



Federal Interagency Council on Outdoor Recreation

EXPLORE Act Section 133

Monitoring for Improved Recreation
Decision Making

June 2026



Background

Section 133 of the Expanding Public Lands Outdoor Recreation Experiences (EXPLORE) Act, passed on January 4, 2025, directs the Secretaries of the Interior, Agriculture, and Commerce, and the Assistant Secretary of the Army for Civil Works to establish pilot protocols at not fewer than 10 land management units under the jurisdiction of each of the Secretaries to model recreation use patterns (including low-use recreation activities and dispersed recreation activities) that may not be effectively measured by existing general and opportunistic survey and monitoring protocols. The specific agencies involved in this effort are:

- For the Secretary of the Interior (DOI): the Bureau of Land Management (BLM), the National Park Service (NPS), the Bureau of Reclamation,¹ and the U.S. Fish and Wildlife Service (USFWS)
- For the Secretary of Agriculture: Forest Service (FS)
- For the Secretary of Commerce: the National Oceanic and Atmospheric Administration (NOAA) Office of National Marine Sanctuaries
- For the Assistant Secretary of the Army for Civil Works: the United States Army Corps of Engineers (USACE)

Pilot Project Approaches

Understanding recreation-use patterns is important as land managers assess how natural resources are being used by the public and how to best address current and future recreation demand. Widely adopted measurement techniques, such as the use of traffic counters or recreation visitor surveys, form the foundations of the programs typically employed by Federal agencies to measure and describe recreation-use patterns.² In some cases, the characteristics of recreation sites or the recreation activities at those sites make it difficult to fully describe recreation-use patterns. Newly available approaches and technologies have the potential to improve how recreation managers measure recreation-use patterns on Federal lands. The pilot projects proposed for meeting the requirements of Section 133 use a variety of on-site techniques and emerging data and technologies to describe recreation-use patterns. These techniques are summarized below.

On-site techniques

Federal agencies have long used data gathered on the ground at recreation sites to describe recreation-use patterns. These on-site approaches include activities such as manually counting visitors, summarizing trail permit data, installing mechanical counters, and providing logbooks for visitors to record their use. When using these techniques some key considerations are the spatial and temporal coverage of the data, the representativeness of the data for all visitors, consistency of the

¹ Bureau of Reclamation staff contributed to developing this list of proposed pilot projects, though the list includes no projects at Bureau of Reclamation recreation areas.

² Hanson, D, E.J. Wilkins, S.A. Wood, C. Crowley, W. Boone, R. Schuster. 2025, Monitoring recreation on Federally managed lands and waters—Visitation estimation: U.S. Geological Survey Scientific Investigations Report 2025–5022, 46 p., <https://doi.org/10.3133/sir20255022>.

data over time, maintenance requirements, and cost. The pilot projects listed in Table 1 (DOI), Table 2 (NOAA), Table 3 (USACE), and Table 4 (Forest Service) may incorporate several different on-site techniques (frequently in tandem with use of emerging technologies and data sources) including:

- Manager activities
 - Manual counts of visitors
 - Visitor questionnaires
- Automated sensors
 - Mechanical or infrared traffic or pedestrian counters
 - Acoustic recorders
 - Game cameras
 - Wi-Fi or Bluetooth sensors
 - Personal GPS units
- Visitor-provided information
 - Comment cards
 - Recreation permit and registration data
 - Community-science data

Emerging data sources and technologies

Novel approaches developed over the last two decades offer the opportunity to harness digital content and computing capacity to describe recreation-use patterns in ways previously impossible. These approaches generally involve using anonymized digital data generated by visitors to recreation sites to describe recreation-use patterns at those sites. For example, the number of posts to a social media platform made from within the boundaries of a park, online reviews posted about a popular trail, or the bike tracks shared in an online community have all been used to describe recreation-use patterns on public lands. Applying these efforts typically requires public-university or public-private partnerships to handle the vast amount of data involved and the computing requirements.

Research studies and test applications have had promising results for the reliability of these approaches. A positive aspect of these new approaches is that they work even in places without continuous wireless connectivity. For instance, mobile device locations are often time-stored and uploaded once the device reestablishes a connection. However, additional testing is needed to better understand where these approaches work best and how to correct for their inherent biases. These novel approaches are described in greater detail in recent Federal reports,³ and the best practices identified in those reports will inform the protocols for the pilot projects under EXPLORE Act Section 133. Some key considerations when using these approaches are the representativeness of the data, protecting visitor privacy, cost, evolving technology, changing popularity of social platforms and online communities, and the need for on-site data to verify or adjust digital counts.

The pilot projects may employ a variety of emerging data sources and technologies, such as:

³ Hanson, D. et al. 2025, Monitoring recreation on federally managed lands and waters—Visitation estimation: U.S. Geological Survey Scientific Investigations Report 2025–5022, 46 p., <https://doi.org/10.3133/sir20255022>; Tsai, W.-L., N.H. Merrill, A.C. Neale, M. Grupper. 2023. Using cellular device location data to estimate visitation to public lands—Comparing device location data to U.S. National Park Service’s visitor use statistics: PLoS ONE, v. 18, no. 11, article e0289922, 19 p., accessed September 2024 at <https://doi.org/10.1371/journal.pone.0289922>; Wilkins, E.J., C.S.L. Crowley, E.M. White, S.A. Wood, R. Schuster. 2024. Novel data in recreation monitoring—Summary proceedings from interagency workshops in 2019 and 2023: U.S. Geological Survey Scientific Investigations Report 2024-5013, 24 p., accessed August 2024 at <https://doi.org/10.3133/sir20245013>.

- Social media
 - Photo-sharing applications
 - Location-sharing applications
 - Path-sharing applications
 - Review-sharing platforms
- Mobile device location
 - Anonymized location-based services data from smart-device applications
- Remotely sensed data
 - Aerial photographs or satellite imagery
 - Anonymized connected-vehicle location
 - Marine-vessel tracking

The pilot projects listed in Table 1 (DOI), Table 2 (NOAA), Table 3 (USACE), and Table 4 (Forest Service) involve data from mobile devices, automated on-site counters, manual counts, visitor-provided information, and social media platforms.

Table 1. Proposed pilot projects to improve recreation-use modeling: Department of the Interior (NPS, USFWS, and BLM)⁴

State(s)	Agency	Study locations/ focus	Data used	Description
NC, VA	DOI/NPS	Blue Ridge Parkway Visitor Use Counting Study	• Mobile device location • Automated on-site counters	Blue Ridge Parkway (BLRI) is a 469-mile roadway that connects Great Smoky Mountains National Park with Shenandoah National Park. Estimating visitor use across this NPS unit is extremely challenging due to its length and numerous access points via public and private roads and communities. This study used commercially available mobility data (from cell phone applications) to review and update the park's counting methodology and provide estimates of recreation use. This <u>BLRI Visitor Counting Study</u> was completed in 2023 and is the basis for the <u>park's current counting procedures</u> .
VA	DOI/NPS	Richmond NBP and Maggie L. Walker NHS Visitor Movement Study	• Mobile device location • Automated on-site counters	The Richmond National Battlefield (RICH) and Maggie L. Walker National Historic Site (MAWA) are located in central Virginia approximately 100 miles south of Washington, D.C. The two National Park Service units are managed jointly and encompass a large non-contiguous area including sites in the City of Richmond, as well as Henrico, Hanover, and Chesterfield Counties. In the last ten years, the park has experienced significant changes including the shift to a smaller visitor contact footprint at Tredegar Iron Works, the closing of the Fort Harrison Visitor Center, and reductions in staff that have necessitated seasonal closures of other park sites. In response to these changes, this study provides empirical data to inform decisions related to Visitor Use Management and Visitor Services at Maggie L. Walker National Historic Site and Richmond National Battlefield Park. Commercially available mobility data (from cell phone applications) was analyzed provide park managers with information to develop 1) operational plans, 2) make decisions about visitor center projects and management, and 3) an understanding of current and potential visitor use in the form of both recreational and informational uses. The <u>RICH and MAWA Visitor Movement Study</u> was completed in 2023.
CT, GA, MA, MD, ME, NC, NH, NJ, NY, PA, TN,	DOI/NPS	Appalachian NST Visitor Use Estimation Study	• Mobile device location • Automated on-site counters	The 2024 Appalachian National Scenic Trail (ANST) Visitor Estimation Study is one of three pilot projects being conducted by the National Park Service under its National Rivers and Trails Program. The goal of these pilot projects is to evaluate the feasibility of using modern technologies, alongside traditional counting methods, to estimate total visitation on long-distance rivers and trails. Spanning over 2,100 miles from Georgia to Maine, the ANST

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VA, VT, WA				attracts visitors who attempt a “thru-hike” journey from start to finish as well as visitors who come for shorter hikes and exercise. Unlike many national park sites, the ANST has not estimated overall visitor use statistics due to the complexity of maintaining and updating counts along the entire trail. After a thorough literature review of potential data sources, commercially available mobility data (from cell phone applications) was selected for this project to identify and understand individual trip patterns. This ANST Visitor Use Estimation Study was completed in 2024 and estimates of use across the length of the ANST were compiled from these data and a framework to estimate use across the ANST based on-the-ground counts. Further refinement and testing of methods are needed, both in the field and post-implementation, but this study demonstrated that a viable path forward is possible. Striking a balance between the operational feasibility of capturing visitation estimates and the scientific accuracy of those estimates will be critical as the initiative progresses.
NE	DOI/NPS	Niobrara NSR Visitor Use Estimation Study	• Mobile device location • Automated on-site counters	The Niobrara National Scenic River (NIOB) Visitor Estimation Pilot is one of three pilot projects being conducted by the National Park Service under its National Rivers and Trails Program. The goal of these pilot projects is to evaluate the feasibility of using new technologies, alongside traditional counting methods, to estimate total visitation on long-distance rivers and trails. NIOB stretches through Nebraska’s scenic sandhills and is a popular destination for visitors seeking to experience its unique landscapes, wildlife, and recreational opportunities. NIOB reports visitor use numbers, but the park’s counting procedures need updating. In general, rivers are challenging to measure visitor use and rivers like the Niobrara National Scenic River face unique challenges with traditional counting methods (such as vehicle counters, manual counts, and trail counters), which are often impractical for dynamic river environments. Following a thorough literature review of potential data sources, commercially available mobility data (from cell phone applications) was selected for this project to identify and understand individual trip patterns. This NIOB Visitor Use Estimation Study was completed in 2024 and a model to estimate visitor use for NIOB was created from these analyses. The study identified significant limitations of on-the-ground and highlighted the need for data validation
UT	DOI/NPS	Estimate Visitor Use Movements in Bryce Canyon NP	• Mobile device location • Automated on-site counters • Manual counting	Bryce Canyon National Park (BRCA) protects the largest concentration of Hoodoos (irregular columns of rock) on earth. Over 2 million visitors come to Bryce Canyon NP each year to view and experience this landscape. Visitor use is very dense in the park due to its limited size of 36,000 acres. BRCA managers need to know how visitors disperse across the park throughout a day in order to inform visitor use management strategies such as infrastructural improvement, field staffing, or potential managed access. In this Estimation of Visitor Use Movements in BRCA project, researchers from Pennsylvania State University will use commercially available mobile data technologies to characterize and estimate visitor travel patterns across BRCA. Mobility data will be calibrated to field-collected data (e.g. automated vehicle counters, staff observations) to estimate error and ensure accuracy of the mobility data. Results for visitation metrics (e.g. entry and exit rates, attraction site and parking area utilization, and length of stay) will be summarized. Statistical relationships between park entrance counts and use at attractions will be explored to determine variables that can explain park use levels.
WV	DOI/NPS	New River Gorge NP Visitor Use Estimation Study	• Mobile device location • Automated on-site counters	New River Gorge National Park and Preserve (NERI) encompasses over 70,000 acres along the New River in West Virginia and is popular for a wide variety of recreation uses including hiking, rafting, and biking. In 2020, New River Gorge National River was

State(s)	Agency	Study locations/ focus	Data used	Description
				redesignated as New River Gorge National Park and Preserve. Visitation at NERI increased from 1 million in 2020 to 1.5 million in 2023. However, the park's size, complexity, and porous boundaries make it particularly challenging to estimate visitation. The NERI Visitor Use Estimation study analyzed commercially available mobility data to 1) to better understand the users that visit New River Gorge National Park and Preserve across a full year, and 2) to develop an improved model for estimating total visitation. An updated model to estimate visitor use at NERI was developed along with trip characterizations for climbing and hunting areas.
WI	DOI/NPS	Apostle Islands Visitor Count Study	• Mobile device location • Automated on-site counters	Apostle Islands National Seashore (APIS) in Wisconsin covers approximately 69,372 acres. This includes about 35,000 acres of land spread across 21 islands and a 12-mile stretch of mainland shoreline along Lake Superior. The remaining acreage accounts for the surrounding water area of Lake Superior. The park is renowned for its sea caves, lighthouses, historic sites, and natural beauty, offering opportunities for kayaking, sailing, hiking, and camping. This project will include a visitor count study to update count protocols at APIS using mobility data acquired from cell phone applications. These spatial and temporal data will be analyzed to characterize visitor use throughout the park. On-the-ground counts (e.g., vehicle counters) will be used to calibrate and correct the mobility data. This research will provide empirical data to inform decisions related to Visitor Use Management and Visitor Services at APIS, specifically in the Meyers Beach and Little Sand Bay areas of the park to determine how visitors move at/through these locations and along the trail that runs north of Meyers Beach.
DC	DOI/NPS	National Mall and Memorial Parks	• Mobile device location • Automated on-site counters • Manual counting	The National Mall and Memorial Parks (NAMA) encompass more than 1,000 acres of parkland containing many of the United States' more significant natural and cultural resources. Counting visitors is challenging given the area's many access points and urban location. This project will evaluate NAMA's counting procedures using commercially available mobility (i.e. cellphone) data, review current counting equipment, recommend new counters where necessary, and create an online dashboard for staff to view use levels across the park. This study will provide further confidence in the use of mobility data as a method to evaluate and optimize park counting systems and the online dashboard will further increase the utility of these data. NAMA and its friends group are submitting a National Park Foundation (NPF) Innovation Grant Proposal to fund this project.
(Multiple)	DOI/USFWS	Leveraging Digital Mobility Data to Estimate Visitation in National Wildlife Refuges	• Mobile device location • Social media • Automated on-site counters	Accurately, efficiently, and consistently estimating the total number of visitors to National Wildlife Refuges is challenging for Fish and Wildlife Service managers due to the remote and porous nature of many refuges, staffing levels for visitor services, and the variety of visitor activities. This study tested the use of multiple forms of emerging data to estimate recreation use at 13 refuges with on-the-ground counts of visitation. Data from mobile device location providers, social media platforms, and a community science platform were incorporated. Statistical models that used emerging data sources, on-site counts, and information about refuges showed that emerging data were useful in models to estimate recreation use at refuges but not without limitations. For instance, the mobile device location data products were inconsistent with each other and were potentially not reliable from year to year. The study highlighted the importance of using on-site data with emerging data and the benefit of using more than one type of emerging data. This Leveraging Digital Mobility Data to Estimate Visitation in National Wildlife Refuges study was published in 2025.
(Nation wide)	DOI/BLM	Leveraging Digital Mobility Data to	• Social media	On-site methods for collecting visitation data can be expensive and time-consuming, particularly in remote places like many of the

State(s)	Agency	Study locations/ focus	Data used	Description
		Estimate Visitation at Bureau of Land Management Sites	• Mobile device location • Automated on-site counters • Visitor-provided information	areas managed by the Bureau of Land Management (BLM). BLM, together with the U.S. Geological Survey (USGS) and the University of Washington, evaluated the use and accuracy of digital mobility data (including mobile device data) to help estimate visitation at 70 BLM sites, some of which are remote and have dispersed use, across 10 states. The study highlighted that mobile device data on its own was not an accurate representation of visitation to these sites, but that it could be useful in a larger statistical model to help estimate visitation at sites with no data. This study, <i>Leveraging Digital Mobility Data to Estimate Visitation at Bureau of Land Management Sites</i>, will be published in 2026. BLM continues to partner with USGS and University of Washington to improve methods for using mobile device data to estimate visitation at remote sites with dispersed use.

Table 2. Proposed pilot projects to improve recreation-use modeling: NOAA Office of National Marine Sanctuaries

State(s)	Agency	Study locations/ focus	Data used	Description
MD	NOAA	Mallows Bay NMS	• Mobile device location	Utilize human mobility data to estimate recreational use. This study will rely on secondary data to collect a count of visitors to the sanctuary.
MI	NOAA	Harrisville State Park Access Point to Thunder Bay NMS	• On-site data • Mobile device location	Estimate recreational use on and near the sanctuary. This study will utilize partner efforts to collect visitation and use data in and around Thunder Bay NMS. There is also an opportunity to utilize human mobility data to estimate total counts of recreation to understand the accuracy of secondary data sets.
MI	NOAA	Thompson Harbor State Park access point to Thunder Bay NMS	• On-site data • Mobile device location	Estimate recreational use on and near the sanctuary. This study will utilize partner efforts to collect visitation and use data in and around Thunder Bay NMS. There is also an opportunity to utilize human mobility data to estimate total counts of recreation to understand the accuracy of secondary data sets. This is believed to be a lower use site.
MI	NOAA	40 Mile Point access point to Thunder Bay NMS	• On-site data • Mobile device location	Estimate recreational use on and near the sanctuary. This study will utilize partner efforts to collect visitation and use data in and around Thunder Bay NMS. There is also an opportunity to utilize human mobility data to estimate total counts of recreation to understand the accuracy of secondary data sets.
WI	NOAA	Amsterdam Dunes access to Wisconsin Shipwreck Coast NMS	• On-site data • Mobile device location	Estimate recreational use on and near the sanctuary. This study will utilize partner efforts to collect visitation and use data in and around Wisconsin Shipwreck Coast NMS. There is also an opportunity to utilize human mobility data to estimate total counts of recreation to understand the accuracy of secondary data sets. This is believed to be a lower use site.
WI	NOAA	Kohler Andrae State Park access to Wisconsin Shipwreck Coast NMS	• On-site data • Mobile device location	Estimate recreational use on and near the sanctuary. This study will utilize partner efforts to collect visitation and use data in and around Wisconsin Shipwreck Coast NMS. There is also an opportunity to utilize human mobility data to estimate total counts of recreation to understand the accuracy of secondary data sets.
NY	NOAA	Sterling Nature Center access to Lake Ontario NMS	• On-site data • Mobile device location	Estimate recreational use on and near the sanctuary. This study will utilize partner efforts to collect visitation and use data in and around Lake Ontario NMS. There is also an opportunity to utilize human mobility data to estimate total counts of recreation to understand the accuracy of secondary data sets.
NY	NOAA	Sodus Point Lighthouse - Lake Ontario NMS	• On-site data • Mobile device location	Estimate recreational use on and near the sanctuary. This study will utilize partner efforts to collect visitation and use data in and around Lake Ontario NMS. There is also an opportunity to utilize human mobility data to estimate total counts of recreation to understand the accuracy of secondary data sets.
CA	NOAA	Manchester Beach - Greater Farallones NMS	• Mobile device location	Utilize human mobility data to estimate recreational use. This study will rely on secondary data to collect a count of visitors to Greater Farallones NMS. This is believed to be a low use site
CA	NOAA	Salmon Creek Beach - Greater Farallones NMS	• Mobile device location	Utilize human mobility data to estimate recreational use. This study will rely on secondary data to collect a count of visitors to Greater Farallones NMS. This is believed to be a low use site.

Table 3. Proposed pilot projects to improve recreation-use modeling: U.S. Army Corps of Engineers

State(s)	Agency	Study locations/ focus	Data used	Description
GA	USACE	Hartwell Lake	• Comment cards	Ongoing, voluntary customer comment surveys that take place annually during the lake's recreation season
MA	USACE	Cape Cod Canal	• Comment cards	Ongoing, voluntary customer comment surveys that take place annually during the lake's recreation season
TN	USACE	J. Percy Priest Lake	• Comment cards	Ongoing, voluntary customer comment surveys that take place annually during the lake's recreation season
PA	USACE	Raystown Lake	• Comment cards	Ongoing, voluntary customer comment surveys that take place annually during the lake's recreation season
WA	USACE	Washington Ship Canal	• Comment cards	Ongoing, voluntary customer comment surveys that take place annually during the lake's recreation season
CA	USACE	Bay Model	• Comment cards	Ongoing, voluntary customer comment surveys that take place annually during the lake's recreation season
MT	USACE	Libby Dam	• Comment cards	Ongoing, voluntary customer comment surveys that take place annually during the lake's recreation season
FL	USACE	Lake Okeechobee	• Comment cards	Ongoing, voluntary customer comment surveys that take place annually during the lake's recreation season
ND	USACE	Garrison Dam and Lake Sakakawea	• Comment cards	Ongoing, voluntary customer comment surveys that take place annually during the lake's recreation season
AR, OK	USACE	McClellan–Kerr Arkansas River Navigation System (MKARNS)/Grainer	• Comment cards	Ongoing, voluntary customer comment surveys that take place annually during the lake's recreation season

Table 4. Proposed pilot projects to improve recreation-use modeling: USDA's Forest Service

State(s)	Agency	Study locations/ focus	Data used	Description
AK	FS	Tongass National Forest, boat and plane dispersed area visitors	• Visitor questionnaires	This study gathers information about recreation use patterns by southeast Alaska residents who use boats or planes to recreate in the dispersed areas of the Tongass National Forest. These visitors are not always intercepted in the standard Forest Service recreation monitoring activities.
CO	FS	Arapaho and Roosevelt National Forests Transportation and Visitor Use Study-Brainard Lake, Guanella Pass, and Mount Blue Sky	• Handheld GPS units • Automated on-site counters • Visitor questionnaires	The collection and evaluation of baseline transportation and visitor use data provided a foundation for defining transportation and visitor use management needs, opportunities, and management constraints. A variety of data types were collected from each study site to understand current conditions and desired future conditions. Data types collected include visitor surveys, global positioning system (GPS) tracks of hiking patterns, trail use counts, traffic counts, parking lot counts, and recreation-related resource impact assessment used to characterize transportation, recreation and resource-related conditions at each site. https://highways.dot.gov/sites/fhwa.dot.gov/files/docs/federal-lands/flpp/transportation-studies/28486/arapaho-and-roosevelt-national-forests-transportation-systems-alternatives-study-final-report.pdf
CA, NH, NY, PA, VT, WA	FS	Okanogan-Wenatchee NF, White Mountain, Green Mountain/Finger Lakes NF, Allegheny NF, Region 5 (Tahoe, Lake Tahoe Basin, and Plumas NFs)	• Game cameras • Crowd-sourced data	These studies improve our knowledge about how to use images and crowd-sourced contributions to better measure motorized and non-motorized recreation use in remote, dispersed, recreation settings. This study is also an opportunity for visitors to dispersed recreation trailheads and low-use recreation sites to participate in a community-science effort to better measure recreation visitation. To participate, recreationists send an SMS text message with the count of traffic they observed at a study recreation site.
(Nation wide)	FS	Multiple national forests across the U.S.	• Mobile device location • Automated on-site counters • Community-science data	This study will yield statistical models that use multiple types of data, including on-site counts and emerging data sources, to estimate number of visits. Recreation use estimates will be constructed for recreation settings attracting dispersed activities and other hard to measure recreation use. This project will build from recent models developed from these types of data for national forests: https://research.fs.usda.gov/treesearch/69988
AZ, CA, CO, ID, MT, NM, OR, WA	FS	High wildfire risk national forests located in the western U.S.	• Social media	This study developed estimates of recreation visits and the associated economic benefits to recreationists for fireheds within national forests identified as initial investment landscapes in the Wildfire Crisis Strategy. These fireheds represent large landscapes of dispersed recreation. https://doi.org/10.2737/RDS-2024-0080
(Nation wide)	FS	Multiple national forests across the U.S.	• Visitor questionnaires	This proposed project would use previously collected on-site visitor survey data to understand the extent and characteristics of visitation to engage in recreation activities not currently reported or difficult to capture in the Forest Service recreation monitoring program standard set of activities. For example, potential activities that could be examined include rock climbing, snowmobiling, rafting, and backcountry skiing. The goal of this project would be to identify opportunities to expand the Forest Service recreation visitor questionnaire or the sample site selection to better account for visitors engaged in activities not currently reported.
ID	FS	Salmon, Idaho, Salmon-Challis NF – Salmon River Wild and Scenic River	• Game cameras • Automated on-site counters	This study focused on river recreation use that is hard to measure and describe through visitor intercept sampling. The information collected in this study was intended to improve understanding of current recreation use patterns in the context of efforts to maintain National Wild and Scenic River values. https://www.fs.usda.gov/rds/archive/catalog/RDS-2025-0043

State(s)	Agency	Study locations/ focus	Data used	Description
MT	FS	Missoula, MT, Lolo NF, Rattlesnake National Recreation Area	• Visitor questionnaires • Handheld GPS units	This study focused on a dispersed recreation area popular with local residents engaging in a wide range of recreation activities. This study provided information useful for understanding recreation congestion, safety, and access. https://www.fs.usda.gov/rds/archive/catalog/RDS-2024-0005
(to be determined)	FS	To be determined	• Mobile device location • Automated on-site counters	This proposed project would develop pilot protocols for measuring recreation use at linear recreation features such as trails or rivers using mobility data and automatic counters. Recreation use patterns at these sites are hard to fully measure because linear features frequently have many entry and exit points and, in some cases, visitors travel only one way which limits the opportunity to include them in recreation monitoring.
CA	FS	Cleveland NF (Cha'chaany Hamuk Trailhead and San Diego River Gorge Trailhead)	• Visitor questionnaires • Automated on-site counters • Mobile device location	This study used information from a visitor survey, trail counter data and cell phone data to complete a capacity use determination and rationing strategy for 2 trails on the forest, given current use levels. https://research.fs.usda.gov/download/treearch/80206.pdf