



# Spatial Analysis Case Studies

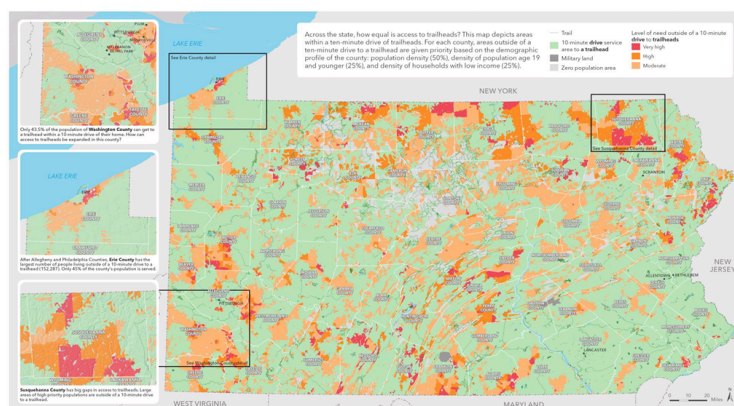
The [Trust for Public Land](#) (TPL) works across the U.S. to ensure access to public lands, whether they are in urban, rural, or backcountry areas. TPL has supported SCORP development in Colorado, Pennsylvania, New Jersey, and Texas. These case studies use both quantitative (spatial analysis) and qualitative (public engagement) methods to identify opportunities and priorities for outdoor recreation access in SCORPs.

## Case Study 1: Service Area Analysis

Service area analysis identifies what share of a state’s population lives within a reasonable distance of a recreational resource, and who does not. In urban areas, TPL uses a 10-minute walk (roughly half a mile) as the threshold for parks and open access lands. Research shows that this proximity turns access to the outdoors into a simple decision, resulting in dramatically higher usage and enjoyment. In rural areas, different measures are required based on the types of recreational resources available and how people typically reach these sites. For instance, for rural areas offering trails or water-based recreation most accessible by driving, an appropriate measure would be a 10-minute drive to trailheads and water access points. For “destination parks”, or larger recreational assets with specific attractions, an appropriate measure may be a 30-minute drive.

The analysis builds a walking or driving service area from each access point using a road network, then overlays population data to count how many residents fall inside or outside it. Areas outside the service area are scored by need using a variety of demographic and health variables.

For Pennsylvania’s 2020-2024 SCORP, TPL ran this analysis separately for parks and open access lands, trailheads, and water access points. The output was a set of county- and municipality-level ranked tables showing where gaps exist and which ones affect the most people. The [analysis](#) found that many Pennsylvania residents did not have easy access to parks or open space.



Level of need outside of a 10-minute drive to trailheads

PENNSYLVANIA STATE COMPREHENSIVE OUTDOOR RECREATION PLAN

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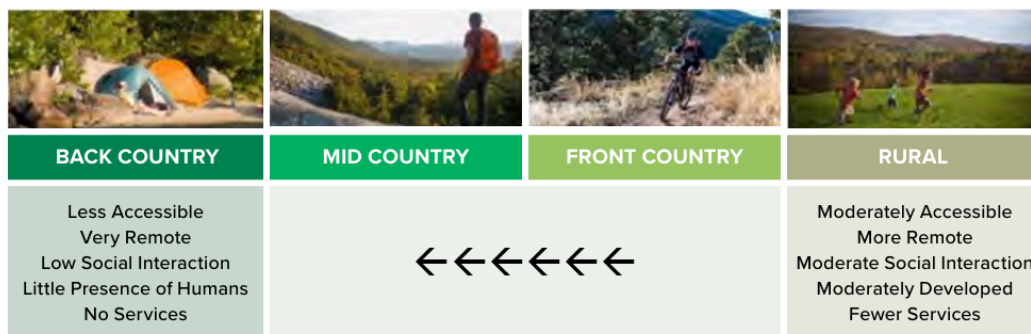
## Case Study 2: Assessing Demographic Information

Disaggregating results by demographic group adds an equity dimension to the access analysis. In Colorado, TPL compared recreational access rates for low-income households, communities of color, and households with limited English proficiency against the broader population in each county. Colorado’s equity mapping added an “Overburdened Community” (OBC) priority score, which classifies communities as low-income, minority, limited English, or some combination of those characteristics. This lets planners prioritize based on cumulative disadvantage rather than any single factor.

## Case Study 3: Recreation Opportunity Spectrum

The Recreation Opportunity Spectrum (ROS) is a classification system developed by the U.S. Forest Service and used since the 1970s to support planning on national forest lands. ROS is used to inventory the types of recreation opportunities available. The ROS classifies land by its distance from roads and level of human activity, from urban settings to backcountry. TPL added land cover data and local road networks to produce county-level statistics on the types of recreational land available.

For New Jersey’s 2023-2027 SCORP, TPL built the ROS from scratch using state-specific road and land use data, including the National Land Cover Database and USDA Cropland Data Layer. Lands were classified into five tiers based on proximity to highways, major roads, and local roads. TPL also modified the ROS classifications from the original USFS classifications to more appropriately represent New Jersey land uses; modified classifications included Suburban, Rural, Front Country, Mid Country, and Back Country. The result gave New Jersey planners a picture of the recreational spectrum of recreation opportunities across the state, broken down by county and by the share of each ROS class within protected versus unprotected lands.

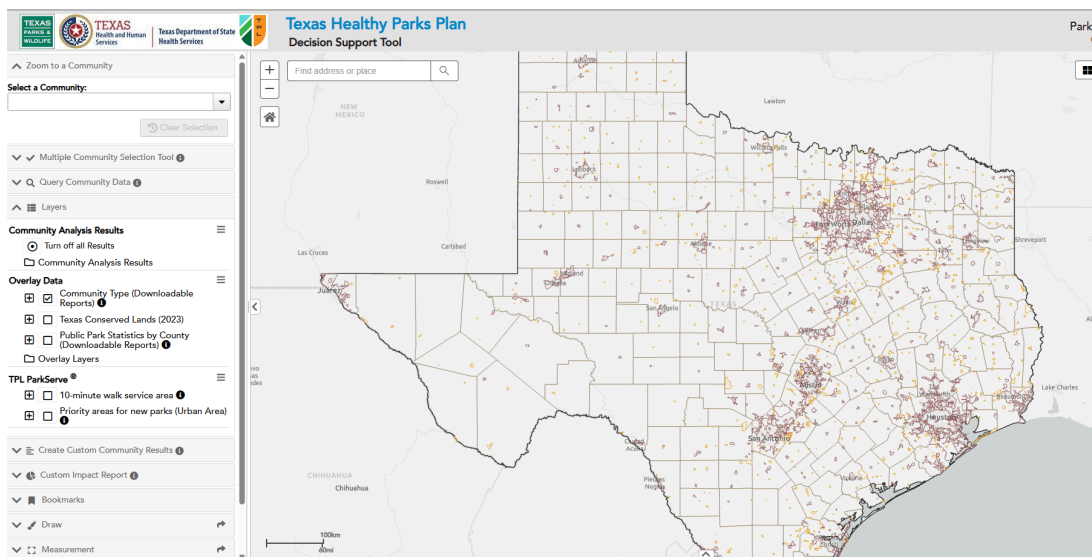


Another approach looks not at where resources are lacking but at where small additions could open up significant new access. In Pennsylvania, TPL identified locations where short trail connections of half a mile or less between existing public lands could link adjacent communities to the Appalachian Trail (AT) without requiring new trailheads. Half-mile and one-mile buffers around existing open access lands showed where the AT was close enough to reach with minimal new infrastructure.

This kind of analysis is well-suited to states with extensive existing land holdings, where the bigger opportunity is often connecting what already exists rather than acquiring something new.

## Case Study 4: Linking Access to Outcomes

TPL partnered with the Texas Parks and Wildlife Department and the Texas Department of State Health Services to build a community-level analysis that connected park access directly to public health outcomes. The project combined TPL's statewide recreation inventory with [CDC PLACES](#) health data to assess every community in Texas across four categories: rates of chronic health conditions, social vulnerability, access to parks, and exposure to environmental hazards. The result was a [Decision Support Tool](#) that lets planners and local governments query communities by need, generate reports showing how a given community scored in each category, and model where a new park investment would do the most good.



One aspect of the analysis that TPL handled carefully was how it addressed the difference between urban and rural communities. In urban areas, the analysis centered on walkable access to neighborhood parks, drawing on TPL's ParkServe platform. In rural areas, where the everyday pressures of a built environment are less acute, proximity to Destination Parks—state parks, national monuments, state forests—was weighted more heavily, measured at 30-minute (day trip) and 90-minute (overnight trip) drive times. This distinction recognized that what constitutes meaningful park access looks different depending on where someone lives. The analysis was published as part of the 2025-2030 Texas Outdoor Recreation Plan (TORP) and is referenced as a tool for directing Land and Water Conservation Fund grants toward communities with the greatest assessed need. It represents a good working example of a state using spatial and health data in tandem—not just to document where parks are lacking, but to make a direct, evidence-based case for where investment will have the most impact on community health.