and the guide also covers how to handle these when doing it yourself.

Step 1: Get clear - identify and prioritize your aims

What’s on your “want to know about” list? What do you want to learn? Here are some common things you might want to know about your visitors:

- Visitor numbers — how many users or visitors, and when (e.g., time of day, day of the week, season).

- Characteristics of typical visits — who are visitors traveling with, what they do, when and why they do it, are visitors staying overnight.
- Geography of typical visits — where else do visitors go on their trips (e.g., other nearby communities), are they passing through or is our community their destination.
- Visitor demographics — like age, gender, place of residence, ethnicity, income levels.
- Visitor perceptions and satisfaction — with factors like maintenance, security, cleanliness, interpretation, programming
- Spending related to visitor. activities — defining what visitors spend money on, how much they spend, and where they spend it.
- Importance to travel decisions — are visitors coming primarily for your site/trail/event.
- Local perceptions — of visitors, facilities, programs.
- Use patterns — user conflicts, “traffic jams,” areas of resource pressure.

What’s on your “want to know about” list? Start a list now - you can refine it later.

Step 2: Ask why

Once you have a sense of what you want to know more about, identify why each item on your list is important. “Because” is a magic word in designing your research. It helps you focus on what is most important, see how your questions fit together, and set priorities. Some examples:

- We want to know how visitors use our trail system and what they want more of because we are planning an expansion.
- We need to know who our visitors are, where they are coming from and how they get their travel information because we want to market to them better.
- We want to know how visitors heard about us because we want to know whether our promotion is working.
- We want to know how much visitors spend because we want to estimate our economic impact on our community.
- We want to know what visitors learn from our programs because we want to improve them and raise money.
- We want to know which/how recreation sites in our region overnight travelers visit and which/how many are visited by day visitors because we want to design itineraries that will encourage more visitors to stay overnight.

What are your “whys”? Try to identify the “because” for each item on your list. Cluster items together if the reasons for wanting to know about them are similar.

Step 3: Probe for greater clarity

Ask more questions to get clearer about what you want to learn and why. Here are three that can help:

What are your assumptions? Visitor research helps test assumptions, which aren’t always reliable for planning or strategy. Which assumptions should you explore, and what makes you doubt them?

- We think that most of our visitors are families from the surrounding area who come for something to do on a Saturday *but we don’t really know.*
- We have always thought that only a handful of repeat offenders cut the switchbacks on our trail system, *but now it seems like the problem might be more widespread.*
- We have been using the same way to count visitors since 1993, *but we suspect we’re not capturing everyone.*

What are your goals? Organizations like yours invest time and money in visitor research for a reason. The “why” answers you provided in step 2 can help guide you in making sure your goals are clear.

- We want to help to attract more overnight visitors to our community to support local businesses. Our downtown is struggling, and we think outdoor recreation could help. Plus, we want our organization to be known as working with the business community to find solutions.

- We have seen that the programs we offer fill up quickly. We want to ensure they also improve visitors' understanding of our ecosystems and influence their behavior.
- We're planning new parks and trails and aim to invest in areas where locals will really use and appreciate the facilities..
- We want to make a case for the economic impact of our trails to build support among local government officials, partners and funders.

What are your questions? Identifying the most important things that you know you don't know is another way to gain clarity.

- We mostly promote on Facebook but are we reaching people who haven't visited our recreation area before?

- Do new paddlers feel comfortable on our water trail?
- What would encourage mountain bikers or quad riders to dine in town during their trip?

Step 4: Prioritize

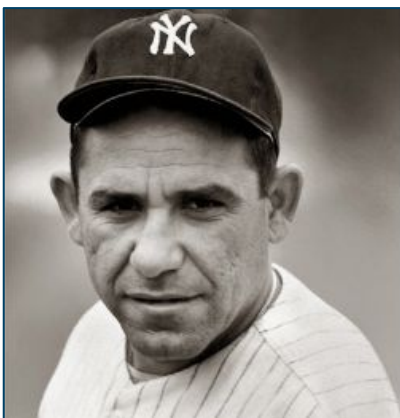
Think of steps 1, 2 and 3 as a funnel to help you refine what you most want to learn about your visitors—or prospective visitors. Now, having expressed your inner five-year-old with a whole spate of questions, write a short (one sentence to one paragraph) summary of your aims. What do you want to learn about and why?

Next, make a list of your top two or three questions in order of priority.

Revisit and revise these questions as you design your research. Focus on what's most important, how to answer it, and whether the research is feasible for your organization.

One Core Idea

Curiosity first. Advocacy second.



You can observe a lot by just watching.

— Yogi Berra

Keep an open mind. You may have a great sense of what you are going to learn. You may even be right. But don't build your research to confirm that.

Build your message on the facts, not on what you want the facts to be.

Study to learn, not just to advocate. What you learn might help you fine-tune programs, identify issues and solutions, and ask new questions.

Step 5: Design your research

Chapters 3-6 will teach you how to design and use basic visitor research tools, helping you plan your research. This section includes key questions to consider before diving into research techniques.

MVR - Minimum Viable Research

In startups, MVP (Minimum Viable Product) refers to a basic version of a product used for testing and refining ideas. Think of your research similarly.

Before you commit to doing new visitor research, ask whether you can meet your aims—or some of your aims—using information that already exists. Look internally first. Is there anything you can learn from your membership data? Have you done surveys or visitor counts that might hit on part of what you're looking for? Do other local organizations have helpful information?

Once you know what kinds of information you already have or can collect locally, look for regional data or information from a comparable community. We'll go deeper into how to find these "secondary" data in Chapter 3 because they can also play an important role when you do your own visitor research.

You might be able to answer your most important questions or fulfill key objectives by using information that you can gather more easily than doing your own data collection. This could eliminate the need for new research, cut down the

amount of research needed or lend a sharper focus.

You may still choose to conduct your own research after reviewing available and missing visitor data. Even then, reviewing existing data first is wise. You will almost certainly combine primary data that you gather directly about your visitors with secondary data gathered from other sources when you're constructing your study, analyzing data and communicating about your findings.

While potentially rewarding, collecting data about your visitors will require an investment of time, attention, effort and possibly money. Looking at alternatives is a smart way to weigh the need for that investment.

Primary & Secondary Data

Primary data

Information that you gather directly about your own visitors. Examples: visitor counts, visitor survey data, parking lot observations, focus groups of visitors, or visitor postal codes. You will analyze this information yourself and determine what it means.

Secondary data

Collected by someone else. Secondary data has often been analyzed and interpreted already. Examples: local, state, provincial or federal government data sources, published articles, industry data like airline arrivals, and economic impact projections or visitor studies for similar facilities or communities.

Research Design Considerations

If you decide to do your own visitor research, here are five things to consider:

1. Will this be ongoing data collection, a periodic effort, or a one-time project?
2. Who do you want to learn about? Are there sub-groups that are most important, like local users, underrepresented populations, out-of-area visitors, seasonal users, families with children, overnight visitors, specific recreation groups like equestrian trail riders or long-distance bicycle tourists?
3. Are you seeking quantitative data (numbers) and/or qualitative information (like perceptions or stories)? Quantitative data answers questions like “how many,” “where,” and “how much.” Qualitative data answers questions like “why,” “how,” and “what happened.”
4. Which research tools will help answer your most important questions and aims?
5. Who will be involved? What resources do you have to work with? What can staff, volunteers, partners, your community, educational organizations, local government, and others contribute? Does this need to be a collaborative effort (e.g., collecting data from sites across a large trail system)?

Start to make some notes now. Then read through the rest of this guide to familiarize yourself with different research tools. Afterward, come back and revisit your research design, filling in the blanks with specific tools and strategies. Be open to changing your approach as you learn more, and even to rethinking your priorities.

Steps in Visitor Research & Analysis

1. Identify and prioritize your key questions and aims.
2. Design your research.
3. Collect data - primary and secondary sources.
4. Fine-tune your approach as data come in.
5. Analyze and make sense of data.
6. Put your findings to work - reports, plans, slide decks, social media, newsletters, one-pagers, talking points, management changes.

Keep Your Resources and Capacity in Mind

Don't overcommit! Now that you've identified your most important questions, take some time to decide whether you can answer them—well enough, at least—using information that you can already access.

Collecting your own data will require investing resources like time, money, volunteer effort, community support, stakeholder interest, etc. Make sure you're biting off a piece of visitor research that you can—and need to—chew. See the next chapter for ideas.



Photo: U.S. National Park Service

Put It Into Action

1. What's on your "want to know about" list?
2. Why?
3. What's your "because"?
4. Clarify and prioritize.
5. Start thinking about your research design.

Research Design Examples

These projects will be used as illustrative examples throughout this guide.

Harlem Valley Appalachian Trail Community, New York

This nonprofit group advocates for the trail, does outreach and education, supports conservation, maintains the trail and surrounding natural areas, collaborates with the indigenous Schaghticoke on cultural preservation and promotes business connections with trail visitors.

Overarching questions

- What and how much do Appalachian Trail (AT) hikers contribute to the local economy?
- What can local businesses and communities do to generate more revenue from these hikers?

Specific questions

- Who visits the area to hike on the AT, and is hiking their main reason?
- How long do they stay, what do they do, and how much do they spend while they are here?
- What can we improve to encourage them to return or stay longer?
- What is the best way to communicate with hikers?

Target audience

- AT hikers (day hikers, overnight hikers, long-distance hikers).

Research tools

- Hiker survey (Appalachian Trail and other recreation visitors).
- Info from and collaboration with county tourism research.
- Collect postal codes from local businesses & event organizers.
- Engage local business owners and site managers to help interpret data and define visitor types/priority markets.



Photos: Harlem Valley Appalachian Trail Community

Club Vélo2max, Quebec

This competition club manages the Saint-Félicien Mountain Bike Center, featuring over 65 km of single and double track trails, including the renowned Le Crans, Quebec's Slickrock.

Overarching questions

- How and when are our mountain bike trails used?
- What information about trail use can support grant applications?

Specific questions

- How do trail user counts compare with ticket sales?
- What is our total number of visitors?
- How does trail use vary by time

Target audience

- Mountain bike trail users.

Research tools

- Trail counters.



Photo: Club Vélo2Max

Letchworth Gateway Villages, New York

A municipal collaboration to fuel economic growth and regional cooperation in the region surrounding Letchworth State Park in western New York.

Overarching questions

- How can adjacent communities benefit from growing park visitation?
- What visitor segments will be attracted to the region's assets and help sustain local quality of life while still generating economic growth?

Specific questions

- Who visits our region? What attracts them to our area?
- How long do they stay and how much do they spend?
- What can we improve to enhance the visitor experience?
- What is the best way to communicate with visitors?

Target audience

- Visitors from >25 miles away including visitors to Letchworth State Park.

Research tools

- Visitor surveys (2017, 2021). Gather data from state/regional tourism studies, travel trends, decision-making, and demographic market research.
- Regional social media market research.



Photo: Larry Tetamore

Kansas Association of Trail Stewards, Kansas

This new alliance of trail communities is using trail counts and a visitor survey as a community engagement strategy.

Overarching questions

- How accurate is a recent economic impact study of state trails in Kansas for communities along a specific trail?
- How can trail communities boost the community benefits and economic impacts of the trail?

Specific questions

- Who uses this trail?
- How long do they spend on the trail and where do they go?
- What else do they do in our communities?
- How much do trail users spend in our communities?
- How many people use the trail each year?
- What do trail users think of the trail and our communities?

Target audience

- All trail users.

Research tools

- Trail user survey.
- Trail counters.
- Collect data and insights from local and regional tourism and outdoor recreation organizations.

Image: Kansas Association of Trail Stewards



Lower Rio Grande Valley Active Plan Coalition, Texas

This broad coalition of local governments, public health organizations, educational institutions, conservation groups and local businesses spearheaded the development of a comprehensive plan for trail development and connections for active transportation and tourism.

Overarching questions

- How could building an active transportation network affect resident activity levels and community health and healthcare costs?
- What might the future economic impacts be of building a network of multiple-use trails, on-street bicycle routes and paddling trails?

Specific questions

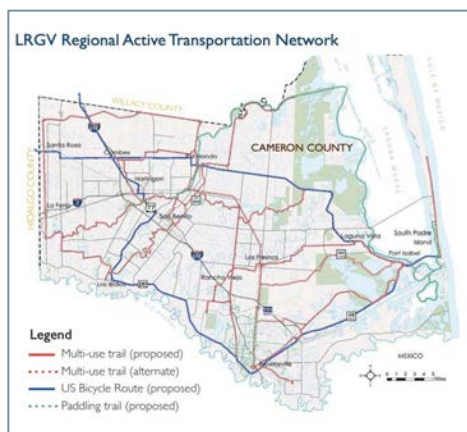
- How does having nearby trails affect physical activity levels?
- How does that translate into healthcare cost savings?

Target audience

- Local and out-of-area trail and bicycle route users (and potential users).

Research tools

- Long-term local health data collection by a university school of public health.
- Studies of the correlation between physical activity levels and healthcare costs.
- Studies of other trail systems and bicycle tourism destination.
- Construction cost estimates for the proposed trail network.
- Interviews with community health workers, business owners, outdoor recreation managers and coalition partners.



Images: Brownsville CycloBia, Rio Grande Active Plan

Mountain Biking in Squamish: Social, Cultural & Economic Impacts

Larose Research & Strategy led this study for the Squamish Off-Road Cycling Association (SORCA), which was interested in understanding the economic, social and cultural impacts of rapidly expanding mountain biking activity in the region.

Overarching questions

- What are the community benefits of mountain biking in this region, which is widely known as one of the best mountain biking areas in the world?
- What are the effects of mountain biking on ecological stewardship, Indigenous reconciliation and other issues of concern?

Specific questions

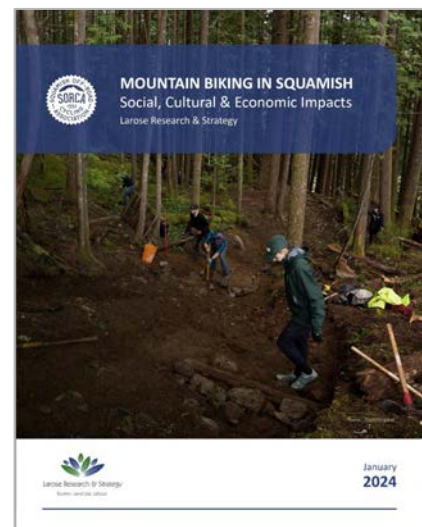
- What are the economic impacts of visitor and resident spending associated with mountain biking?
- How does mountain biking support the Squamish community? How does it challenge it?

Target audience

- Local and out-of-area mountain bike trail users.
- Area residents.

Research tools

- Rider intercept surveys.
- Self-administered online surveys for SORCA members, the general public and trail users
- Manually conducted rider counts at a sample of locations.
- Comparison to similar research conducted seven years prior.





Chapter 3

Using Secondary Data Sources

Feeling overwhelmed? Don't worry—you may not need to conduct original visitor research! This chapter shows how to find and use existing data to answer your questions.

Once you know what you want to learn about outdoor recreation visitors, explore whether existing data can help. It may eliminate the need for new research or narrow its focus, clarify your questions, or offer models to update or replicate.

Primary Data vs Secondary Data

There are two types of existing data: primary and secondary. (See the distinction on p. 8.) There's no quiz here. We won't ask you to identify whether any bit of information you use in your research is primary or secondary. This is simply a helpful framework to help structure how you think about data, how to collect it, and its usefulness for answering your questions. Plus, it's good to be familiar with this terminology as you enter the world of visitor research.

Looking for Data Internally and Close to Home

Look internally first, and expand out to your community or surrounding region to find out what you may already know, have clues about or easily find out.

Internally, do you have membership data that might help? Visitor counts or estimates? An existing visitor survey (even if it's old)? Planning or marketing studies? Feasibility studies? Grant reports?

Who else might have close-to-home information related to your questions? Here are some ideas; governments, tourism organizations, recreation clubs, universities, apps like Trailforks or Strava, and local chambers of commerce.

Take time to brainstorm where you might find useful insights within your organization or local community.

Primary Data

Original data that is collected firsthand by a researcher or organization.

Typically real-time, current data (though may also include historical data such as visitor counts collected over time).

Can be involved to collect, process and interpret, and may require significant investment of time, effort, money and/or other resources.

New data can take a long time to collect, process and interpret.

Specific to your needs, and typically more reliable than data collected for other purposes.

Secondary Data

Information that has been collected, processed, and published by sources other than the researcher or organization.

Most often past data, though can also be current (e.g., a current visitor survey conducted by a local tourism agency)

Generally quick and easy to access and use, although may require interpretation for your specific use. Can be more economical than collecting original data.

Can cut the time needed because it has already been collected and analyzed.

May or may not be specific to your needs, and therefore relatively less reliable for drawing place-specific conclusions.

Some examples

Conducting a survey at a park to gather information about your visitors' preferences, satisfaction levels, activities engaged in, and demographic information.

Installing trail counters to gather information about numbers and types of trail users.

Focus group with local business owners about the importance and impact of hiking tourism.

Surveys and market research reports conducted by outdoor gear manufacturers, tourism associations, and recreation service providers on consumer trends, spending habits, and outdoor recreation preferences.

Published studies from similar areas that suggest an estimated number of trail users per mile.

State or provincial study of paddling tourism.

Expanding Your Search

If you haven't answered all of your questions through this close-to-home search for data, expand your search to other sources. Here are some general places to look. For many of these, remember to look for equivalents at the local, state, provincial and national levels. You'll find more specifics in the Resources section at the end of this guide.

Tourism/visitor data

- Tourism agencies and visitor centers.
- Chambers of commerce.
- University recreation and tourism departments (research reports, theses, dissertations).
- Economic impact studies from other parks or recreation areas.
- State, provincial recreation, public lands, and tourism divisions.
- Outdoor recreation spending by activity.

Recreational use data

- Trailforks.com.
- Strava global heat map.

Data that cross multiple categories

- Cooperative Extension.
- Government data (e.g., U.S. Census Bureau, Statistics Canada, equivalent state or provincial agencies).

Studies and plans with potentially useful data

- Outdoor recreation facility studies.
- Recreation and community master plans.
- Visioning reports.
- Economic development plans (municipal or regional).



*Photo: Aleksey/
Adobe Stock*

- Studies by academic business, economic, tourism and recreation research programs.
- Other feasibility plans, economic impact studies, parks & recreation studies, publicly available business plans, business needs assessments, market studies.
- Project scoping documents.
- Outdoor recreation participation studies and plans (e.g., SCORP — Statewide Comprehensive Outdoor Recreation Plans, and related public survey and other research, such as ORCBC annual Ipsos polls).
- State, provincial or regional outdoor industry studies and plans.
- Rails to Trails Conservancy webinar on [leveraging trail use trends data to make the case for trails](#).
- Comprehensive Economic Development Strategy (CEDS).

Socio-economic data

- Headwaters Economics [Economic Profile System](#)

Using secondary data

Secondary data can be highly useful. You might answer your questions or build your case using existing data, combining your organization's information with external sources, or relying entirely on outside data.

Studies from other areas can help estimate and project visitation. For examples, see Chapter 7.

You may also find surveys, studies and reports that you can use as the basis for an update or as models for your own work.

When using secondary data, try to pick studies conducted in your region or from situations that are similar to yours in key characteristics such as population size, scale of visitation, type and scale of trails or other recreation resources, proximity to urban areas, etc.

If you are using secondary data to fill local data gaps, make sure the studies have the information you are missing.

How old is too old? Data collected over time can be used to analyze trends, of course. But if you are looking for current information, try to focus on studies not older than 10 years. This is not a firm rule — older studies can be useful or more recent studies can be outdated depending on whether there have been significant changes in the intervening time.

Do You Still Have More to Learn?

After you have explored the answers and insights you can find through your own organization, sources close to home and secondary sources from other places, you may still have outstanding questions. This is a good time to revisit your priorities and research design. If you take stock and decide you need new information about or from your visitors, you will need to collect your own primary data. The next three chapters will walk you through the basics of some key do-it-yourself approaches.

Blending Primary & Secondary Data

The Waco Mammoth Fact Sheet

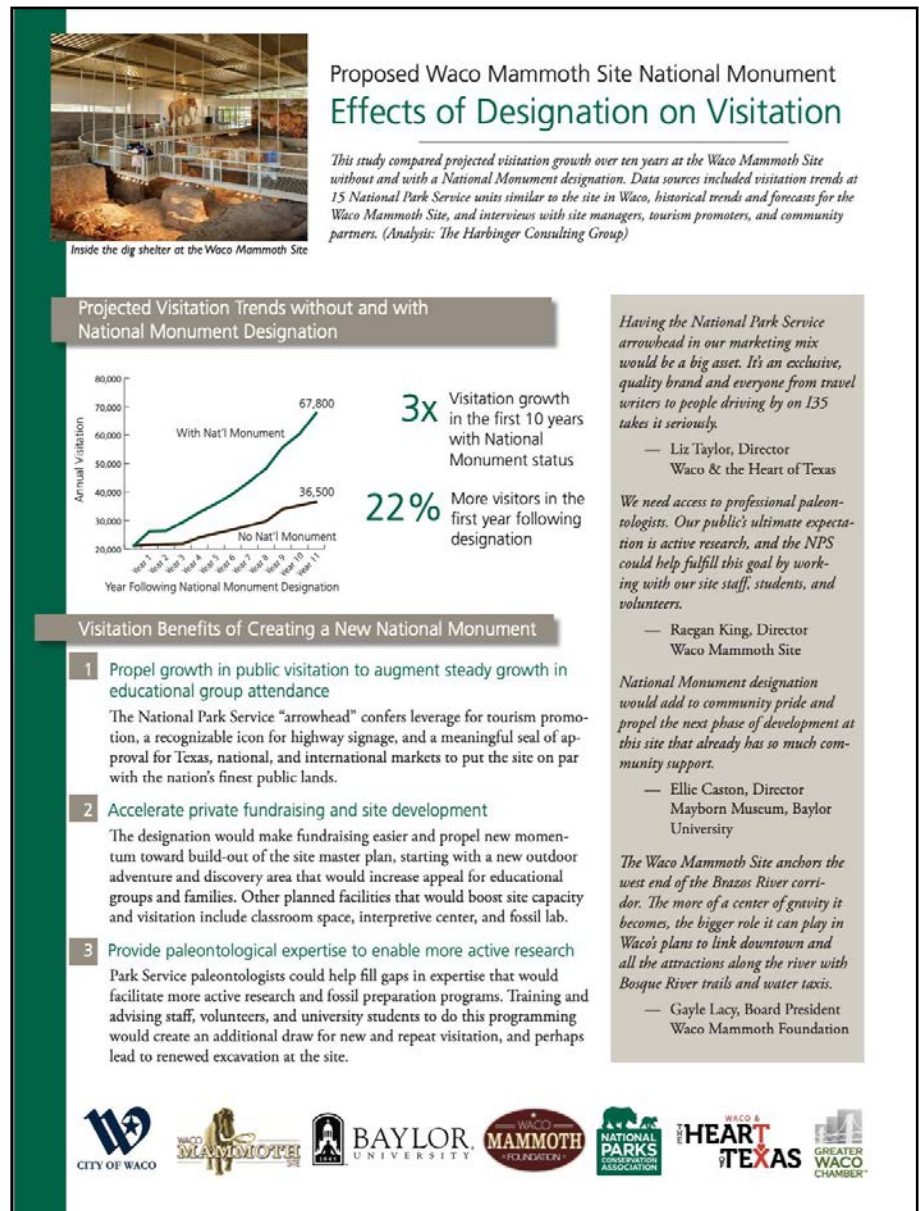
The analysis behind the projected visitation growth in this fact sheet relied on two sources:

Primary data

Visitor numbers collected at the Waco Mammoth Site when it was operated by the City of Waco and Baylor University formed the baseline for the analysis, providing a starting visitation number and also growth trends used to create the 10-year visitation projections without National Monument designation.

Secondary data

Visitation numbers from the first 10 years after designation of several similar National Monuments and other National Park Service units provided an average growth trajectory used to create visitation projections for the first 10 years after Waco Mammoth's designation as a National Monument.



Research Design Examples

Using Primary and Secondary Data

Project	Primary Data	Secondary Data
Harlem Valley Appalachian Trail Community, New York	• Hiker survey (Appalachian Trail and other visitors). • Add four questions to county tourism survey. • Gather zip codes from local businesses and events. • Involve business owners and site managers to interpret data and identify key visitor types.	• Other info from county tourism visitor survey and other research.
Club Vélo2max, Quebec	• Trail counters.	
Letchworth Gateway Villages, New York	• Visitor survey (2017 and 2021) • Regional market social media research.	• Insights from state, provincial and regional tourism studies, travel trends, decision-making, and key demographic market research.
Kansas Association of Trail Towns, Kansas	• Trail user survey. • Trail counters.	• Data and insights from local and regional tourism and outdoor recreation organizations.
Lower Rio Grande Valley Active Plan coalition, Cameron County, Texas	• Interviews with community health workers, business owners, outdoor recreation managers and coalition partners.	• Local health data from a university public health school. • Studies on physical activity and health care costs. • Research on other trail systems and bike tourism. • Construction cost estimates for the proposed trail network.
Squamish Off-Road Cycling Association	• Rider intercept surveys. • Online surveys for mountain bike association members, the public, and trail users. • Manual rider counts at select locations. • Rider volume and data from Trailforks.	• Similar research conducted seven years prior.



Chapter 4

Counting & Estimating Visitor Numbers

Visitor counts and estimates can answer a variety of questions and be useful in a number of ways for recreation organizations, agencies and partnerships that manage trails, natural and recreation areas, historic sites and heritage areas. These include:

- Tracking visitation/use trends.
- Shaping management.
- Planning for new facilities.
- Identifying pressure spots, potential overuse for visitor management monitoring and planning.
- Generating information to feed into an economic analysis.
- Supporting funding proposals for maintenance, expansion, and visitor management.
- Communicating with stakeholders, supporters, funders and others.

When counting visitors, decide whether to take a one-time snapshot or collect data over time (continuously, monthly, quarterly, etc.). Your research goals, capacity, visitor pattern changes, and data use will guide this choice.

Consider if long-term data collection could support future efforts and how current systems can aid ongoing research.

Counting Visitors at Trails & Recreation Areas

For most small organizations managing trails and outdoor recreation areas, on-the-ground visitor counting is the most reliable way to understand user numbers. There are two approaches: automated, which relies on electronic counters or cameras for short-term or long-term data collection; and manual, which extrapolates from counting sessions conducted by staff or volunteers trailside or at area entrances.

Keep in mind that humans are not yet obsolete in the world of trail user counting. Even automated data should be checked against manual counts for accuracy, and automated systems may not distinguish user types, requiring in-person observations. A hybrid approach combining automated and manual counts is effective.

See the Resources section (p. 77) for more guidance, how-tos, and templates.

Manual Counts

Station staff or volunteers at strategic points along a trail or at parking and other entrance areas to a recreation area to manually count users. These individuals can use tally counters or simply keep track on paper or an iPad. This method provides real-time data and can collect other information about trail users such as mode of transportation, group size, and number of adults and children.

What you need to know

- Materials are simple: A watch or a phone with signal at the site (to track observation times), clipboard, pen or pencil, manual count record form, simple instruction sheet for volunteers.
- If you are using counts to calibrate data from automatic visitor counters, plan to conduct at least 10 hours of manual counts per year at each location. In this case, spreading out your counting times is not as important as it is if you are using the counts to estimate visitor use.
- If you are using manual counts to extrapolate annual visitation, you will want to collect more data. As a guideline, having data for at least one full year, with counts taken at regular intervals (e.g., daily, weekly, monthly), can provide a good basis for extrapolating annual trail use. How many hours of counting and at how many different locations depends on several factors including the variability of trail use throughout the year, the accuracy of the counting method, and the desired level of precision in the extrapolation.

Automatic Electronic Counters and Cameras

Electronic counters, like infrared sensors or pneumatic tubes, can be installed at trailheads to automatically count users. These provide accurate data with minimal supervision but should be calibrated annually against manual counts.

Setting up trail cameras at different points along the trail can capture images or videos of trail users. These cameras can be equipped with sensors to detect movement and automatically record data. Trail cameras are particularly useful for remote or less-accessible areas. Using video to manually count trail users can be more reliable than in-person counts conducted in the field.

What you need to know

- Locating and correctly installing trail counters plays a big role in the effectiveness of data collection. Look for guidance from the equipment manufacturer or others with experience. Generally speaking, choose locations close to trailheads but away from places people congregate, facing trail traffic and away from other traffic.
- Portable trail counters can be moved around a trail system to collect blocks of data in different locations.
- Trail counters should be checked once or twice a month to make sure the sensors are working properly and not blocked, and that everything is intact and working properly.

Dealing with Privacy Concerns

Follow these five tips to manage privacy concerns that can come up when using cameras to count trail users.

- **Inform and notify:** Clearly communicate about the presence of surveillance cameras through signage or information boards.
- **Minimize data collection:** Only collect necessary data for trail counting purposes and avoid capturing identifiable information.
- **Secure data handling:** Store collected data securely, anonymize where possible, and implement strict access controls and encryption.
- **Compliance and transparency:** Ensure compliance with privacy regulations, be transparent about data collection practices, and encourage public feedback.
- **Regular review and education:** Conduct regular audits of camera systems, review procedures periodically, and educate staff on privacy best practices.

Buy, Borrow or Piggyback?



Counting visitors can get expensive, though the cost can be spread across long periods of time and lots of visitors counted. Pedestrian counters can cost \$750 to \$4,000 each. Bicycle counters can cost around \$1,600. The Trafx infrared package with 3 counters, data dock and more runs \$2,200-\$2,600 plus around \$500/extra sensor.

- **Invest in your own** (portable or permanent) with organization funds, grants or sponsorship.
- **Borrow or share gear.** Trail advocacy organizations, recreation agencies, local governments, and university recreation management or biology departments are among organizations that may own portable counters.
- **Partner** with someone who wants to do trail research like a graduate student. Help them monitor the counters in exchange for access to data.
- **Make your own** trail camera or trail counters. Searches like “build your own trail counter” will turn up ideas and instructions. Trail advocate, Loren Konkus, offers in-depth how-tos [here](#).

To Augment or Replace Counting Users

If on-the-ground counting isn't feasible or you want more context, here are five alternative methods:

Parking lot counts: Monitoring the number of vehicles in trailhead parking lots can serve as an indirect indicator of trail usage. Managers can use this information to estimate the number of users accessing the trail system or area. When collected consistently over time, these data can also indicate use trends that may help management.

Trail registers: Use sign-in sheets at trailheads. Although reliant on user participation, they offer valuable data, especially in low-tech areas.

Member or social media survey: Survey members or post on social media to collect self-reported use data. This method also relies on user participation, but may be especially useful for gauging trends.

Aerial observations: Use drones or aircraft for periodic surveys, complementing ground counts and spotting issues like overcrowding.

Ticket sales, donations and memberships: These data can help managers identify historical patterns and trends in visitor numbers.

Trailforks, Strava, cell phone, GPS data and social media: Fitness apps like [Trailforks](#), Strava, and GPS data provide insights into trail usage trends. Trail managers can collaborate with app developers or access public data.

Trailforks offers downloadable data for trail associations, and [Strava Metro](#) shares data with urban planners and trail advocates. While advanced for beginners, these sources are worth exploring with expert help. See “Using Novel Data Sources” in the Resources section for more details.

Chatbots for Collecting Data

[An Introduction to Visitor Use Monitoring Methods in Wilderness](#) suggests developing chatbots for data collection via text or social media. A 2021 article by McDaniel highlights how US Forest Service researchers used chatbots with trailhead signs in partnership with National Forest managers.

“The signs prompted visitors to message with a chatbot to report the number of cars in the parking lot. Text messages were sent to an automated system that stored the response in a project database for later analysis. Chatbots also have the capacity to provide more survey questions if the visitor chooses to continue to engage. This type of automated messaging also presents an opportunity to distribute a variety of information alongside the survey questions, including ways for the visitor to get involved in wilderness stewardship or stay updated on wilderness news.”

Counting Visitors at Visitor Centers, Museums and Other Controlled-Access Sites

Many of the visitor counting strategies that work for parks and trails can also be used or adapted to controlled-access sites such as visitor centers.

Manual counts

Though old-fashioned, manual counting is effective and affordable. Staff or volunteers can tally visitors with clickers or counters. Consistent recording is key, and periodic counts can be used to extrapolate visitor numbers.

What you need to know

- Materials can be as simple as a click counter or a tally sheet. Tally sheets can provide information in addition to numbers (e.g., mode of transportation, group size, number of adults and children, and other visitor characteristics).
- Provide instructions and training for staff and volunteers to ensure consistency.
- Similar to trails, you can use counts to calibrate data from automatic visitor counters. In that case, plan to conduct at least 10 hours of manual counts per year.
- If you are using manual counts to extrapolate annual visitation, you will want to collect more data. As a guideline, having data for at least one full year, with counts taken at regular intervals, can provide a good basis for extrapolating annual use. Make sure you cover periods of differing visitation levels (e.g., different times of day, days of the week, seasons).

Resources

See resources for manual trail counting above for templates to adapt for counting tracking forms.

Automatic electronic counters and cameras

Similar to trail counting, automatic counters can be used in visitor centers and museums.

Electronic people counters: Installing electronic counters at entrances and exits can provide accurate visitor counts. These devices use sensors to detect movement and can differentiate between incoming and outgoing traffic. Initial setup costs can be low, and electronic counters can be a cost-effective long-term solution. There are do-it-yourself instructions for building people counters available online.

Video analytics: Video cameras equipped with analytics software can be used to count visitors by tracking movement in designated areas. While this method may involve higher initial costs for equipment and setup, it can provide detailed insights into visitor behavior and demographics. This level of analysis may require manual analysis or programming to analyze video data.

Other methods for counting or estimating visitor numbers

Visitor logs: Implementing a visitor logbook where individuals sign in upon entry can provide a basic count of visitors. While this method relies on visitor participation, it can be a cost-effective solution.

Ticketing systems: Ticketing or admission systems that automatically track the number of tickets sold or scanned can offer a reliable way to count visitors, even if there is no charge for admission. Many ticketing solutions come with reporting features that make it easy to monitor visitor numbers.

Parking lot counts: See detail above, in the Trail Counts section.

Counting Visitors at Events

Small event organizers can use several methods to estimate visitor numbers:

Ticket sales and registrations: If the event requires tickets or registrations, organizers can count the number of tickets sold or registrations received.

Physical count and monitoring: Use hand-held clickers or automated sensors at designated entry points to count attendees. For open, free-access events, setting up entry/exit points aids in tracking.

Aerial photography: Drones capture overhead images to estimate crowd sizes. Image analysis software helps estimate attendance, and taking images at intervals tracks fluctuations.

Physical counting at specific areas and times can help validate the estimates produced through aerial photography. Note: Ensure that your use of drones and aerial imaging complies with privacy regulations and local laws, and obtain necessary permits and permissions especially if the event is held in a public area.

On a Budget?

Counting event participants using aerial photos doesn't have to cost a lot. Use open-source image processing and computer vision libraries such as [OpenCV](#) (Open Source Computer Vision Library) and [TensorFlow](#), or partner with researchers or students from a local college or university. Search for do-it-yourself tutorials online to learn how to build simple object detection systems using affordable hardware such as Raspberry Pi and USB cameras. Or engage volunteers to help analyze photos.

Pre-event surveys and RSVPs: Gauge interest prior to an event. However, it's important to note that not all respondents may actually attend.

Social media and marketing analytics: Monitoring social media engagement, and website traffic can give organizers an indication of interest and potential attendance. Over time, tracking this information can illuminate trends in interest and engagement.

Vendor and exhibitor estimates: If vendors or exhibitors are part of the event, organizers can solicit estimates from them based on their interactions with attendees. This could be done as part of an event evaluation process.

Engaging Visitors to Help You Count Them

There are many creative ways to incorporate a function or attraction at an open-access outdoor event that can help attract a large share of attendees and facilitate easier counting.

Bonus—they can make your events more appealing and engaging!

Here are some ideas:

Interactive installations such as photo booths, art displays, or games that engage visitors.

Live performances or demonstrations like music, cooking demos, or art workshops to draw crowds.

Food and beverage stations are natural gathering points for attendees.

Interactive maps or guides encourage exploration of the event space.

Contests or raffles can help organizers collect attendee info and attract crowds for easier counting.

Themed zones that cater to different interests (e.g., wellness zones or kids' areas) to manage counting.

Scavenger hunts or challenges encourage attendees to explore the event space and complete tasks or collect items. This not only adds an element of fun and excitement but also ensures that attendees move around, and come to a common location for instructions or prizes, making it easier to track their presence.

Avoiding Double Counting

Avoiding double counting is crucial for accurately estimating attendance numbers at events. This is less an issue at events where participants register or have tickets than it is for open-air, free-access events. Here are some strategies that free access event organizers can use to minimize the risk of double counting.

Clear entry and exit points: Clearly define entry and exit points to minimize confusion and ensure that attendees are counted accurately upon entry. Organizers can assign staff to monitor these points and assist attendees as needed.

Hand stamps or wristbands: Hand stamps or wristbands, typically used for re-entry, can also count participants. Volunteers can distribute them while recording counts using tally sheets or clickers. Another method is starting with a set number of wristbands and counting those left afterward. A friendly approach explaining the importance of counting can encourage cooperation and create a welcoming atmosphere.

Regular communication with staff and volunteers: Provide clear instructions to staff and volunteers regarding the counting or entry and exit procedures, as well as how to flag instances of potential double counting.

Post-event reconciliation: Cross-reference attendance data from different sources and identify discrepancies or instances of double counting.

Continuous improvement: Evaluate and improve attendance tracking procedures based on feedback and lessons learned from previous events.

Coordinating Data Collection

Estimating visitation often involves coordinating data collection across multiple sites, events, and partners, especially for areas with multiple entry points, trail networks, or regions. A working group can simplify planning and implementation.

Develop standardized protocols: Agree on methods, tools, schedules, and ensure consistency.

Support visitor counting: Invest in necessary technology and infrastructure.

Offer training and build capacity: Equip volunteers with the skills to collect accurate data using consistent methods.

Share and integrate data: Use shared formats and databases, with confidentiality agreements as needed.

Data analysis and reporting: Aggregate data, identify trends, and create reports or dashboards to communicate findings.

Evaluate and Improve: Assess your visitor counting methods, gather feedback, and make adjustments as needed.

Analyzing Visitor Count Data

Start by checking for completeness, cleaning, and organizing the data. For photographic data, manual review or coding (ChatGPT can help) may be necessary. You may be looking for basic statistics like totals and averages. You could also do other types of analysis, including:

Temporal analysis: Analyze the data over time to identify seasonal patterns, trends, or fluctuations.

Spatial analysis: Explore spatial patterns by analyzing counts across different recreation areas, trail segments, or regions. Use GIS tools to map usage patterns and identify hotspots.

Correlation analysis: Examine factors like weather, trail characteristics, or events that influence visitation.

Predictive modeling: Develop predictive models to forecast future visitation based on historical count data and relevant predictors.

Looking for Analysis Advice?

- Ask for advices from counter manufacturers and data processing or statistical analysis experts.
- [Calculating Trail Usage from Counter Data](#) by Stephen Martin explains how to calculate trail usage from counter data (complete with equations) and offers insight into locating counters for accuracy.
- Pair data with information from manual counts, user surveys, and other data collection.

Research Design Example

Leveraging Visitor Count Data

Club Vélo2Max

Club Vélo2max, a Québec mountain bike club, manages a 40-mile trail network. Previously relying on membership data and ticket sales to track usage, they added two trail counters to better understand popular trails, usage patterns by day and time, and gauge demand for new trail types.

Details

- 40-mile trail network. Most trail access is through a main gate.
- Installed two counters for three months.

Results

Using two trail counters for just three months, Club Vélo2max was able to understand how their trails are used and corroborate membership and ticketing information to estimate annual visitation.

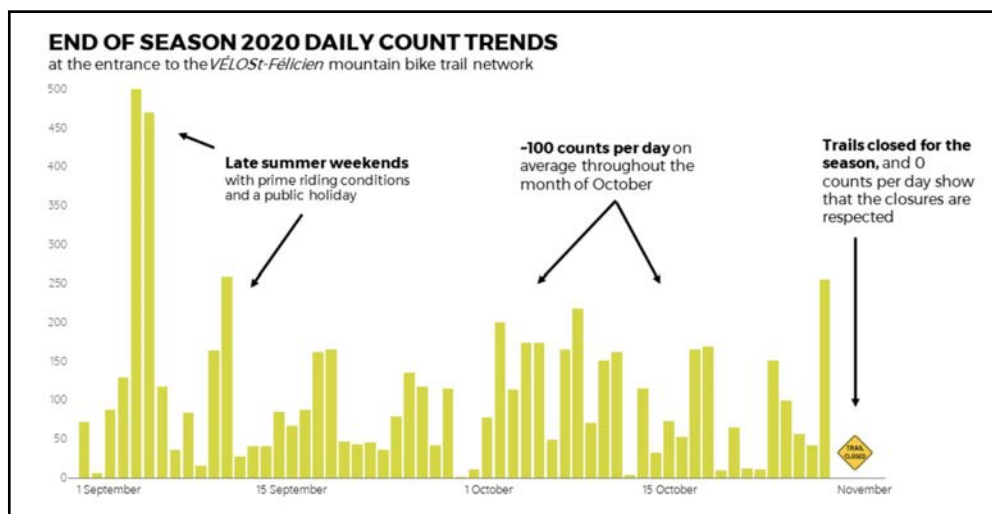
Two immediate uses

1. Changed when the welcome center is staffed, and adjusting trail volunteer hours to cover the busiest times.
2. Used data to support applications for funding.

One gratifying lesson

After the trail network closed for the season at the end of October, trail counters registered no users, suggesting that riders respect the closure.

[Learn more.](#)



Graphic:
Eco-Counter

Chapter 5

Surveying Visitors

Surveys are widely used to learn more about visitors. In this guide, we use “visitors” to refer primarily to the people who use trails and other recreational facilities or visit parks or heritage sites. You may focus on visitors from outside the area, residents, or all visitors. You may also apply what you learn about visitor surveys to learn from event attendees, business owners, landowners, and others.

In Chapter 2, you identified research priorities. As you learn more about methods, revisit these priorities. Clearly defining what you want to learn shapes who you ask, what you ask, when, and how you use the data.

Take a few moments to review your top research priorities, along with what is on your “want to know about” list. Do your questions require more than usage patterns (seasonal, weekly, trail segments)? If you need insights on visitor behavior, demographics, spending, and perceptions, a visitor survey can help.

In This Chapter

1. Develop a Survey Plan
2. Reaching Your Target Audience
3. Sampling
4. Four Low-Cost Survey Data Collection Methods
5. Developing the Survey Questionnaire
6. Conducting Intercept Surveys
7. Promoting Your Survey
8. Analyzing Survey Data
9. Making Sense of Your Findings

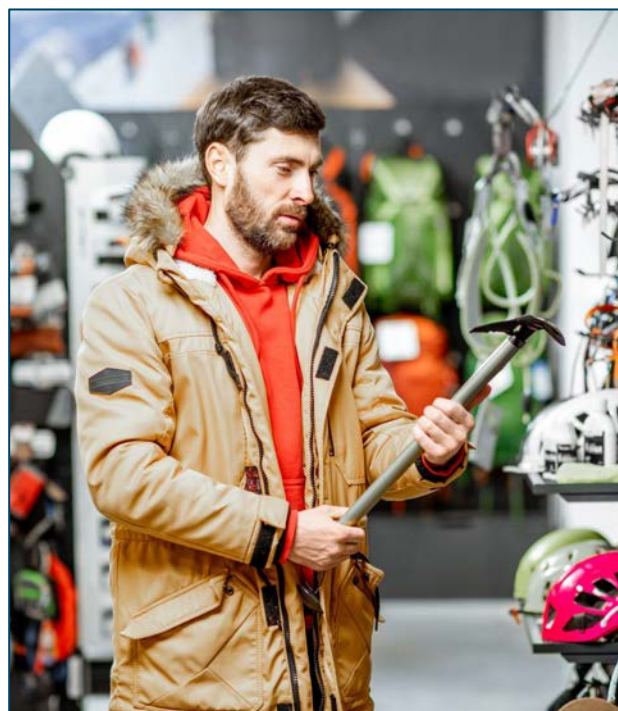


Photo: rh2010/Adobe Stock

1. Develop a Survey Plan

Use this chapter to help guide you in developing a survey plan, paying attention to the kinds of resources you have to support them

Here are nine aspects to include:

1. Goals and main questions.
2. Target audience.
3. How can you get information from your target audience?
4. Which data collection method(s) fit your target audience and the resources you have?
5. When will you conduct the survey?
6. How are you going to promote the survey and encourage participation?
7. Who will analyze survey results?
8. How do you intend to present and use findings?
9. What resources do you have/need?

DIY visitor surveys can be low-cost but still require resources, such as::

- Volunteers or staff to design, coordinate, promote, and analyze the survey.
- Funds or in-kind contributions for printing, design, clipboards, and incentives.
- Locations and collection boxes for printed surveys.
- Social media audiences.
- Mailing/email lists.

In general, a survey design that uses less staff or volunteer time in collecting data will require more resources to support promotion.

2. Reaching Your Target Audience

Common target audiences include:

- Visitors to trails, heritage sites, or natural areas.
- Recreational users (residents and nonresidents).
- Specific recreation types (e.g., cyclists, hikers, motorized users).
- Seasonal visitors (e.g., winter or off-season visitors).
- Potential visitors (target markets or demographics).
- Trail-adjacent property owners
- Guides, outfitters, and visitor service businesses.

Conduct your survey when your target audience is most engaged:

- Trail/outdoor recreation surveys: Typically run from May-October unless focused on other seasons.
- General visitor surveys: Best conducted during peak tourist season unless seeking off-season data.
- Surveys at sites like trailheads: Often done during peak season, but timing depends on the target audience (e.g., spring or fall for school groups).
- Online surveys: Effective year-round but aim to collect responses when memories are fresh, ideally during or right after an event.

How long will it take to collect enough survey responses?

Three to four months is a good rule of thumb for many visitor surveys, especially those that are conducted entirely or largely online. If you are trying to cover year-round visitor use, then plan to leave your survey open for an entire year, perhaps making seasonal pushes for new participants. Event surveys may be left open for shorter periods.

Make a backup plan to extend your survey response window and redouble or rethink your promotional efforts if your initial approach and schedule are not yielding enough responses. For a three-month summer survey, for example, plan your schedule to allow for an extra month in case responses are slow to come in or you are missing key parts of your target audience. Checking survey responses periodically as they come in can flag the need to fine-tune promotion or extend the survey. (More on this below.)

3. Sampling

In visitor surveys, sampling means selecting a subset of your target audience to understand their experiences, preferences, or behaviors—like tasting a small bite to judge the whole meal.

Sampling can be complex, but you don't need to dive deep into the math for your survey. This guide aims to help you conduct visitor research that is valid and reliable, giving you confidence in the results and how to use and explain them.

Most visitor surveys use a self-selecting approach called a “convenience sample.” This approach involves selecting participants based on their ease of accessibility rather than using a specific representative or random selection process. This method allows researchers to quickly and easily gather data from individuals who are readily available, such as visitors at a particular location or event, or email and social media contacts who have visited a specific trail, site, or community.

Convenience sampling is often used in visitor surveys because it is cost-effective and efficient. It works well when the goal is to understand general trends or obtain insights into visitor attitudes or behaviors. And it works when you don't know the overall size of your target audience. However, it's important to recognize that convenience samples may not always accurately represent the entire population of visitors, leading to potential biases in the survey results.

Aim for 300 or more survey responses to help reduce potential biases and provide more reliable results.



How to fine-tune your “convenience sample”

Most visitor surveys are conducted using a convenience sample of people who want to respond. You can work to make your sample more reliable through promotion and attention to making the survey widely available.

Your target audience may include different segments that you know about in advance.

Some examples:

- Day visitors and overnight visitors.
- Residents, part-time residents, out-of-area visitors.
- Day hikers, overnight hikers, long-distance hikers.
- Road cyclists, mountain bikers, gravel riders.
- Motorized and non-motorized.
- Families with young children and retirees.

If you are aware of segments like these going into your survey, pay attention to them when promoting the survey. How can you best reach each/all segments? Do any need special attention?

Then keep track as responses come in. Do you have a lot of responses from one segment and a lot less from another? Do you need to do special outreach to boost responses?

These steps can help ensure that you are hearing from important parts of your target audience. Do your best with this, but also keep in mind that you may not know how these segments break down in the population you’re working with. A difference in numbers of responses between segments may simply mean that one segment is more strongly represented among your visitors.

So keep it in mind, especially if you have other information or observations that suggest an imbalance, but don’t worry about it too much.

If you are administering or promoting a survey in person, try to reach visitors over a range of days and times to boost reliability and make it more likely that you will hear from different types of people. For example, you might station volunteers at a trailhead on several different days over the course of a season, making sure you cover mornings and afternoons, weekdays and weekends.

Two other sampling approaches you could use

Representative sample

A representative sample includes survey responses that are in proportion to their occurrence in the overall population. You may not know proportions for visitors or trail users. But if you *do* know, then you could choose to use a representative sample.

For example, you may be designing a survey about your outdoor recreation programming for schools, and want to get representative responses from students, parents, and educators. In a situation like this, you can know the population size and therefore can design a representative sample.

Students	pop 650	survey sample 65
Parents	pop 200	survey sample 20
Educators	pop 500	survey sample 50

Random sample

Especially if you have not done visitor research in the past, you may only have a sense of how your target audience breaks down into segments that interest you. In this case, if you don't want to use a convenience sample, you could create a random sample, which allows everyone an equal chance of being looked at in the survey. This can be a good way of removing bias from your survey in certain situations. For example:

- Ask every tenth person who comes in the door of a museum or passes by an intercept point along a trail to complete your survey. Or use a random number generator to determine who to approach.
- Randomize data collected from a convenience sample by analyzing every third survey response. Use this random analysis by itself, or use it to compare with results from the entire sample.
- Divide the day/week into different time slots and use a random method to determine in which time slots visitors will be asked to complete a survey.
- If you have an email or telephone list of contacts, randomly select those to survey.

4. Four Low-Cost Survey Data Collection Methods

Your visitor survey will consist of a series of questions that you will ask of every respondent. There are four basic ways to collect responses.

- Web-based, using a form on your website or dedicated Google site, Google Form, SurveyMonkey, or another online survey service.

- DIY paper surveys that are then collected by survey partners (e.g., front desk staff), left in drop boxes, or mailed back.
- Personal intercepts in which trained volunteer interviewers record survey responses.
- Hybrid intercept/paper or web survey, where volunteers catch people (e.g., at events or trailheads) and ask them to complete a paper or online survey on the spot.

You may use multiple data collection methods for the same survey. Consider your resources and target audience. Do they prefer writing or speaking? Is it better to leave surveys for people to pick up or ensure they receive one directly? If administered orally, will respondents feel honored or annoyed by the request for their opinions?

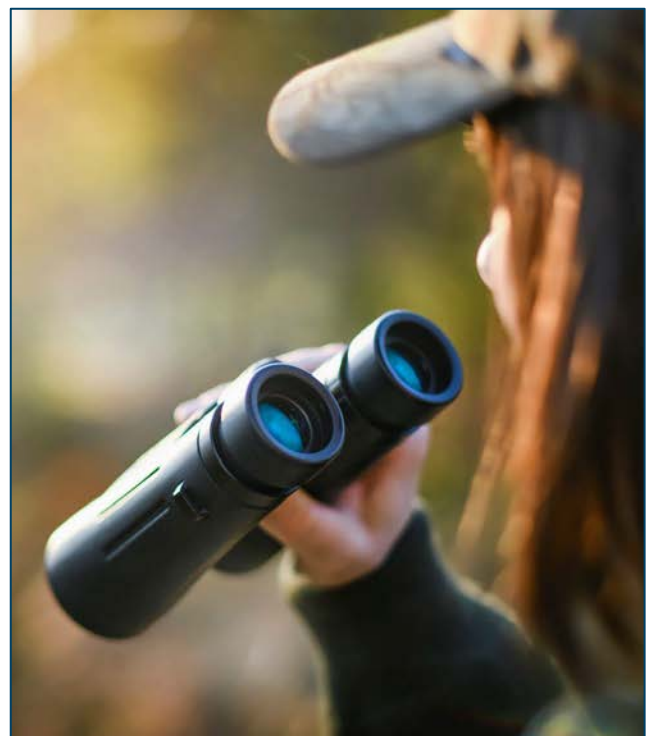


Photo: Milan/Adobe Stock

Collection Method	Pros	Cons
Written (paper or online)	• Surveys can be completed anytime. • Option of anonymity can increase comfort level. • No interviewer bias—everyone reads the same questions. • Respondents have time to recall details (e.g., spending). • No need for volunteer interviewers or training.	• Can't probe for answers or interpret expressions—responses are final. • Low return rate. • Respondents may skip questions. • No control over response timing. • Requires collecting and entering paper surveys. • May not reach the full target audience.
Personal intercept	• Can probe for answers and read body language to spot confusion. • High, immediate response rate. • Fewer blank answers. • Interviewers serve as informal ambassadors. • Capture responses on-site. • Accessible for those who struggle with reading or writing.	• People may feel less anonymous, even without providing a name. • Requires significant volunteer time. • Interviewers need training or orientation. • Some info, like expenditures, may be hard to recall on the spot. • Participants may be unwilling to respond immediately.
Hybrid intercept + DIY paper or web survey	• Combines personal request with the privacy of completing the survey anonymously. • Volunteer training is simpler than for interviewers. • Volunteers can engage with respondents afterward as informal ambassadors.	• Can't probe for answers or read expressions—responses are final. • Respondents may leave blanks. • Paper surveys require manual data entry. • Needs volunteer time at events or booths. • People may be unwilling to respond immediately.

5. Developing the Survey Questionnaire

Focus on questions directly tied to your priorities and intended use of results—avoid unnecessary ones. Since surveys aren't always the best way to gather data, prioritize questions you can't answer otherwise. Combine questions for deeper insights, such as linking demographics with trail use or trip-planning advice.

Five types of survey questions

You will create your survey questionnaire using five basic types of questions.

1. Open-ended — These are designed to prompt more than a one- or two-word response. These are often “how” or “why” questions. *Why do you use our trails?*
2. Closed-ended or forced-choice — These are specific questions that prompt yes or no answers (and sometimes “don’t know” or “maybe”). *Is this the first time you have used our trails?*
3. Multiple choice — Respondents choose one answer from a few possible choices. *How often do you use our trails? (three or four choices of frequency)*
4. Multiple selection — Respondents may choose more than one of several possible choices. *Which activities do you do on our trails? (checkbox list)*
5. Likert Scale or rated questions — These questions ask respondents to rate items on a scale. *When I walk my dog on the trail, I pick up after it... (always, most of the time, sometimes, never).*

Tips for Different Types of Questions

Demographic questions (e.g., where people are from, their ages, and their incomes) Make them easy to answer consistently — use closed-ended, multiple choice, and fill-in-the blank questions. Look at samples for standard language and breakdowns of characteristics such as age ranges, gender, ethnicity.

Multiple choice questions

Eliminate overlap in responses. Keep questions short, and aim for short lists of options. Using an “other” category is ok, but cover your main variables so you don’t get too much lumped together in “other.”

Multiple selection questions

Eliminate overlap in responses. Keep questions short. Longer lists of options are OK, but don’t go overboard and test your survey takers’ patience weeding through lists. Using an “other” category is ok, but cover your main variables so you don’t get too much lumped together in “other.”

Likert scale questions

Eliminate overlap in responses. Be specific.

Question Dos and Don'ts

Some Examples

Eliminate overlap

NO

How often do you typically fish on this river?

- (a) Once a week or more, (b) Once a month or more,
(c) Once a year or more

These response choices overlap. Once a month or more is also once a week or more.

YES

How often do you typically fish on this river?

- (a) Once a week or more, (b) One or more times a month, but less than once a week, (c) One or more times a year, but less than once a month, (d) Less than once a year, (e) I have never fished on this river

Avoid loaded questions

Make the question about what the visitor thinks, not what you think. And give a full range of options.

NO

Don't you think that cutting switchback on trails is destructive?

YES

In your view, is going off-trail on switchbacks (a) always OK, (b) sometimes OK depending on the terrain and vegetation, (c) never OK?

Be consistent

Use the same terms consistently. For example, don't use both "recreation" and "leisure" to refer to the same thing. People may think you're talking about different things.

Avoid double questions

Each question should cover just one point.

NO

Did you visit the trail or the lake in the past year?

This is OK if you don't want to distinguish between trail and lake visits. But if that distinction is important, separate the questions.

YES

In the past year, have you visited the trail?

____ Yes ____ No

In the past year, have you visited the lake?

____ Yes ____ No

Be clear

NO

Have you been to our visitor center recently?

YES

Have you been to our visitor center in the past 6 months?

How long should your survey be?

Shorter surveys are more likely to be completed, but don't omit important questions. Aim for a survey that takes 5-10 minutes, balancing information gathering with respondents' time. Some online platforms track completion time, or you can test by asking a few people to report how long it takes.

If you are developing a paper survey, use the single sheet of paper rule of thumb, limiting yourself to the number of questions that fit without cramming. On a trifold brochure, leaving one panel free for an attractive cover, this usually amounts to around 20-24 questions covering the front and back of the page.

If you need to pare down your list of questions, prioritize essential questions and focus on gathering actionable insights. Avoid asking questions that do not contribute significantly to the objectives of the survey.

Guidelines for ordering survey questions

The order in which questions appear is part of how welcoming and engaging a survey is—and therefore, influences response rates and data quality. Some tips:

1. The first question should relate directly to the survey topic and be easy to answer. This keys people into the topic and lets them know that you are interested in their thoughts and experiences.
2. Place easier questions first to let responders warm up and build interest.

3. Place demographic questions toward the end after more topical questions.
4. Sensitive questions should appear later in the survey and, in general, not grouped together. Be discreet and sensitive in your wording.
5. Place similar questions together (except as above) and generally put the most important questions early in the survey.
6. Number the questions — this helps with collating responses, and it also helps respondents see breaks from one question to another.

A few more pointers

Try to make your survey welcoming and user-friendly. Tell people why you need their input and what you will do with the information you gather. Highlight any incentives for survey completion, such as a discount with local businesses or a drawing for gear, guided experience, or free overnight accommodations. Let people know how long it will take them to complete the survey and provide clear instructions for answering each question as needed (e.g., “choose one of the following” or “if you haven’t visited the park in the past year, skip to question #6”). Ask people to take the survey just once, especially if you’re using multiple data collection methods.

Use survey models as a starting point

You do not need to start from scratch when creating a visitor survey. Using a high-quality sample survey as a starting point can help you decide which questions to ask and provide a model for phrasing standard survey questions. Here are some surveys that can help you get started in different situations:

- A community or tourism region — [Visitor Survey Toolkit \(Visit Scotland\)](#)
- Museum or visitor center — [Te Papa Visitor Survey Guide \(New Zealand\)](#)
- Multi-use trails — [Trail User Survey Workbook \(Rails to Trails Conservancy\)](#) includes four sample surveys for different types of trails.
- Public lands and nearby communities — [Letchworth Gateway Villages survey](#)
- Hikers and outdoor recreation visitors — [Harlem Valley Appalachian Trail Conservancy survey](#)

Get your survey questionnaire reviewed and tested

Following this chapter's guidance and adapting an existing survey will help you create a clear, concise questionnaire. You can also ask a local social science researcher to review it or have a few test subjects complete it to ensure clarity and gauge the time needed.

6. Conducting Intercept Surveys

Intercept surveys—where staff or volunteers gather feedback from your target audience directly—are often used at events, recreation sites, and trails to engage people while onsite.

When choosing a survey spot, ensure it's a place where people can stop without blocking pathways, and get permission if on private or public property. Good locations include trailheads, visitor centers, parking lots, and event booths.

Take care of your survey team—provide chairs, tables, shelter, snacks, and water as needed.

Three basic intercept survey models

All of these ways of conducting an intercept survey can work. Keep in mind that the third approach is likely to result in incomplete survey responses, as the focus is typically on exploring more deeply rather than answering every single question.

1. *Intercept and hand over a clipboard (or iPad).* Your job is to get people to stop and be interested in completing the survey themselves.
2. *Intercept and ask the survey questions yourself.* Your job is to get people to stop and answer all the survey questions while you record the answers.
3. *Intercept and have a focused conversation.* Your job is to get people to stop and have a conversation with you, during which you'll note answers to survey questions on the questionnaire.

The focused conversation approach is challenging but engaging, ideal for gathering qualitative insights. It complements formal surveys by offering deeper understanding of perceptions or patterns revealed in the survey responses.

Create a discussion guide

All interviewers should follow a simple, uniform guide to introduce themselves, explain the survey, and request participation. This guide should be brief and include these six pieces of information.

1. Introduction — “Hi, I’m Victor.”
2. What are you doing — “I’m conducting a survey of people who use this trail.”
3. Your objective — “To help the Amazing Recreation Alliance understand how to make this trail better for everyone who uses it.”
4. Ask if they are willing to participate — “Are you willing to provide us with some feedback?”
5. Time estimate — “I’ll only need about 10 minutes of your time.”
6. Incentives — “Your name will be entered in a free drawing for a guided hike with the last Canadian to summit Mount Everest.”

Tips for interceptors

1. Know the questions. This is crucial for both the “intercept and have a focused conversation” and “intercept and ask questions yourself” methods.

While full knowledge of the survey isn’t needed when simply handing out a clipboard, it helps if questions arise.

2. Practice friendly neutrality. Ask questions with curiosity, avoiding your own perspectives. Keep conversations friendly and neutral, even after the survey, as others may overhear, and it's important to remain open to all viewpoints.

3. Be engaging. People respond to honest curiosity and open listening.

4. Keep your conversations focused. Know the most important questions in the survey and make sure to cover those in every conversation. Don’t get hung up on every little detail, especially if you can fill in the blanks later. For example, if you know someone is from Tumbler Ridge, you may not need to know their exact postal code. Circle back around to fill in missing details or specific questions at the end, saying something like, “Real quick before you go, can I ask you a couple of quick clarifications?” Give yourself time to complete your notations between conversations.

7. Promoting Your Survey

Using a variety of strategies to promote your survey and encourage participation is key to meeting or beating the goal of 300 or more responses from your target audience. Keep the “Rule of Seven” marketing principle in mind as you craft your promotion strategy. While the exact number may vary depending on the context, the idea behind this principle is that on average, individuals need to be exposed to a marketing message multiple times before they take action or respond positively to it. The message for your survey is to promote often. Don’t just hang up posters around town once and think you’re finished promoting!

Offer incentives or rewards to encourage participation, such as entry into a prize draw, discounts at local businesses, or exclusive access to outdoor events or activities. Incentives may be purchased or donated — and they work! Open comments on visitor surveys that frequently mention incentives as a key reason for completing the questions.

Four Approaches to Survey Promotion

“In your face” promotion

These techniques meet your visitors where they are.

- Paper or iPad surveys available at reception desks, counters at retail stores, restaurant tables, visitor centers.
- Rack cards and posters placed at visitor centers and tourist attractions, in visible, high-traffic areas and bulletin boards around your community or at trailhead kiosks. Include QR codes to send visitors to an online survey.
- Tabling at events. People respond to honest curiosity and open listening, and are often moving slowly enough to take time to complete a survey.’

Media promotion

- Advertise or even print surveys in a local newspaper. Printed surveys are often on topics of community concern and they can be accompanied by an article series.
- Promote in printed and e-newsletters of partner organizations, or email blasts.
- Press releases: Write a press release about the survey and send it to local newspapers, radio stations, and online news outlets. Try to get coverage or interviews to raise awareness about the survey within the community.

Social media promotion

- Use Facebook, Instagram, and LinkedIn to promote the survey.
- Create a graphic “survey bug” (or two or three) that gives a unified look to posts about your survey. Don’t be lazy — establish a graphic look or theme, but don’t just send the same image or post out over and over.
- Include a QR code to link to your online survey.
- Leverage partner networks like tourism promoters and user groups.
- Engage with local online forums, community groups, and neighborhood social media pages. Share information about the survey and encourage members to participate and spread the word.
- Engage influencers with broad reach into your target audience.
- Once is not enough — promote in the same networks multiple times.
- Consider paid ads to boost visibility.

Partnership promotion

- Collaborate with schools and colleges to integrate the survey into classroom activities.
- Partner with local businesses, such as outdoor gear stores, coffee shops, or recreational facilities, to promote the survey. They can help distribute flyers, display posters, or include information about the survey in their newsletters or social media channels.

8. Analyzing Survey Data

After collecting your survey responses, analyzing the results will help you turn raw data into actionable insights and findings.

A. Data analysis options

There are three primary ways to analyze your survey data:

Use an online survey platform like

SurveyMonkey or Qualtrics. If you use one of these platforms, some analysis is built into the system and it can be easy to generate reports.

Pros, Cons and Alerts

- Easy to create simple reports and charts.
- No handwriting to read.
- Free versions have limited analysis options.
- Look for a plan that includes cross tabulation and text analysis.
- Might pay \$1,000+ for subscription that includes these advanced features.
- May need to pay to export data to Excel to do more advanced analysis.

Use a spreadsheet like Excel or Google Sheets.

If you have created your survey with Google Forms, on your organization's website, or another service that creates a data file, you will have a data spreadsheet to start out with.

Pros, Cons and Alerts

- Good for overall data management
- Easy to create simple charts
- Lots of people know how to use Excel
- Able to create cross tabulations (e.g., to compare responses among different visitor segments)

- Watch for accuracy in data entry (if you are converting from handwritten surveys) and coding
- Can be a lot of work

Farm it out to someone else who will use a statistical package like SPSS or a spreadsheet like Excel.

Pros, Cons and Alerts

- Less work for you.
- Feeling of confidence in results.
- Using SPSS requires rigorous data coding (converting answers to numbers) — somebody has to do this.
- May cost money.
- Plan to stay involved so you really understand your results.
- Make sure your contractor/analysis partner knows what they are doing.

B. Prepare for data analysis

Compile the Data

First, you need to make sure all of your data are in one place in a format that can be easily analyzed. For surveys that are conducted entirely online, this step will already be done and your data will be available in a spreadsheet.

If you have some online and some paper surveys, enter everything into the online survey form *or* export your online results into an Excel file and enter the paper survey responses into the spreadsheet.

If you have only paper surveys, you can either create an online survey form and enter the data there *or* enter the data directly into an Excel file or other spreadsheet.

What is Cross Tabulation?

Cross tabulation is comparing the results of one question with the results of another to show relationships among variables or to compare how one group answered questions compared to another group. Here is an example comparing the responses of different audience segments to a question about travel decisions.

	When deciding to visit this area, how important were the following?											
	Scenic Beauty - Not Important	Scenic Beauty - Somewhat Important	Scenic Beauty - Moderately Important	Scenic Beauty - Very Important	Outdoor Recreation - Not Important	Outdoor Recreation - Somewhat Important	Outdoor Recreation - Moderately Important	Outdoor Recreation - Very Important	Rural/ Small town character - Not Important	Rural/ Small town character - Somewhat Important	Rural/ Small town character - Moderately Important	Rural/ Small town character - Very Important
Gen X and younger (77 1965-1981, 75 1981-1999) n = 204												
%	3 1%	8 4%	32 16%	160 78%	11 5%	29 14%	73 36%	84 41%	30 15%	46 23%	59 29%	65 32%
\$100,000+ household income n=89												
%	1 1%	3 3%	17 19%	68 76%	5 6%	13 15%	25 28%	46 52%	11 12%	14 16%	35 39%	28 31%
Baby Boom and older n = 190												
	3 2%	3 2%	27 14%	149 78%	19 10%	25 13%	58 31%	74 39%	17 9%	25 13%	65 34%	72 38%
Monroe + Erie County n = 91												
	0 0%	2 2%	19 21%	70 77%	4 4%	15 16%	26 29%	41 45%	8 9%	11 12%	36 40%	34 37%
Overnight n=196												
	2 1%	7 4%	38 19%	143 73%	18 9%	26 13%	63 32%	77 39%	21 11%	40 20%	59 30%	67 34%

Data entry tips

Number each paper survey for easy reference and to ensure data completeness. Assign data entry to someone detail-oriented and provide instructions or use data validation in Excel or Google Sheets to avoid confusion.

Code responses during data entry to save time later. Coding assigns numerical values to text responses, making analysis easier. See the example on the right.

Coding turns the yes/no answers in the highlighted column into numbers. Each “yes” response is replaced by a “1” in the new “Yes” column. Each “no” response similarly becomes a “1” in a separate “No” column.

In Excel, always use a “1” when you are coding. This allows you to total up number of responses in a column easily.

This is different than coding for statistical software packages, where each question has a number and each response has a separate number.

Data entry for open-ended questions

Open-ended questions let respondents answer in their own words. You can either enter responses verbatim for later analysis or categorize them into themes or keywords as you input them into the spreadsheet. The first method simplifies data entry.

Clean up the data

Before analysis, review the data for common errors or omissions. If data was entered manually, check about 10% of entries for accuracy.

If you find many errors, recheck the entire data set. One way to anticipate problems is to identify questions *during* data entry (e.g., illegible handwriting).

DATE	Q22	Q23	Q24	Q25	Q26
	Have you hiked on the Appalachian Trail (A.T.) prior to today?	How did you hear about the A.T.?	Including this visit, about how many times in the past two years have you visited the Appalachian Trail in the Harlem Valley area?	On average, about how much time do you spend on the Appalachian Trail in the Harlem Valley area each time you visit?	About how far did you hike on the A.T. today -- or are you planning to go if you're not finished hiking today?
	YES OR NO	Open-Ended Response	Open-Ended Response	Response	miles
9/16/18	YES	Childhood stories	2	Overnight or longer	4
9/16/18	YES	Live locally	10+	4-8 hours	2.5
9/17/18	YES		1	1-3 hours	2
9/16/18	NO	Online	0	1-3 hours	0
	NO		X		45 min
9/16/18	NO	Driving for work	3	1-3 hours	1-2
9/16/18	YES		1	4-8 hours	6
9/16/18	YES		2	4-8 hours	
9/16/18	YES			1-3 hours	6

Raw data (shaded column above) and coded data (using Excel below and for a statistical software package at bottom).

	Have you hiked on the Appalachian Trail (A.T.) prior to today?	
	YES	NO
9/16/18	1	
9/16/18	1	
9/17/18	1	
9/16/18		1
		1
9/16/18		1
9/16/18	1	
9/16/18	1	
9/16/18	1	
9/16/18	1	
9/8/18		1

	Q2
	Have you hiked on the Appalachian Trail (A.T.) prior to today?
Q1	YES = 1; NO = 2
9/16/18	1
9/16/18	1
9/17/18	1
9/16/18	2
	2
9/16/18	2
9/16/18	1
9/16/18	1
9/16/18	1
9/16/18	1
9/8/18	2

Numbers seem to be the biggest problem for respondents. You may see illegible or incomplete postal codes, dollar amounts not entered correctly, a mismatch between “traveling with” and “number of people covered by expenditures” figures, and other similar errors.

If you cannot rectify or clean up errors or omissions, delete the questionable answers from your data set. If the whole response seems questionable, omit it. This can sometimes happen when people just want the incentive and rush through the survey or select random answers, or when people misunderstand several questions.

Outliers, such as unusually large group sizes or long stays, should either be handled separately (e.g., group tours) or removed, especially if the discrepancy can't be explained. You can also analyze data with and without outliers.

Protect confidentiality

If your survey data contain private information, such as respondents' names or sensitive information that could be traced back to an individual, be careful to protect confidentiality. Here are five guidelines:

- Secure your original surveys.
- Don't include names in your analysis, even if you collected them.
- Use email addresses only in the way that you said you would.
- Report aggregates and calculations, not individual responses.
- If quoting from a survey response, make it anonymous or get permission.

C. Analyze data

Before you start analyzing survey data, revisit your priority goals and research questions. This will help you root your analysis in the things that are most important for you to learn. This section provides an overview of the three most common types of data analysis in visitor surveys like these and offers some tips to make the process easier.

Frequencies

Start by counting everything. Frequencies (or one-way frequencies or one-way tabulations) refer to the number of times each response occurs. Count frequencies for all closed-ended questions in your data set.

Keep your analysis simple: some things only need to be counted. For some questions, your work may be finished because all you need to do is to report the frequency. This is less common than calculations, but can be used (e.g., for number of responses in each category such as years of age).

Two calculations are common: averages (e.g., average daily expenditures for overnight visitors) and percentages (e.g., 45% day visitor, 35% overnight visitors, 20% residents).

Frequencies and related calculations are useful for:

- Distinguishing visitor characteristics (e.g., satisfied vs. not satisfied, local vs. nonlocal)
- Percentages of different responses (e.g., likely vs. unlikely to return)
- Grouping responses into subgroups (e.g., age groups)
- Results that are easy to graph in Excel, Illustrator, etc.

Cross tabulations

Also known as two-way tabulations, cross tabulation involves organizing and presenting data in tables with rows and columns to identify relationships between the values (e.g., patterns of responses based on categories like gender and geography). The example above shows how you can include both frequencies and percentages in the cross tabulation. You may use color coding to help visually differentiate the most significant or relevant responses.

Cross-tabulations are useful for:

- Categorizing numbers of responses from two or more questions
- Looking at relationships between or among variables (e.g., perceptions, perceptions or lodging choices of summer vs. winter visitors)
- Interpreting more complex data

Pointers for reporting numbers and calculations

In the sample cross tabulation table, “n” refers to the number of respondents. It’s good to report this for all frequencies and cross tabulations so people reading your results can see how many responses were analyzed. Keep in mind, “n” is not always the same for every question since some people skip answers.

If you use a convenience sample, you will not calculate a response rate, which refers to the % of surveys that are completed. If you used another sampling method, calculating a response rate (percent of all surveys completed) for the overall survey is helpful.

Divide the number of completed surveys by the number of participants contacted, then multiply by 100 to calculate the response rate. Report it using a “%” sign.

Analyzing open-ended questions

Making sense of responses to open-ended questions is all about finding patterns. Here are a few ways to do that:

- Key word or theme analysis — Identify key words or themes and log how many times each is raised in open-ended responses.
- Software assist — Use qualitative analysis software like NVivo, ATLAS, ti, or any of a host of others. One that is easy to use, fun and inexpensive is Quirkos. A one-time license fee for the desktop version for nonprofits costs \$340, or subscribe to the cloud version for a quarterly or annual fee. Free 14-day trial.
- The “gut-sense method” — Identify common themes that relate to your driving questions without using a specific method to quantify the patterns.



The colorful Quirkos interface.

Tips for data analysis

- Keep notes about your analysis so you know how you're doing what you're doing. Include notes about what you tried that didn't pan out so you don't do it again.
- Create separate data sheets for different analyses using only the data you need. Keep your master database of responses clean.
- Don't go it alone. Line up a partner who can help you check your analysis and nail down what you're learning.

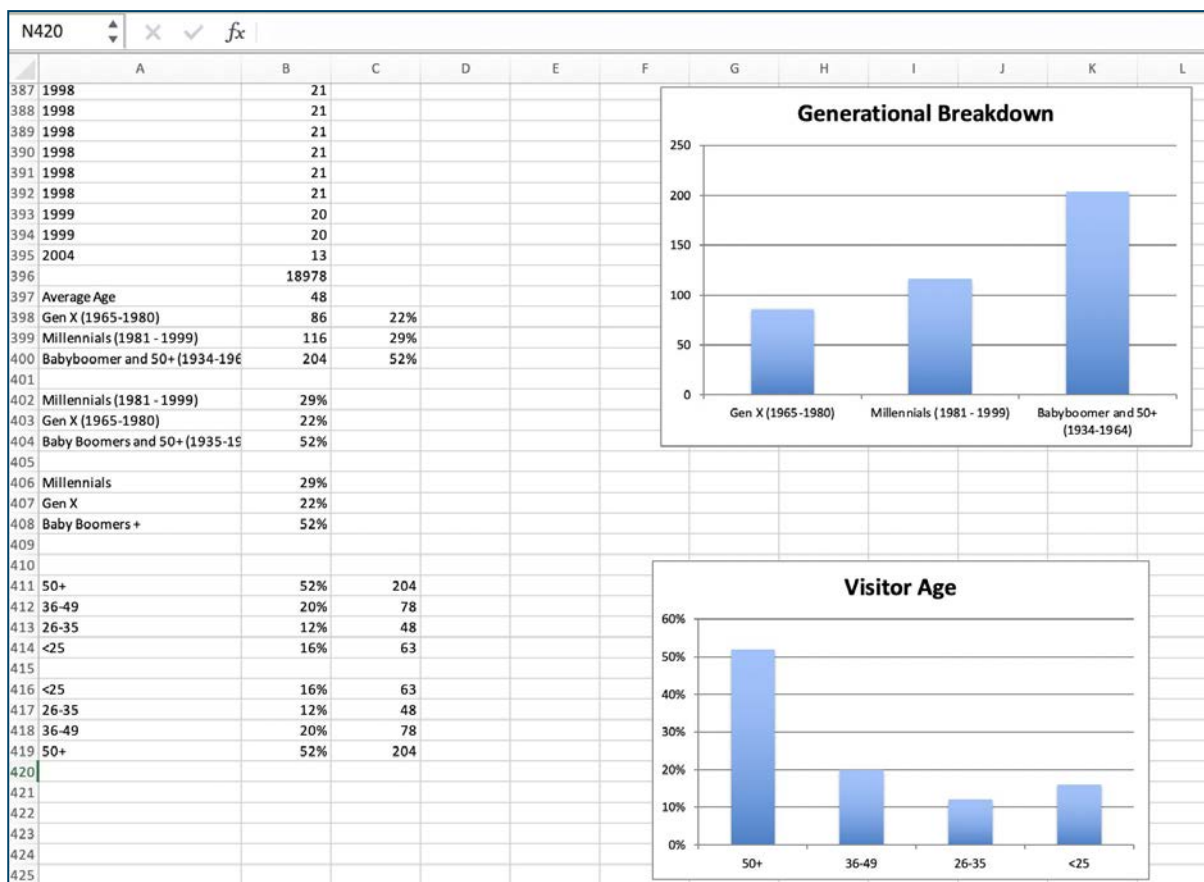
9. Making Sense of Your Findings

Write up your findings. Even if you are not producing a public report, this is good discipline. Summarize your most important insights in 1-2 pages.

If you report your results in writing for public consumption:

- Keep it simple and concise
- Report both results you see as positive and those you see as negative
- Use quotations to illustrate respondents' feedback
- State any weaknesses with your survey method.
- Provide context for better understanding.

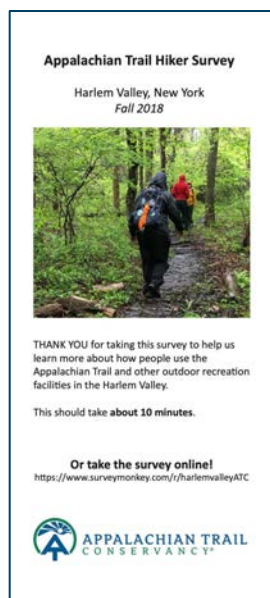
Stay within the bounds of your analysis, especially without a representative sample. Use phrases like "40% of respondents say...". Once it's clear you're referring to the survey sample, you can shorten statements, e.g., "Overnight visitors stay longer in summer (5.4 nights) than fall (2.5 nights)."



Example of a separate data analysis spreadsheet.

Visitor Survey Implementation Examples

Harlem Valley Appalachian Trail Community



Details

Summer survey; 300+ responses.

Delivery

Paper survey with 23 questions for hikers to fill out and brochure version for distribution at local businesses (e.g., restaurants, shops).

Online survey with the same 23 questions accessed through a hyperlink and QR code promoted on rack cards at local businesses + promoted on social media (mostly HVATC).

Hybrid intercept surveys conducted at trail events, with scouting groups asking event attendees to fill out the surveys.

Incentives

Hiking gear raffle as an incentive.

Letchworth Gateway Villages

Details

July through October; 434 responses.

Delivery

Paper brochure with 11 questions for patrons in the park and surrounding communities without Internet access.

Online survey with 21 questions accessed through a hyperlink and QR code promoted on rack cards and posters displayed in 70 locations through the three gateway communities, the Genesee Valley Greenway and Letchworth State Park + promoted on social media (LGV, partners and influencers).

Intercept surveys conducted at signature events (e.g., Perry Chalk Art Festival, Genesee Summer Festival, Letchworth Arts and Crafts Festival, etc.).

Incentives

Local products gift basket raffle as an incentive.

A screenshot of a "Visitor Survey" form. It starts with a welcome message: "Hello and welcome to Letchworth State Park and the surrounding area!". It explains the purpose: "As gateway communities to Letchworth State Park, we want to ensure the highest quality visitor experience. By taking part in this brief survey you will help us improve our communities and future offerings for visitors. The survey should only take 5-8 minutes to complete. All responses will remain confidential." It offers a prize: "Upon completion of the survey you will automatically be entered to win a gift basket filled with items local to the Letchworth region - a value of \$100. Thank you for your time and help!". Question 1: "Today's Date:" with fields for MM, DD, and YYYY. Question 2: "Where did you pick up this survey?" with radio button options: Perry, Mount Morris, Genesee, Letchworth State Park, and Facebook or other Social Media Platform, followed by a "Please specify:" text field. Question 3: "On this trip, are you spending time at one or more of the following? (check all that apply)" with checkboxes for Letchworth State Park, Perry, Genesee, Mount Morris, New York's Finger Lakes Region, and Other (please specify) with a text field.

Visitor Survey Implementation Examples

Squamish Off-Road Cycling Association (SORCA)

Details

May-October (main riding season), 1,193 responses total.

Delivery

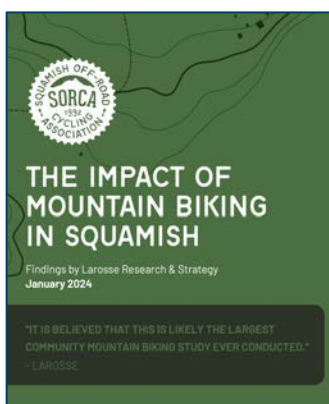
Rider intercept survey conducted using a random sampling program designed to interview equal numbers of visitors and residents.

Online survey distributed through email and online to SORCA members and the general public, as well as through QR codes at trailheads, parking lots and staging areas.

Additional information about rider origin was gathered for individuals who accompanied the survey respondent when riding in a group during intercepts.

Incentives

Prizes donated by local businesses and SORCA.





Chapter 6

Other Ways to Learn About Visitors

Beyond visitor surveys there are many other ways to learn about outdoor recreation visitors that you may use independently or in conjunction with a survey. This chapter covers a handful of these that align well with a do-it-yourself approach to visitor research.

1. Variations on Visitor Surveys

- Mini-surveys: Focus on 1-3 key questions and deliver them when people have a moment. For example, ask, “What’s your postal code?” on a trail, distribute postcards at restaurants or lodgings, or use an iPad at your visitor center.
- Add questions to existing surveys from tourism agencies, local governments, or universities, or include a survey in the local newspaper alongside related articles.

2. Focus Groups

Focus groups are small, facilitated discussions where individuals share perceptions, opinions, and experiences on a topic. They offer insights into visitor preferences, concerns, management priorities, and ideas for improving programs, visitor experiences and services.

To explore focus groups for visitor insights, the [Community Tool Box](#), from the University of Kansas offers an [in-depth guide](#) on planning, conducting, and using focus groups in community settings.

3. Engage Business Owners and Workers

Engage the business community for visitor insights by recruiting owners, especially of outdoor-focused businesses, to informally ask their customers questions. Meet with them periodically to share insights and discuss responses.

Select two or three questions to focus on in a given time period. Examples include:

- Where are you traveling from, and how long are you visiting?
- Is this your first time here, or are you a repeat visitor?
- Why are you here? Are you visiting *name of main area outdoor attraction or trails*?
- What’s been your favorite part of the trip? Anything that could improve your stay?
- Have you seen *our local website, Facebook page or other promotion*?

You could also ask business owners to help you collect zip or postal code data from credit card sales or ask customers to place a pin on a map to show where they are from.

4. Learn From Social Media Traffic

There are several user-friendly tools and approaches to gain insights about visitors from social media. Here are some do-it-yourself methods:

Social listening tools

Use one of the free or low-cost social media monitoring tools available online—such as Hootsuite, TweetDeck, or Google Alerts—to track mentions of specific keywords, hashtags, or topics across various social media platforms. By monitoring conversations related to outdoor recreation, you can gain insights into popular destinations, activities, and visitor sentiments.

Hashtag analysis

Explore popular outdoor recreation hashtags like #hiking, #camping, or area-specific tags. Search these on Instagram or Twitter/X to find user-generated content and trends. Focus on the types of posts, locations, and activities shared to gain insights.

Geotagging

Social media platforms allow geotagging, showing where content was created. By searching geotagged posts in specific outdoor areas, you can learn what visitors share, offering insights into their preferences and behaviors.

Content analysis

Spend time browsing through posts, comments, and photos shared by area outdoor enthusiasts on social media platforms. Take note of recurring themes, popular destinations, emerging trends, and common challenges mentioned by users. This qualitative approach can help you gain a deeper understanding of the outdoor recreation community and identify areas of interest for further investigation.

Surveys and polls

Create surveys or polls using social media platforms to gather feedback from outdoor recreation enthusiasts. Ask questions about their favorite activities, preferred destinations, recent experiences, and suggestions for improvement. Engaging directly with the community through interactive content can provide valuable insights into their preferences and opinions.

Community engagement

Participate in online forums, groups, or communities dedicated to outdoor recreation, especially local clubs and discussion groups. Join discussions, ask questions, and share your own experiences to connect with fellow enthusiasts. By actively engaging with the community, you can gain firsthand insights into their interests, concerns, and perspectives on outdoor recreation. Join these meetings as yourself — do not try to hide your identity.

Visual analysis

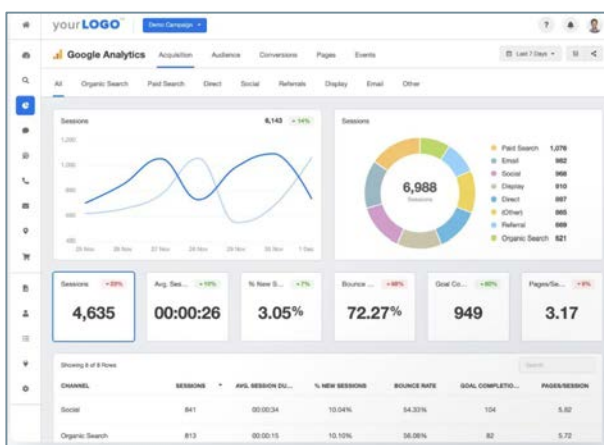
Analyze photos and videos shared by outdoor enthusiasts on platforms like Instagram or YouTube. Focus on scenery, activities, and equipment to identify popular destinations and trends. This visual analysis offers insights into outdoor recreation visitors' experiences and aspirations.

By leveraging these do-it-yourself methods, you can gain valuable insights from social media about outdoor recreation visitor preferences and behaviors.

5. Pay Attention To Web Traffic

Outdoor recreation managers can analyze web traffic to learn about visitation trends, visitor behavior, and preferences:

1. Tools like [Google Analytics](#) help track site visitors, providing metrics like visitor numbers, location, and page views.
2. Google Analytics is free and offers a wide range of data.
3. Use [Google Analytics Academy](#) for training, or ask your webmaster for help setting up a tracking system.



Sample Google Analytics dashboard

Traffic patterns and trends

Analyze website traffic data over time to identify trends in visitor numbers, such as seasonal fluctuations or long-term growth. Track changes in the popularity of specific trails, attractions, or amenities by monitoring page views and session durations for relevant pages. Identify emerging visitation patterns or shifts in visitor demographics by analyzing geographic location data and referral sources.

Visitor behavior and engagement

Use metrics like bounce rate, time on page, and pages per session to assess visitor engagement. Analyze user flows to understand common website pathways and identify navigation improvements. Track conversion rates for actions like downloading trail maps or signing up for tours to gauge visitor interest and satisfaction.

Google Analytics allows you to analyze the sources of traffic to your website, such as organic search, social media, referral sites, or direct traffic. By understanding where your visitors are coming from, you can tailor your marketing efforts accordingly. For example, if most traffic comes from social media, consider investing more in social media campaigns.

Preference analysis

Use data on popular search terms and landing pages to understand visitor interests and preferences related to specific activities, amenities, or natural features.

Chapter 7

Put Your Findings to Use

This section offers ideas and guidance for putting visitor research to work by estimating economic impact and communicating about other community and economic benefits. This is just the tip of the iceberg when it comes to leveraging visitor data. You can use what you learn about visitors to help make a case for funding, inform management and planning, craft effective marketing, understand and mitigate user conflicts, shape programming to meet visitor interests, and identify entrepreneurial opportunities.

These are just a few of the many ways that doing research about visitors and recreational users can help you better serve your communities and promote sustainable, enjoyable visitor experiences.

In This Chapter...

1. Estimating Economic Impact
2. Communicating About Economic and Community Benefits
3. Other Ways to Use Visitor Research Findings



*Telegraph Cove,
Vancouver Island, British
Columbia (Danita
Delimont/Adobe Stock)*

Estimating Economic Impact

Economic impact is a widely used measure of how recreational facilities and activities contribute to local and regional economies. It is not the only way to understand the community and economic value of trails, recreation areas and heritage areas, but this kind of analysis can be important in coalescing support among local and state or provincial officials for funding maintenance, construction, expansion, programming, small business and entrepreneur support, marketing, and other key functions. Understanding economic benefits can help you expand your circle of allies and partners to include economic developers and the local business community. And it can help build public support.

A DIY analysis using your own visitor data can highlight the benefits of your programs, parks, and recreation facilities.

Economic Impact Analysis 101

Before starting, it's useful to understand the basics. Economic impact analysis assesses how something, like trail visitation, affects an area's economy. It includes both "direct" and "secondary" effects.

Direct effects

Changes in the economy caused by the direct spending of visitors or outdoor recreation users (e.g., on lodging, meals, transportation, guides & outfitters, souvenirs, etc.).

Secondary effects

These are the "ripple effects" of the direct visitor spending, as these dollars circulate in the local economy. There are two kinds of secondary effects:

1) Indirect effects

Changes in the economy caused by subsequent business spending (e.g., linen suppliers, food distributors, inventory, etc.).

2) Induced effects

Changes in the economy caused by increased household spending due to wages paid to employees (rent, utilities, groceries, etc.).

Eventually, money "leaks out" as it is spent outside the local economy. A "regional multiplier" represents these ripple effects, showing the ratio of total effects (direct + secondary) to direct effects. Larger, urban areas have higher multipliers than smaller, remote regions, where the economy meets fewer local needs.

The results of economic impact analyses are typically reported as the total value of goods and services produced as a result of the activity being studied—in other words, the total local business activity generated by these direct, indirect and induced effects. Other impacts, such as the number of jobs, labor income or state/provincial and local taxes paid, may also be estimated in economic impact studies.

An Example of Charting the Sources of Economic Effects

How US National Park Visitor Spending Supports Jobs and Business Activity in Local Economies



Millions of visitors visit NPS sites each year.



NPS visitors spend money in local communities. The locally retained sales, income and jobs resulting from these purchases represent the direct effects of visitor spending.



Additional jobs and economic activity are supported when businesses purchase supplies and services from other local businesses, thus creating indirect effects of visitor spending.



Employees use their income to purchase goods and services in the local economy, generating further induced effects of visitor spending.

Figure 1. How NPS visitor spending supports jobs and business activity in local economies. (Illustrations by Shepherd Wolfe).

Illustration by Shepherd Wolfe from Flyr, M., and L. Koontz. 2023. [2022 national park visitor spending effects: Economic contributions to local communities, states, and the nation](#). Natural Resource Report NPS/NRSS/EQD/NRR— 2023/2551. National Park Service, Fort Collins, Colorado.

Whose spending is included?

Economic impact vs. economic significance

This section focuses on estimating the economic impacts of visitation and recreation. Before starting, decide whose spending to include: trail users, all outdoor recreation participants, heritage visitors, or specific groups like paddlers, equestrians, or motorized trail users.

One important decision to make is whether you want to focus on the economic effects of spending by out-of-town visitors only, or whether you also want to include the money spent by residents. The analytic steps you will learn here apply in either case, but what you call your analysis and how you talk about it will be different.

Economic impact analysis

Focuses on the economic effects of spending by out-of-town visitors only. How many dollars do you attract from outside your area and how much does that “new money” benefit your place?

Economic significance analysis

Focuses on the economic effects of spending by everyone, both out-of-town visitors and local residents. How many dollars are spent on this type of recreation in total, and how much economic activity does that spending support? You may also see this referred to as economic contributions or economic effects analysis.

For tourism development and attracting non-resident visitors, an economic impact analysis is ideal. For a broader view of the trail's role in the local economy, community engagement, and policy-making, an economic significance analysis is better.

Your approach can also be influenced by the availability of data. For example, if your data does not distinguish between residents and out-of-town visitors, then an economic significance analysis will be easier to accomplish.

Basic information needs for impact analysis

Whether your focus is economic impact or economic significance, here is the information you will need to gather, collect or estimate:

- Number of visitors or users
- Average spending per visitor
- Capture rate
- Regional multiplier
- Optional: Importance of the attraction or event

The point-by-point review below will help clarify the information needs.

1. Number of visitors or users

For an economic significance analysis, use the total number of visitors or users.

For an economic impact analysis, you'll need to know the number of out-of-area visitors. These can be identified by a radius, regions, provinces, or postal codes. There's no universal rule, but in British Columbia, a visitor often travels 60+ kilometers from home. Choose a definition that fits your area and is easy to apply to your data.

2. Average spending per visitor

These data are often collected through visitor surveys, where you may see questions that focus on party size, number of days spent in the area, and daily expenditures per visitor or visitor party.

Questions that ask for visitor expenditures by category—e.g., lodging, meals, shopping, entertainment, transportation—can improve the accuracy of responses and also provide a way of differentiating among spending patterns of different groups (e.g., residents vs. out-of-town visitors).

Your task is to use the data collected to calculate the average spending per visitor per visit. This is the average visitor spending number to be used in the simplified economic analysis that follows.

3. Capture rate

This is the portion of spending that accrues to the area as direct sales (e.g., not including cost of goods sold).

In the simplified analysis that follows, the capture rate is a set percentage applied to the overall visitor spending number. Reducing the total visitor spending by a percentage helps to account for the fact that many businesses will have already invested money outside the local area acquiring inventory and paying for other costs related to the goods or services sold.

Local area capture rates can be calculated, but this is a complicated process. You may not have heard of the capture rate, even if you are generally familiar with economic impact analyses. Applying a locally relevant capture rate is part of preparing spending data to be input into some of the most-used platforms for economic impact analysis such as IMPLAN, and is typically not discussed separately.

See the graphic below for an illustrative example of how the capture rate works.

Capture Rate: A simplified version from your latest trip to Revelstoke, British Columbia

Goods

Buy a t-shirt from Love Making Designs.



Wholesale cost of the shirt leaves the area.

Most of the rest stays local (wages, rent, profit for local owner, etc.).

Services

Pay a guide to take you fly fishing on the Akolkolex River.



Money stays local.

4. Regional multiplier

As noted above, this is the ratio of total effects (direct effects + secondary effects) to direct effects. Another way to think about it: the number of times a dollar “circulates” in your local economy before it all “leaks out.”

In the simplified analysis, the multiplier is estimated based on your area’s population and population density.

5. Importance of the attraction or event to travel decisions (optional)

Especially if your focus is the economic impact of out-of-area visitor spending, you may want to consider how important the activities, facilities or event(s) that you are focusing on are in visitors’ decisions to visit your area. Even the pros sometimes skip this step, but it seems fair to learn more about whether your trails, for example, are a main draw for visitors or whether travelers bump into the trails while in town for another reason. You may apply this understanding directly to your analysis, or you can use it to help provide a context for your findings.

Where can you get the information you need?

Whether you are going to update a visitor study or conduct a new analysis, it is best to do so using data about your own visitors, not estimates drawn from other places.

If you are updating a study, your priority should be gathering data to help you update the number of visitors that aligns with the pool of visitors used in the original study (i.e., trail system users, all visitors to a community, residents and visitors who attend an event, etc.).

You may also choose to collect and use current visitor spending in your study update. Here, too, it is best to have data about the population of visitors or recreation users identified in the original study.

Where can you get the information needed for an update or a from-scratch analysis? See the graphic below.

1	Number of visitors	• Your own visitor counts • A collection of visitor counts or estimates from partners in a region • Averages from similar organizations, events or attractions in your area
2	Average spending & visitor origin	• A survey of your own visitors • Local, regional, state or provincial tourism promotion agencies • University tourism and recreation programs and researchers • Studies from other, similar places
3	Capture rate	• Rule of thumb = 70% for tourism-related activity
4	Multipliers	• Calculated from an existing study (divide total visitor spending by total economic impact or effect) • Estimated using a population density formula

Updating an Existing Study

If you have a relatively recent study (ideally less than 15 years old), consider updating it by using new visitor data instead of conducting a new analysis. You may also update average per-visitor spending if you have more recent figures.

What you need to be able to see in your existing study in order to be able to update it:

- Number of visitors
- Overall visitor spending
- Results of impact analysis

What you need to update to calculate new impact:

- Current number of visitors per year
- Updated average spending per visitor (if you do not have this, use the visitor spending figures from the original study)

Here's how to do the calculation.

If you are only updating the number of visitors:

1. Calculate impact per visitor from the original study (divide total economic impact by number of visitors using figures from the original study)
2. Multiply the impact per visitor by the updated number of visitors
3. Adjust for inflation from the year of the original study to the year of your updated information. (The Bank of Canada offers a [calculator](#); the U.S. Bureau of Labor Statistics has a [calculator](#), too.)
4. If the original study estimates other impacts such as jobs or wages supported, follow the same process, calculating jobs per visitor or wages per visitor from the original study and multiplying by the updated number of visitors.

If you are updating both the number of visitors and visitor spending:

1. Calculate total visitor spending (multiply the updated number of visitors by the updated average spending per visitor)
2. Calculate the multiplier from the original study (divide total economic impact by total visitor spending)
3. Multiply the updated total visitor spending by the multiplier from the original study.
4. If the original study estimates other impacts such as jobs or wages supported, you may estimate them as well in your updated study.
5. Calculate the number of jobs (or amount of wages) supported per \$100,000 in total economic impact (or \$1 million, depending on the magnitude of impact in the study). Use figures from the original study.
6. Apply this ratio of jobs (or wages) per \$100,000 of total economic impact to your updated impact figure.

Step-By-Step DIY Economic Impact Analysis

You may not have an existing study to update. Or your existing study may be old or may not include all of the information you need. Perhaps you know or suspect that plenty has changed since your old study was completed. There are many reasons for wanting to take a fresh look, even if you have a study to build on.

If you want or need to start from scratch, instructions for doing your own economic impact or economic significance analysis follow.

The steps for a basic, DIY economic impact analysis are the same as for an economic significance analysis with one key difference: whether you include only out-of-area visitor spending (economic impact) or all spending by locals and nonlocals (economic significance). For convenience—and to make the text less wordy—the sections below offer guidance for conducting economic impact analysis. You may easily adapt these steps to an economic significance analysis by including all visitor spending, not solely spending by out-of-area visitors.

There are nine steps in this process:

1. Decide on a study area
2. Gather all the primary data you have (timely data about your visitors)
3. Identify gaps
4. Identify secondary studies and sources
5. Generate estimates to fill data gaps
6. Estimate total direct visitor spending
7. Apply cost of living adjustment to visitor spending, if needed
8. Estimate a total spending multiplier for your study area
9. Multiply spending by capture rate and multiplier.

The result of this process is an estimate of the total local business activity generated by visitor spending associated with your program, park, natural area, trails, or other recreation or cultural facility.

If you wish to extend your analysis to include other components of economic impact such as number of jobs supported, total wages, or specific tax revenues, this do-it-yourself guide offers guidance for creating estimates based on existing studies that may be available for your area. This is not part of the core DIY Economic Impact Analysis.

The following pages take you through the DIY Economic Impact Analysis steps one at a time.

1. Decide on a Study Area

A study or "impact area" is the geographic region for estimating economic impact. State, provincial or national studies are possible but usually require more data than typical DIY efforts can support.

For local and regional studies, here are some guidelines for selecting a study area:

- Ensure the population and land area are known to calculate the multiplier (Step 8).
- A study area is usually larger than a single community because local economies go beyond the boundaries of one municipality. Think about how your area works. Where in your area do businesses and employees spend their money? What does your local "economic watershed" look like?
- For many do-it-yourself analyses, working with a single regional district or collection of districts makes it easy to estimate population and population density for the multiplier. This approach also facilitates collecting contextual data about the economy and economic performance and trends from state, provincial and federal sources.

[Census tracts](#) can define study areas within counties. Since population and land area are known, they can be used to calculate a multiplier.

This study of the influence of the river on the area's economy primarily focused on the communities closest to the river. For the study's economic impact analysis, a five-county impact area was used that included important trade centers outside the immediate river corridor.

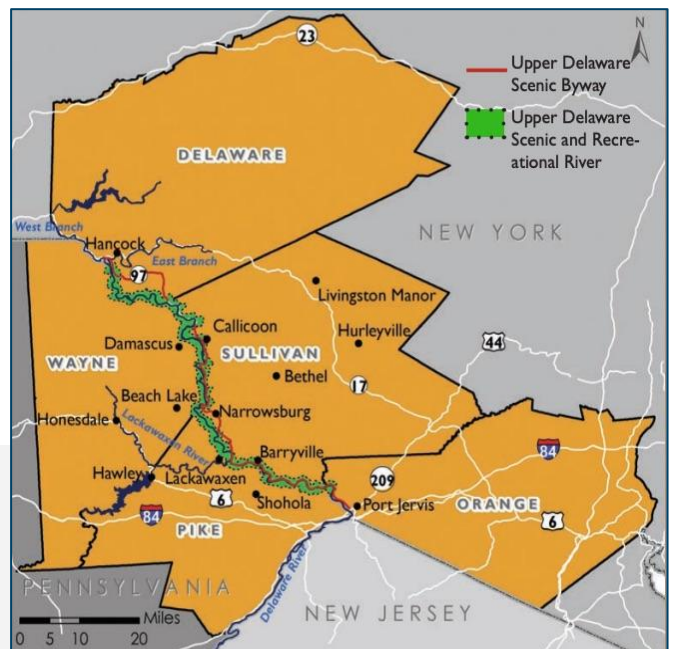
2. Gather Primary Data

Look specifically for information about your visitors that can help you estimate the two key inputs for this analysis: visitor numbers and average spending per visitor per trip.

Notes to keep in mind:

- If you want to estimate economic impact, the data must identify the number of visitors from outside your study area, and their spending. If your interest is economic significance, that breakdown is not necessary.
- Almost nobody can count every one of their visitors, so visitor counts are estimates. Do the best you can.
- This analysis typically uses annual visitation estimates and average visitor spending, accounting for seasonal variations. Do your best. If focusing on summer or winter visitors, adjust estimates accordingly.

Example: Five-County Study Area for the Upper Delaware Scenic and Recreational River



3. Identify gaps

Once you gather all of your primary data—current information about your visitors—assess whether you have all of the information you need, specifically about visitor numbers and visitor spending. Do you have what you need to generate these two numbers?

- Number of visitors in the category you are analyzing
- Average spending per visitor, per trip

It may take some work to get to the average spending per visitor per trip number. Two examples:

- If your data report average daily spending, you'll need to know how long the average visitor stays to calculate average spending per trip.
- If you have average spending per visitor party, you'll need to know the average size of the visitor party to calculate average spending per visitor.

If you do not have all of the information you need, what are you missing?



Photo: Gorilla/Adobe Stock

"Can I use a survey to estimate the number of visitors?"

By itself, a visitor survey cannot tell you how many visitors there are. But, in conjunction with other information sources, you may be able to make some informed estimates. If you have other ways of counting visitors or estimating visitor numbers, these may be easier and more accurate than this exercise in extrapolation.

For example: Combine survey data with hotel occupancy information to extrapolate the number of visitors to a community. To do this:

- Ensure the survey asks about party size, length of stay, and whether visitors are staying overnight in a hotel/motel in your study area.
- Use hotel occupancy data, combined with the average party size and average length of stay from the overnight visitors in your survey, to estimate how many overnight visitors stay in hotels and motels.
- Use this number, along with the percentage of the overnight visitor survey sample that stay in a hotel/motel, to calculate the number of overnight visitors who do not stay in a hotel/motel.
- Then use the estimated total number of overnight visitors, along with the percentage of overnight visitors in your survey results, to calculate the total number of visitors.

4. Identify Secondary Studies & Sources

If you have gaps, one way to fill them is by looking at “secondary” data sources, which may be from your local area or outside it.

Three rules of thumb:

- Pick studies or sources that are close to home, if you can find them.
- Pick studies from situations that are similar to yours (e.g., rural, suburban or urban; similar type of facility or activity; similar size trail network).
- Make sure they have the data you are missing.

For example: To estimate the economic impact of a 100-kilometre rail trail, you know visitor spending but lack annual user counts. If you can't collect this data, find studies with visitor counts for similar trails in comparable settings. Urban trail data is more relevant for urban trails than rural trail data.

Primary and Secondary Data Sources

Primary sources of data for an economic impact analysis are original, firsthand data collected directly from the source. This data is gathered through methods such as surveys, interviews, observations, and direct measurements. Examples include collecting visitor spending data through surveys at an event or tracking the number of visitors using a trail through manual counts or sensor data.

Secondary sources of data are previously collected and published data that were not originally gathered for the specific analysis in question. This data is obtained from existing reports, studies, databases, and records. Examples include using government reports, academic research, industry studies, and data from tourism or economic development agencies.



Snowmobiling at Pictured Rocks National Lakeshore, Michigan (U.S. National Park Service)

Another example: You have visitor counts and an average of spending per trip for visitors to your recreation area. You want to focus on economic impact, but your data do not show how many people are from outside the area. Start close to home as you try to answer that question. Is there a local or regional tourism promotion agency, park or recreation manager, or a similar site that has this information about their visitors? Even if it's for a somewhat different audience than yours, sources like these can help fill the gap.

As with everything in this DIY approach, do the best you can and keep notes so you know and can explain how you did the analysis. Aim to collect at least three secondary data sources, for each gap in your primary data. This is not a hard rule. If you have one great local data source, that may be all you need. Having more than one secondary data source for each gap can allow you to get a sense of the range of possibilities or calculate an average from multiple sources.

5. Generate Estimates to Fill Gaps

After gathering secondary data, use it to fill gaps in your primary data. Four tips:

- Use multiple sources to avoid reliance on a single study, especially if from outside your area.
- Use averages to reduce errors from using data that are not directly about your visitors and your area.
- Run your estimates past partners or others who are knowledgeable to see if they “smell” right.
- Make sure to adjust spending estimates for inflation if they are based on data from prior years.

Building on the examples in the previous step:

In the first example, you want to estimate the economic impact of a 100-kilometre rail trail, but have no information about how many people use the trail each year. You have found three studies that include visitor counts for other trails of a similar length in areas that generally seem like yours. How to estimate:

1. Calculate an annual number of trail users per kilometre for each of the three studies.
2. Average the figures from the three studies to produce a single estimate.

Where to Look for Secondary Data

- Economic impact or visitor studies from other trails, parks, or events.
- Visitor surveys from partners.
- Local Chambers of Commerce.
- State, provincial or university recreation and tourism departments.
- Federal outdoor recreation spending estimates by activity (search online).

If you are looking for trail studies, you're in luck! These searchable libraries have compiled many useful resources:

- Headwaters Economics [Library of Trail Benefits](#)
- American Trails [Resource Library](#)
- Rails to Trails Conservancy [Library](#)
- Outdoor Recreation Council of British Columbia's [research library](#)

In the second example, you have visitor counts and average spending per trip but lack data on the proportion of nonlocal visitors for economic impact analysis. A tourism bureau has shared a survey with the proportion of local and out-of-area visitors, and a trail association provided visitor postal codes from the past three years.

How to estimate:

- 1) Generate estimates for the proportion of nonlocal visitors for both sources.
- 2) Try to match data from these sources to the way that you are defining “nonlocal” for your study.
- 3) You may need to make some adjustments to your definition of “nonlocal” to use the secondary sources.
- 4) Average the two estimates or, if they seem too dissimilar from each other, use the data source that seems to best fit your situation.

6. Estimate Total Direct Visitor Spending

Multiply the number of visitors by the average spending per visitor, per trip. This is the total estimated direct spending.

7. Apply Cost of Living Adjustment to Average Spending, if Needed

If you have not already adjusted any old spending data for inflation, do so now. Use [this inflation calculator in Canada](#).

8. Estimate Total Spending Multiplier

To estimate the multiplier for your analysis, use the sales multiplier population density formula that was tested by [Wen-Huei Chang](#) specifically for recreation and tourism impact analysis.

You need two key details about your study area: total population and population density. Report density in thousands of people per square mile. To convert from density per square kilometer to square mile, calculate the density in thousands per km² and multiply by 0.3861.

Make sure the population is expressed in millions of people. If the study area population is less than a million, express it in tenths or hundredths of a million. Examples:

Population 1,200,000 = 1.2

Population 450,000 = .45

Population 12,000 = .012

If calculus isn't your thing, paste the formula into a search engine, substitute your population number (in millions) for POP and your population density (in thousands per square mile for POPDEN). *Do not change anything else about the formula!* Hit enter.

Formula

$$1.566 + 0.053 \times \ln(\text{POP}) - 0.009 \times \text{POPDEN}$$

Explanation

In this equation, $\ln(\text{POP})$ is the natural logarithm of the region's population, in millions, and POPDEN is population density, in thousands of persons per square mile.

9. Multiply Spending by Capture Rate and Multiplier

Now, you're ready to pull this all together.

Here's the equation:

Total visitor spending x capture rate (0.7) x multiplier

Fill in visitor spending from your calculations or estimates (see steps 6 and 7 above), and fill in the multiplier that you calculated (step 8). The resulting number is the total local business activity generated by visitor spending associated with whatever you are studying: your program, park, natural area, trail, or recreation or cultural facilities and events.

How to refer to your findings

To keep this analysis simple (and do-it-yourself), the focus is on the total value of goods and services produced by local businesses as a direct result of visitor spending and as a result of the "ripple effects" of that spending. In addition to private businesses, this can include revenues of nonprofits and government agencies when they are selling tours or merchandise, charging admission or recreation access fees, hosting paid events, and the like.

Use statements like these to report your economic impact estimate:

- The total local sales impact of visitor spending is estimated to be \$X million.
- Visitor spending supports \$X million in total sales to our local economy, representing a significant portion of the economic activity in the area.

- In 2023, visitors spent \$X million in the Example River Valley, with a total sales impact of \$Y million.
- Spending by visiting trail users supported a total of \$X million in local business activity.
- Spending by visitors from outside our regional district had a total impact of \$X million in local business activity.

If you are reporting on economic significance rather than economic impact, you may use similar language to these statements, but make it clear that you are talking about out-of-town visitors and locals. For example:

- The total local sales impact of spending by water trail users is estimated to be \$X million in 2023.
- Spending associated with outdoor recreation by local residents and visitors supports \$X million in total sales that benefit our local economy, representing a significant portion of the economic activity in the area.
- In 2023, visitors to our geopark, including out-of-town visitors and local residents, spent \$X million in the Example River Valley. This spending supported over \$Y million in local economic activity.
- Spending by local and out-of-town trail users supported a total of \$X million in local business activity.

Avoid the terms "total economic impact" and "total economic activity." They usually encompass a broader range of economic measures, which could include total sales, value-added (such as contributions to GDP), employment, and income generated.

Considering the importance of outdoor recreation in travel decisions

You may have seen questions on visitor surveys asking, “How important was X in your decision to visit this area?” Answers to questions like these can provide information useful in understanding why people visit and in marketing, but they can also be used to help put economic impact estimates in context. If you have this kind of information, you may want to use it. Is your trail, or outdoor recreation, or cultural attraction a primary draw that helps attract visitors who also do other things in the area? Is it one of a few important attractions? Does it add value for visitors who are in the area for other reasons?

If you collect data over time, watch to see if the answers change. For the communities near the Virginia Creeper rail trail, the trail was initially a lesser attraction — most people came to town for cultural events and many of them learned about the trail for the first time when they were already in town. Over time, the trail became better known and more of an attraction in its own right, ultimately eclipsing cultural events as a draw for visitors.

You could modify the direct spending estimates by applying these proportions. If total visitor spending is \$1,000,000, you could allocate spending as follows:

- \$300,000 — All of the spending by the 30% of trail users who cite your trails as the primary reason for their visit
- \$250,000 — Half of the spending by the 50% of trail users who cite your trails as one of a few reasons for their visit

- \$50,000 — 25% of the spending by the 20% of trail users who say your trails were not important to their travel decision. The rationale for including a portion of their spending is that they did use your trails during their visit, so there was likely some directly related spending, or using the trails may have extended some visits.

This is not an exact science, since it requires making some reasoned estimates of what proportion of spending should be attributed to the trail system.

Consider whether you want to note that you understand some of the impacts of spending by your trail users in the area may be motivated by other travel priorities and activities. You do not have to adjust your impact analysis to explain this, but if you have the necessary data, you could consider offering an adjusted analysis as an alternative to, or instead of, fully attributing the trail user spending to the trail. Without adjusting your analysis, one simple way you could frame this is: “In 2023, 30% of trail users reported that our trails were the primary reason they chose to visit this area.”



*Downtown Cold Spring, New York
(kirkikis/Adobe Stock)*

Estimating jobs, wages and other impacts

As noted above, this do-it-yourself analysis focuses on the total value of goods and services produced by local businesses as a direct result of visitor spending and as a result of the “ripple effects” of that spending. You may also wish to estimate other aspects of economic impact such as the number of jobs supported, total labor income (wages and proprietary income) or state/provincial and local taxes.

Doing this directly is beyond the scope of the DIY analysis, but you can estimate these numbers by referencing other economic impact or economic significance studies about tourism in your area. Here’s how:

- 1) Find a recent study (ideally less than five years old) of the impact of tourism from as close to your study area as possible. If your province, local tourism bureau, university or another organization has done a study of tourism impacts in your county or your part of the province, that would be ideal, or look for studies of facilities similar to yours in your region. In a pinch, you can use a state or provincial tourism study. Make sure the study includes the impact you want to estimate: jobs, income, or state/provincial/local tax revenue.
- 2) From these studies, calculate the ratio between total *direct* visitor spending and the aspect of economic impact you wish to estimate. Here is an example from a study of the economic impact of local park visitor spending in seven Mississippi counties:

Direct visitor spending = \$5.1 million

Total jobs supported = 68

Total labor income supported = \$1.4 million

Ratio of jobs to visitor spending =
 $68/5,100,000$
0.00001333

Ratio of labor income to visitor
spending = $1,400,000/5,100,000$
0.2745

- 3) Estimate jobs and labor income by multiplying your total visitor spending by the ratio. For example, if visitor spending in your analysis is \$3 million:

Jobs = $3,000,000 * 0.00001333$
40 total jobs supported

Labor income = $3,000,000 * 0.2745$
\$823,500 total labor income
supported

Taxes can be tricky to accurately estimate using studies that do not exactly match your study area because state/ provincial and local tax rates can vary. If you cannot find a study that closely matches your impact area, you may still be able to estimate specific types of tax revenue using the data you have collected. For example, in many places, hotels, motels and other lodging establishments collect a specific lodging tax. If your visitor spending data allows you to estimate the total amount that visitors spent on accommodations, you can estimate the lodging taxes collected by applying the tax rate to the amount spent on accommodations.

Explaining your methods

When presenting your findings, offer a simple explanation of how you arrived at them. Academic and professional economic impact analyses typically include lengthy methods sections. Yours can be simple, but don't skip this step. Explaining your approach can help build confidence in your findings, and being upfront about it can help you avoid many questions and have a ready response when questions do arise.

At minimum, the explanation should include where you got key data, especially visitor spending and number of visitors.

You may also want to note that you did your own analysis using a tourism and recreation multiplier formula based on population density. A simple, straightforward description is all you should need for a slide deck, public report, press release, and other non-technical formats for presenting your findings.

If you are creating a technical report, you may add more detail (e.g., the citation for the multiplier, how you created any needed estimates, how many people answered your survey and generally who they were).



Park ranger and two visitors using off-road wheelchairs, Great Smoky Mountains National Park (U.S. National Park Service)

Communicating About Economic and Community Benefits

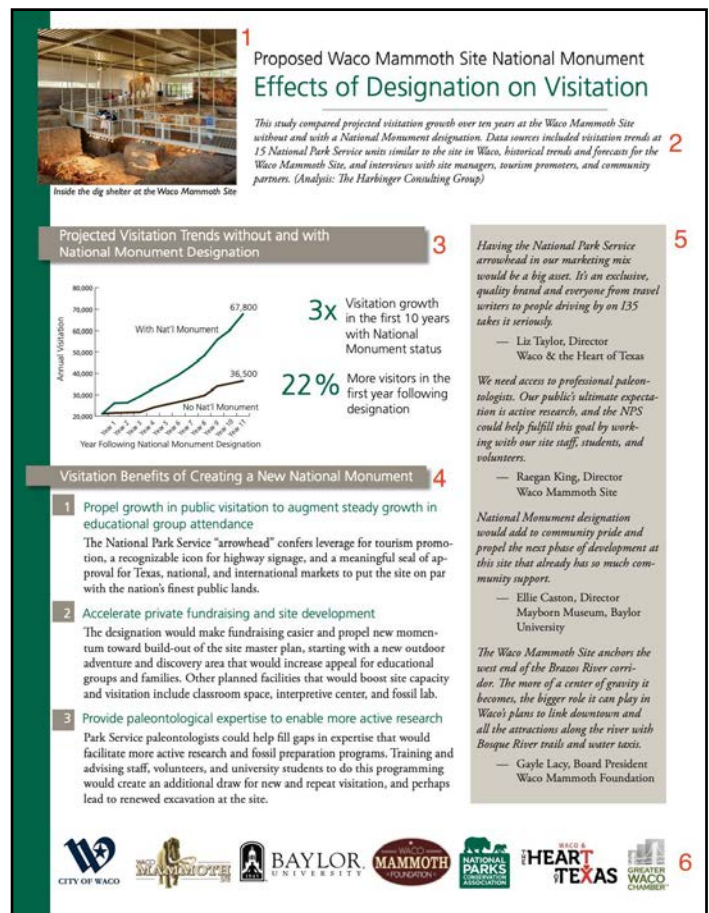
Economic impact is only one out of many potential economic and community benefits that outdoor recreation, local culture, heritage tourism and other similar activities may offer. This section provides insights into how to use the findings from your study, including how to work with some of those other values to provide context and meaning that makes your story more robust and memorable.

Use your analysis for more than just a couple of talking points

While it is fine to keep your story simple, offering some context and telling a larger story is usually more effective than just stating the highlights from your study. A simple one-pager like the one on this page can offer additional information to put key findings into context and tell a memorable story. This one-pager is focused on the projected effects of National Monument designation on visitation at the Waco Mammoth Site in Texas.

Each of the six main elements plays a specific role (numbers in the list below correspond with the red numerals on the one-pager).

1. Photo shows that the Waco Mammoth Site is already well developed, including significant visitor facilities.
2. Short explanation of methods establishes the legitimacy of the analysis.
3. Simple line graph clearly shows the projected comparison in visitation trends with or without designation. Text calls out two key “sound bites.”
4. Text identifies three specific reasons that designation is expected to propel visitation growth over time.
5. Quotations offer supporting insights from key partners.
6. Logos show, at a glance, the support of partners with significant organizational wherewithal.



Put your findings into context

While your study may focus on visitor numbers, visitor spending and/or an estimate of economic impact, the real story of community and economic benefits is always broader. Including some of these other benefits when you report on your findings can offer additional support for the value of your trails, heritage site, outdoor recreation, cultural tourism — whatever you are studying.

“It’s more than just...” is a simple way to frame this. For example, an economic impact study Harbinger completed for the Delaware Water Gap National Recreation Area found that, in 2014, three million out-of-town visitors spent \$120 million visiting the park, adding \$2.5 million in hotel and sales tax revenue to state, provincial and local government coffers. That’s a good story by itself, but adding some context makes it more powerful.

The impact of Delaware Water Gap visitor spending is also a story of leverage: in 2014, every dollar the federal government invested in running the park yielded \$24 in sales for local businesses. And it’s more than just visitor spending that matters.

- The park’s total impact exceeded \$219 million, including all park visitors and National Park Service employment.
- The park’s economic significance is also tied to the value of natural areas the park protects. The ecosystem services provided by wetlands, forests and other natural areas in the park would cost \$159 million a year to replace. Think flood control, fish and wildlife

habitat, and carbon storage. Eight million people get their drinking water from the forested middle and upper Delaware River Basin, a landscape the park helps protect.

- The park is also a magnet for community/volunteer support. Volunteer efforts add up to the equivalent of 53 full-time employees each year, a contribution worth \$2.6 million that adds to every area of park operations. In other words, people see the park as worth the investment of their time.

Substantiating other community and economic values

What other community and economic benefits can you explore, document and use when communicating your study’s findings? Here are some examples, along with suggestions for how to substantiate these values.

Quality of life and appeal to long-time and new residents

Research suggests a relationship among area amenities, quality of life and economic performance. An amenity is an attribute that enhances a location as a place of residence—like easy access to nature, outdoor recreation opportunities, a friendly small-town atmosphere, an active creative scene, and cultural traditions. Explore how to substantiate local values in the July 2022 American Trails webinar, [Trails for Us: How Trails Benefit Our Local Communities](#). Check with the province or universities for locally relevant studies related to arts & culture, community economic development, recreational amenities, and historic preservation. Survey or do focus groups with local residents or business owners.

Physical activity, health and health care cost savings

Research suggests a relationship between access to recreation facilities like trails and levels of physical activity—and between levels of physical activity and overall health and health care cost reductions over time. Explore how to substantiate these connections using local data and studies from other places in the July 2022 American Trails webinar, [Trails for Us: How Trails Benefit Our Local Communities](#). Check the Headwaters Economics Library of Trail Benefits for studies, and see the Resource Section for other resources to explore health benefits of parks and outdoor recreation.

Local business growth and success

Research and observation suggest that trails and other area amenities can affect business location decisions, business expansion, and new business formation. Explore ways to track downtown vitality and use what you learn to create more of the change your community wants in the July 2022 American Trails webinar, [Trails for Us: How Trails Benefit Our Local Communities](#). Municipal officials, local business groups and chambers of commerce are good potential partners and information sources.

Volunteer contributions and benefits

See the Independent Sector annual report on [Value of Volunteer Time](#). Keep it simple by multiplying your volunteer hours by the average value per hour for your province, or do a more sophisticated analysis by breaking volunteer hours down by type of work and assign labor value that way. Also, consider that volunteers get something out of volunteering. Do a survey or some interviews to help tell those stories.

Natural area or ecosystem services

For data on the per-acre value of a wide range of ecosystem services, see [Socioeconomic Value of the Delaware River Basin in Delaware, New Jersey, New York, and Pennsylvania](#). Combine with data from the [2020 Land Cover of Canada](#) dataset to make estimates based on local acreage of different types of natural systems (e.g., wetlands, forests, agricultural land, riparian areas, etc.) Dig in deeper using the technical appendices for [Return on Environment - The Economic Value of Protected Open Space in Southeastern Pennsylvania](#), 2011.

Heritage and historic preservation

A variety of existing studies may help substantiate the value of heritage and historic preservation, including basic cost studies (e.g., financial calculations, audits, cost/benefit analyses), economic impact analyses, and case studies. Another approach is to compare property values in heritage areas or historic districts to those in other areas using local tax assessment data. If historic preservation enhances aesthetics, walkability, and tourism, property values generally increase over time. Specific preservation projects may result in significant financial, volunteer investment, and local business activity, which may also be reported.

Wildlife habitat

Substantiating the value of wildlife and habitat protection largely boils down to putting numbers on something with an intrinsic value that already resonates with most people. Take advantage of that connection by using photos and stories along with data. Some places to look for data:

- Visitor surveys or interviews with hospitality business owners that explore the importance of wildlife to visitors.
- U.S. Fish and Wildlife Service [National Survey of Fishing, Hunting, and Wildlife-Associated Recreation](#), as well as estimates produced by other agencies and conservation groups.
- State or provincial and local fishing, hunting and trapping license sales.
- Polling that shows support for habitat restoration and protection financing and programs.
- Data and success stories from habitat conservation programs and projects, including budgets, local contractors, and improved outcomes for wildlife viewing, fishing and hunting.

Stewardship and restoration

Organizations that manage public lands and conserved properties invest in their long-term stewardship, restoration and maintenance. These investments may support monitoring, enforcement, visitor management, facilities and habitat management, maintenance, taxes, insurance, administrative costs, restoration projects and more. Report these investments using financial

numbers and projections, volunteer hours, partnerships, fundraising, and impact stories (e.g., your management approach was widely adopted, local contractors hired, restoration benefited adjacent landowners, etc.).

Education and research

Education and research impacts may include spending by visiting and resident researchers and staff, partnerships with universities and public or private institutes, grant funding for research and administrative costs. In addition to using numbers and projections, stories can be particularly effective in conveying impact in this area (e.g., youth internships, career pathways, significant partnerships, impact on students and participants, etc.).

Property values

Generally speaking, the impact of open space on property values is positive and significant. Close proximity to protected open space tends to be reflected in increased home values in cities, suburbs and rural areas, although the premium tends to be larger in more densely populated areas. Check with nearby universities, local governments or regional government organizations, and look at the [Headwaters Economics Library of Trails Benefits](#) for property value studies. Or do your own estimate using annual property sales data for a period of five years or more (from your city or county assessor's office), parcel GIS shape files for the geographic area (look for county or state/provincial GIS databases), and a shape file of the trail or open space you're studying.

How to do the analysis?

- Geocode the sales data.
- Construct a ¼ mile buffer around the trail(s) — or ½-1 mile around open space.
- Calculate average sale price inside and outside the buffer zone for each year/year range.
- Calculate percent change for each year/year range inside and outside the buffer zone.

There may be other values that apply to your specific area, such as sustaining or reviving traditional ways of life and local culture, reconciliation, youth employment, local housing, and more.

Outlining and telling your story

As you work through the process of visitor research and data analysis, you will assemble a collection of data, calculations or estimates, and supporting ideas and context that can be used as you report on what you learned. Where to start?

Think first about who you want to talk to or engage and what you want them to do as a result. Some typical audiences and intended outcomes include:

- Local, state, provincial, national officials > authorize funding, provide incentives
- Community members > recognize & feel proud, volunteer, donate
- Stakeholders > understand, advocate, become partners,
- Partners > increase involvement and impact

Community Tool Box

The [Community Tool Box](#) is a free online resource offering tools and tips for building healthier communities and driving social change. It includes sections on research tools that can help you dig into community and economic benefits, including:

- [Focus groups](#): Small-group discussions led by a trained facilitator to gather opinions.
- [Surveys](#): Useful for collecting insights from residents and businesses.
- [Photovoice](#): Participatory research through photos or videos.

It's a service of the Center for Community Health and Development at the University of Kansas.

Use these insights as a guide, but don't distort reality to appeal to your audience. Base your story on the data and analysis, not on what you or your audience want to hear.

A few tips for communicating visitor research and analysis:

- Feature numbers: Use relevant figures to back your findings.
- Create meaning: Summarize key points into a compelling story.
- Organize around meaning: Let your story guide how you present findings across formats (e.g., reports, social media).
- Include methods: Share research methods when relevant.

Other Ways to Use Visitor Research Findings

There are many ways to use insights from visitor counts, surveys, and research. Visitor data can become a key resource for managing your site and stewarding community resources. This overview highlights just a few potential applications for visitor research findings.

Detecting trends and patterns

Data collected over time can reveal patterns in use, shifts in visitor preferences, and changes in travel behavior (e.g., origins, length of stay, companions), helping shape action plans and strategies.

Directing volunteer and staff effort

Counts and survey data may highlight unmet visitor priorities or patterns that could influence how your organization allocates time and resources. One group used trail counter data to adjust staffing for high- and low-demand periods.

Gleaning more benefit from visitors

Visitor surveys often reveal satisfaction, unmet needs, and preferences, offering insights on encouraging visitors to stay longer, return more often, and spend more locally.

Understanding and balancing perspectives

Survey data can highlight the views of visitors, recreation users, residents, landowners, and other groups. These insights aid in management, negotiations, and conflict resolution. Visitor counts can pinpoint congestion, user conflict areas, and guide enforcement tactics and long-term strategies.

Planning and future scenarios

Over time, visitor data informs facility expansion, recreation challenges, conflict management, and other adjustments. It also supports scenario and planning efforts.

Monitoring and evaluation

Visitor research helps establish metrics for monitoring and evaluation, tracking key indicators over time.

What can you do with trail count data over different time periods?



Graphic:
Eco Counter



Resources

Annotated & Organized By Chapters

Resources for Chapter 3: Using Secondary Data Sources

Outdoor Recreation Studies & Data

[Library of Trail Benefits](#), Headwaters Economics

A collection of studies on the positive impacts of trails on businesses, public health, and quality of life. Searchable by type of benefit, use, year, and region.

[Resource Library](#), Rails to Trails Conservancy

A library of timely research, articles and cutting-edge resources for the trails, walking and bicycling movement. Search for “benefits of trails” or “trail planning.”

[Impact of Trails Hub](#), American Trails

A collection of resources including studies and organizations focused on the impact of trails. Part of a larger [Resource Library](#), which includes a directory of [resources by state](#).

[Resource Library](#), Trust for Public Land

Extensive library of resources that help communities make the case for parks, open space, and conservation policies. Search for “parks,” “national parks,” or “trails and greenways” and “report” to find economic impact studies and other resources.

[The Economic Impact of Local Parks](#), National Rec. and Park Association

The report details the nationwide economic impact of parks and recreation at the state level, including direct, indirect, and induced effects of local agencies' operations and capital spending in each state and D.C.

[Research and Publications](#), Canadian Fitness and Lifestyle Research Institute

Searchable database of bulletins and papers based on the Institute's research into physical activity and sport participation among Canadians. Search for “recreation” in key research areas.

[Participation in Outdoor Activities](#), Statistics Canada

Data from the biannual Households and Environment Survey, including information about the use of parks and public green spaces and outdoor activities.

[BC Participation in Outdoor Activities](#)

Outdoor Recreation Council of BC
Annual Ipsos polls since 2022 showing the participation of British Columbians in outdoor recreation.

[Library of all 50 Statewide Comprehensive Outdoor Recreation Plans](#), Society of Outdoor Recreation Professionals

The Statewide Comprehensive Outdoor Recreation Plan (SCORP) guides public outdoor recreation statewide, updated every five years, using surveys and other analyses.

[Research Library](#), Wisconsin Office of Outdoor Recreation

Links to reports and research that detail the benefits and trends of outdoor recreation both nationally and for Wisconsin communities.

Outdoor Recreation Industry and Economy Data
[Outdoor Industry Association](#)

Publishes outdoor recreation market and participation research, the bulk of which is available only to members. Its [2017 Outdoor Recreation Economy](#) report provided a snapshot of the impacts of the industry in the U.S.

[Outdoor Recreation Economy By U.S. State](#), Headwaters Economics

[Outdoor Recreation Satellite Account](#), U.S. Bureau of Economic Analysis

National, state-by-state and interactive data about economic activity as well as the sales generated by outdoor recreational activities. Also, each industry's production of outdoor goods and services, contribution to U.S. GDP and industry breakdowns of outdoor employment and compensation..

[Outdoor Recreation Roundtable](#)

With 250,000 members in the United States, Canada, Mexico and 14 other countries, the [membership list](#) of this industry coalition provides extensive leads for data searches related to most aspects of the outdoor recreation industry. Other resources include national and state-level outdoor recreation economy reports.

[Outdoor Recreation Council of BC](#)

Economic impact studies collection.

[Outdoor Recreation Roundtable of Canada](#)

The list of 13 founding members is a resource for outdoor recreation industry data searches ideas. The National Marine Manufacturers Association of Canada, for example, provides [statistics and reports related to markets and economic impact](#).

Travel and Tourism Data

[Travel and Tourism](#), U.S. Bureau of Economic Analysis

National data on sales in the travel and tourism industry, with historical trends data available.

[U.S. Travel Association](#)

Much of its data is reserved for members only, but annual [State of the Travel Industry and economic impact reports](#) are publicly available, as well as [fact sheets](#) from various analyses.

[National Travel and Tourism Research](#), U.S.

International Trade Administration

A wide range of research about international travel to the United States and its economic impact. Includes market trends for national parks and monuments and cultural/heritage tourism.

[Travel and Tourism: A Research Guide](#), Library of

Congress

A collection of sources for international and U.S. travel and tourism data.

State/Provincial and Local Data and Reports

Search state or provincial tourism agencies and city departments or tourism bureaus for data specific to a particular locale. One example: Kootenay Rockies Tourism has a page dedicated to [visitor highlights, travel patterns and tourism impacts](#).

[Research and Insights](#) and [Regional Research](#)

sections, Destination BC

Data and insights from resident research, tourism industry performance indicators and regularly updated Tourism Industry Dashboard with community- and province-specific data on accommodations, convention center usage, regional airports passenger volume and more. There is also a [guide to how Destination BC collects information](#) and how communities and BC Tourism Partners can participate. Also, publications and reports focused on one of British Columbia's six tourism regions.

[Research](#), Destination Canada

Regular data, market intelligence, and industry analysis help businesses market to international travelers and grow Canada's tourism industry. Reports are updated monthly, quarterly, or annually, with ad hoc reports on sectors released as new information becomes available.

[Travel and Tourism Statistics](#), Statistics Canada

Provides national, state, provincial, and territorial data on tourism, including domestic and international travel, spending, jobs, traveler characteristics, and key tourism indicators.

Socio-Economic Data

[Economic Profile System](#), Headwaters Economics

A free, easy-to-use tool that provides access to 17 socioeconomic reports. Customized reports are available for U.S. communities, counties, and states and can be downloaded as Excel or PDF files.

[Economic and Social Reports](#), Statistics Canada

In-depth research, brief analyses, and current economic updates on a variety of topics, such as labour, immigration, education and skills, income mobility, well-being, aging, firm dynamics, productivity, economic transitions, and economic geography.

Resources for Chapter 4: Counting and Estimating Visitor Numbers

[Trail Use Trends: Leveraging Data to Make the Case for Trails](#) Rails-to-Trails Conservancy webinar

Trail professionals from around the United States discuss data collection along trails. Panelists share how they have developed trail traffic monitoring programs, on the local, regional and national level, as well as how they are collecting more detailed information about who is using their trails. The discussion includes a focus on how this data is leveraged in a myriad of ways for advocacy, funding and telling the story of trails in communities.

General Guides to Conducting Visitor Research

[The Essential Guide on How To Conduct Visitor Research](#), Destination BC

This guide is intended to help BC tourism suppliers conduct tourism research to strengthen and grow their businesses. It includes information on what tourism research is and why it's necessary, what the research process entails, how to access secondary research, and how to conduct primary research. It also provides advice on data compilation and analysis, collaborative research partnerships, and research projects with consultants. Includes several methods for primary data collection and guidelines for secondary research.

Manual Trail User Counting

[Connecticut Trail Census](#)

Relies on volunteers to conduct manual counts, which are used to calibrate automatic visitor counters. The program's volunteer [introduction video](#) (13 minutes) and [slide deck](#), and training webinar [linked from this page](#) are all great training resources.

Model manual count forms

[Connecticut Trail Census](#) and University of Southern California [Active Living Policy and Environmental Studies Program](#)'s research project instructions.

[Conducting Bicycle and Pedestrian Counts in Your Community: Count Manager Training](#),

Minnesota Department of Transportation and Minnesota Department of Health Bicycle and Pedestrian Counting Initiative

Slide presentation that includes guidance for counting in urban areas.

[How to Conduct Trail Counts](#), Portland Metro

Slide presentation that includes different counting scenarios.

Automatic Trail User Counting

[2019 Outdoor Recreation Economic Impact Analysis in the Fraser Valley Regional District](#),

Fraser Valley Regional District

Study used vehicle counts to estimate recreational use, detailing the sampling plan's development and modifications during data collection, and noting activities for which this method was ineffective.

[Guidebook on Pedestrian and Bicycle Volume Data Collection](#) National Cooperative Highway Research Program

Describes methods and technologies for counting pedestrians and bicyclists, offers guidance on developing a non-motorized count program, gives suggestions on selecting appropriate counting methods and technologies, and provides examples of how organizations have used non-motorized count data to better fulfill their missions.

[Trails Count!](#) Bay Area Trails Collaborative

This report lays out an approach for developing a program that can be used in any region, and includes a list of resources that should help anyone looking to make a stronger case for trails.

There are do-it-yourself instructions for building trail counters available online. Searches like “build your own trail counter” will turn up ideas and instructions. Trail advocate, Loren Konkus, offers in-depth how-tos [here](#).

Using Novel Data Sources

[Innovative New Ways to Count Outdoor Recreation: Using data from cell phones, fitness trackers, social media, and other novel data sources](#), Headwaters Economics.

Reviews pros, cons and how-tos of using data sources other than traditional counting. See also the Headwaters Economics [Library of Trail Benefits](#) and search for “novel visitor use estimates.”

[Methods for County-Wide Trail & Pathway Activity Estimates Using Strava Data](#), Headwaters Economics

Detailed methodology for applying this method, which involves ground-truthing using automatic trail counters, in rural areas. See an explanation of the project [here](#).

[Mobile Analytics vs. Traditional Surveys: A case study exploring visitation patterns and visitor demographics at an outdoor recreation destination](#), Amy Choi, Ph.D.

Compares visitor data collected using traditional trail counters and visitor surveys with mobile data from Placer.ai and Streetlight Data.

Some Trail Counter Manufacturers

[Eco-Counter](#) Widely used pedestrian and vehicle counting systems. Website offers information and case studies to help you think through different counting applications.

[Diamond Traffic Products](#) Infrared trail counters with a transmitter mounted on one side of the trail and a reflector on the other side.

[Trafx](#) Low-cost, long-lived, portable infrared trail counters that work without reflectors.

Analyzing Data and Estimating Trail User Numbers

[Calculating Trail Use from Counter Data](#), Stephen Martin, Ph.D.

This paper provides mathematical formulas and explanations for estimating trail use based on data from one or two counters, without knowing users’ routes. Placer.ai and Streetlight Data.

Visitor Counting In Natural Areas

[An Introduction to Visitor Use Monitoring Methods in Wilderness](#), U.S. Forest Service

Wilderness Advisory Group.

Developed in 2019 and revised in 2021 as a resource for managers to monitor recreational use in wilderness. Also applicable to other natural areas. Covers trailhead car counts, trail counts, trailhead registration and citizen science approaches.

[Visitor Estimation Evaluation and Strategies](#), U.S. Fish and Wildlife Service.

A resource for planning a visitor counting strategy for a natural area. It includes three case studies of existing and recommended data collection methods for a variety of visitor types and situations.

[Visitors count!](#) Guidance for protected areas on the economic analysis of visitation
UNESCO 2021

Drawing on case studies from around the world, Visitors Count! aims to build awareness, knowledge and capacity internationally on how to best undertake economic evaluations of tourism in protected areas, and thereby contribute towards a globally acknowledged standard methodology. In addition to visitor counting methodologies, this document includes sections on surveys, economic analysis, case studies and more.

[Visitor Monitoring in Nature Areas: a manual based on experiences from the Nordic and Baltic countries](#), Swedish Environmental Protection Agency, 2007

Includes sections on counting, surveying and reporting.

Resources for Chapter 5: Surveying Visitors

Model Surveys to Adapt

Using a high-quality sample survey as a starting point can help you decide which questions to ask and provide a model for phrasing standard survey questions. Model surveys for different situations:

- A community or tourism region — [Visitor Survey Toolkit \(Visit Scotland\)](#)
- Museum or visitor center — [Te Papa Visitor Survey Guide \(New Zealand\)](#)
- Multi-use trails — [Trail User Survey Workbook \(Rails to Trails Conservancy\)](#) includes four sample surveys for metropolitan, suburban, rural non-motorized multi-use, and rural motorized multi-use trails
- Public lands and nearby communities — [Letchworth Gateway Villages survey](#)
- Hikers and outdoor recreation visitors — [Harlem Valley Appalachian Trail Conservancy survey](#)

[Developing a Trail User Survey to Quantify Health Impacts of Trail Use](#), Thomas Gotschi *et al*
Details the survey development and piloting process. Does not include the survey questionnaire itself, but references the World Health Organization [Global Physical Activity Questionnaire](#).

Sample Visitor Survey Reports

There are many visitor survey reports to use as models and inspiration. Here are several:

[Summer 2023 Golden Mountain Biking Economic Impact – Final Report, Align Consulting Group for Golden Cycling Club](#)

Visitor survey report and economic impact analysis.

[Mountain Biking in Squamish: Social, Cultural & Economic Impacts, Larose Research & Strategy for the Squamish Off-Road Cycling Association](#)

Visitor survey report

[Visitor Survey 2014-2015](#), Outer Banks Visitors Bureau

Straightforward report on findings from a visitor survey, including a brief findings section and the survey form.

[Pennsylvania Anthracite Heritage Museum Visitor Intercept Survey: Report of Methods and Findings](#), Pennsylvania Historical and Museum Commission

[Destination Greater Victoria 2019 Visitor Survey Report](#)

Comprehensive visitor survey report.

[Trail Visitor User Survey: A Pilot Study of Visitation at Hellman Park and Turnbull Canyon](#),

Puente Hills Habitat Preservation Authority

Report details methodology and findings for a visitor study that relied on intercept surveys and parking lot counts conducted on five days. Includes survey forms.

[Trail User Report 2016](#), Janesville Area

Metropolitan Planning Organization

Includes trail counts and visitor survey findings.

[2017 Visitor Survey Summary of Findings + Strategic Directions](#), Letchworth Gateway

Villages

Comprehensive visitor survey report including market analysis. Includes other research findings and recommendations, as well.

[Making Trails Count in Illinois](#), Trails for Illinois

Trail-by-trail count data and combined survey findings.

[Miami Valley Trail User Survey Report](#)

Straightforward survey report with simple economic impact analysis.

Resources for Chapter 7: Putting Your Findings to Use

Economic Impact and Significance Studies

There are many reports on economic impact and economic significance studies to use as models and inspiration. Here are several:

[Summer 2023 Golden Mountain Biking Economic Impact – Final Report, Align Consulting Group for Golden Cycling Club](#)

Economic impact analysis.

[Mountain Biking in Squamish: Social, Cultural & Economic Impacts, Larose Research & Strategy for the Squamish Off-Road Cycling Association](#)

Economic impact analysis.

[2022 National park visitor spending effects: Economic contributions to local communities, states, and the nation](#). Natural Resource Report NPS/NRSS/EQD/NRR— 2023/2551. National Park Service, Fort Collins, Colorado.

Comprehensive economic significance analysis for the U.S. National Park Service including estimates for individual parks.

Headwaters Economics [Library of Trail Benefits](#)

American Trails [Resource Library](#)

Rails to Trails Conservancy [Resource Library](#)

Three searchable libraries of studies for secondary data to fill gaps for estimating economic impact or significance.

Data Tools

U.S. Bureau of Labor Statistics [inflation calculator](#) or Bank of Canada [inflation calculator](#)

Use these to adjust old visitor spending data to current dollars.

U.S. Census Bureau [population data](#) and [census tract selection map](#) or Statistics Canada [Census of Population data](#) and [Census Geography](#)

Census data, including population estimates and land area of census tracts, may be used to define a study area and calculate a sales multiplier.

Resources for Substantiating Other Community and Economic Values

[Trails for Us: How Trails Benefit Local Communities](#). American Trails webinar, July 2022.

Explores how to substantiate local values associated with trails.

[Value of Volunteer Time](#). Independent Sector. Estimates the average value of a volunteer hour in the U.S. and in each state.

[Socioeconomic Value of the Delaware River Basin in Delaware, New Jersey, New York, and Pennsylvania](#). Gerald Kauffman, 2011.

Provides data on the per-acre value of a wide range of ecosystem services.

[2020 Land Cover of Canada](#) dataset

Use to estimate land area of for ecosystem services analysis.

[Return on Environment - The Economic Value of Protected Open Space in Southeastern Pennsylvania](#). Delaware Valley Regional Planning Commission and the GreenSpace Alliance, 2011

Use the technical appendices to guide an analysis of economic value, including ecosystem services.

[National Survey of Fishing, Hunting, and Wildlife-Associated Recreation](#), U.S. Fish and Wildlife Service.

Source for data about economic value of wildlife-related recreation.

Headwaters Economics [Library of Trail Benefits](#).

Searchable library of studies includes some focused on property values.

[Community Tool Box](#), University of Kansas.

Resource with tips and tools for taking community action including sections on research tools that can help you research community and economic benefits



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