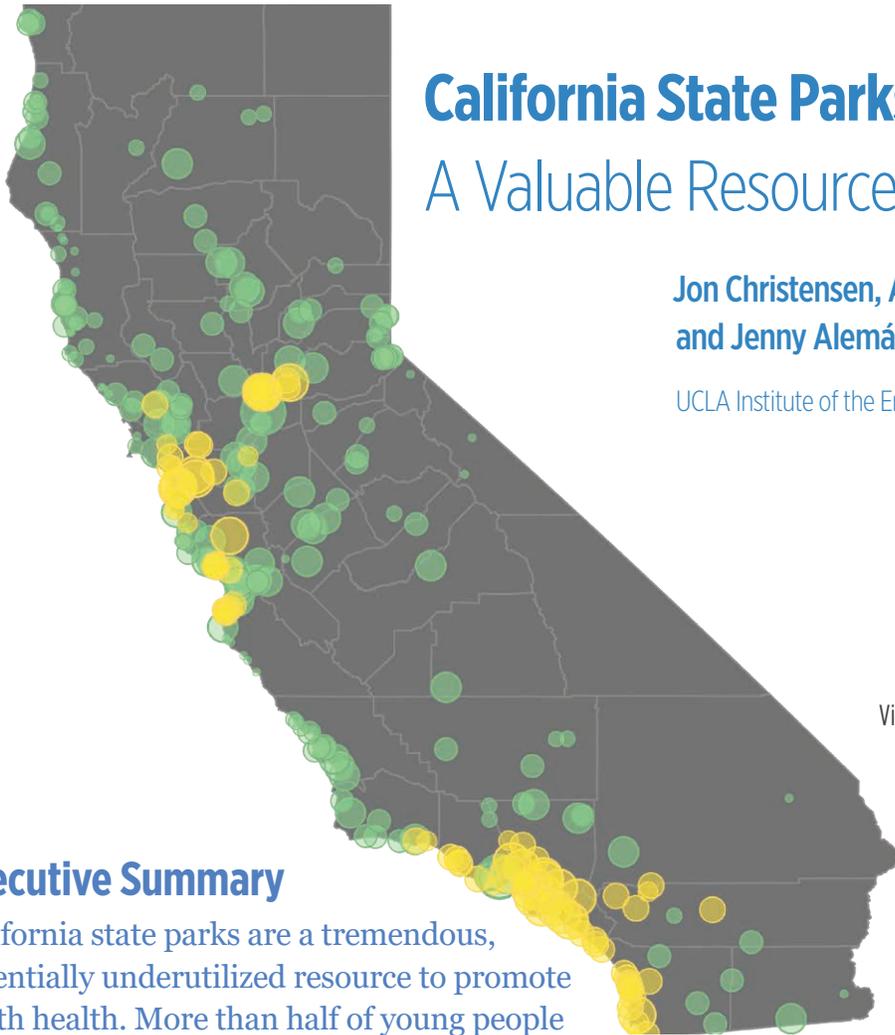


California State Parks: A Valuable Resource for Youth Health

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Number of Youth in
Visitorsheds of California State Parks



Executive Summary

California state parks are a tremendous, potentially underutilized resource to promote youth health. More than half of young people under 18 in California live within the “visitorshed” of one or more of our 282 state park units, and that percentage is even higher for disadvantaged and severely disadvantaged households. A visitorshed, like a watershed, is the natural collection area for visitors to a park. It is defined by the distance that people regularly travel for recreational and social visits. A large and growing body of research shows that parks can be a cost-effective, preventative prescription for the physical and mental health of young people and that access to the outdoors is a public health equity issue.

In this report:

› We review an extensive body of health research documenting the benefits for youth health and well-being of time spent outdoors. Research shows that these effects can be stronger for demographic groups less likely to use parks in the first place, so children with the least access to park space are also those who stand to benefit from it the most. And policies and funding matter. Programs to encourage young people to make park use part of their

lives are cost-effective investments in public health equity. We also review existing effective programs for engaging youth in parks and identify ways that California state parks can provide pathways for youth to spend time outdoors.

- › We analyze the demographic characteristics of residents in state park visitorsheds with a focus on youth, and especially disadvantaged youth who need and deserve equitable access to the benefits of state parks. We also created an interactive map of the visitorsheds of every state park unit at ioes.ucla.edu/youthoutdoors to help people who organize, conduct, and promote programs in state parks better understand and engage potential family and youth visitors.
- › We report on results of a survey of 141 park professionals, 24% from California State Parks or an organization that runs a state park, 37% from an official cooperating association dedicated to enhancing educational and interpretive programs in state parks, 21% from a nonprofit organization that conducts programs in state parks as part of its wider mission, and 3% from concessionaires, with 16% indicating their affiliation as “other.” We share their views of the relationship between programs for youth in state parks and youth health, barriers to youth engagement, and effective programs for bringing youth into state parks.

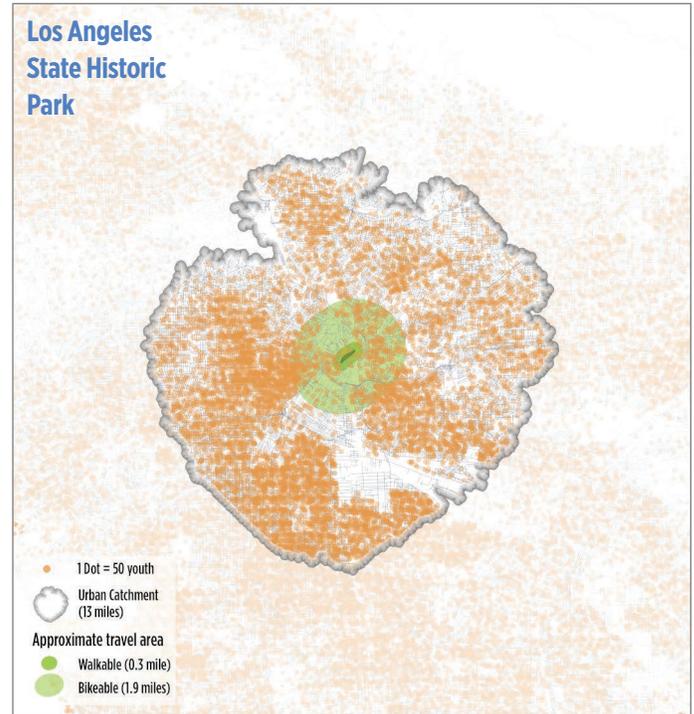
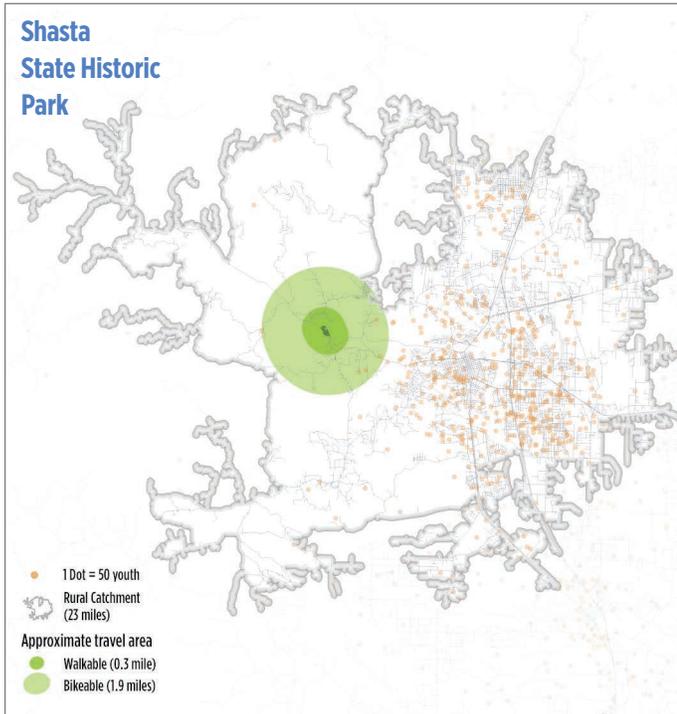
The executive summary of this report with our topline findings and recommendations below also serves as an index to the rest of the detailed report that follows.



Spending time with other people in the outdoors provides social benefits that can be just as important to the health and well-being of youth as active recreation and passive enjoyment of nature. Photo by Eileen Roche courtesy of GirlVentures.

Our topline findings and recommendations are:

- **Finding:** There is a large potential user base of California youth who could use state parks and become the future constituency for supporting state parks. More than half of Californians, including youth, live within a regular social or recreational trip from a California state park. 98% of the respondents to our survey said that engaging youth in communities surrounding state parks is important.
- **Recommendation:** Anyone who organizes, conducts, or promotes programs at state parks should know their audience, especially potential visitors who live within regular walking, biking, and driving distance. Our interactive map provides insight into the demographic and health characteristics of residents in the visitorsheds of every state park unit at ioes.ucla.edu/youthoutdoors. **See page 3.**
- **Finding:** Nearby parks are crucial for the health and well-being of surrounding communities, including young people. Parks within walking distance play an especially important role in public health. But outdoor experiences of all kinds contribute to youth health. And many families with children travel by car to state parks.
- **Recommendation:** State park programs and outreach efforts should diversify program promotion and recruitment tactics to these different audiences, which may also represent potential everyday users versus occasional users, who may then become more frequent users once they become acquainted with parks. School trips and special public and nonprofit transportation services can also introduce parks to youth and families, who may then visit more often on their own. **See our interactive map and pages 6 and 7 of this report.**
- **Finding:** Everyone who conducts programs in California's state parks recognizes that getting outdoors is important for the health and well-being of young people. Despite this widespread agreement, only 21% of organizations include health-related goals among the goals of their youth programs.
- **Recommendation:** Given increasingly widespread recognition of the importance of exposure to nature as a prescription for good health, producers of park programs should explore more active collaborations with health care providers in their communities and experiment with more health and wellness programs. **See pages 4 and 5.**
- **Finding:** 52% of the respondents in our survey identified lack of funding as among the most significant challenges their organizations face in encouraging young people to visit state parks and serving them adequately when they get there. 40% identified lack of staff as a significant challenge.
- **Recommendation:** Funding for diverse programs and program staff is crucial if state parks are to realize their potential as a resource for youth health in California. With all of the competition for their attention that youth enjoy today, it is more true than ever that building a park is no guarantee that they will come. But it is also true that the value of time spent outdoors for youth health and wellness has never been more widely recognized. And that is a tremendous asset for parks and park programs. **See pages 6 and 7.**



These maps show the visitorsheds of a rural state park west of Redding and an urban state park near downtown Los Angeles for driving (the gray outline) and biking and walking (the green circles).

Who lives within the “visitorsheds” of California state parks?

- **57% of Californians, 22 million people.**
- **54% of the state’s youth population, 5 million young people under 18.**
- **53% of impoverished youth, 1 million youth living in poverty.**
- **59% of the state’s disadvantaged households, 3 million households.**
- **60% of the state’s severely disadvantaged households, 2 million households.**

We define a “visitorshed,” or catchment area, for a park by calculating the area within the average distance that residents typically travel for social and recreational purposes in their everyday lives, whether by vehicle, bicycle, or walking, based on the National Household Travel Survey. For urban areas that distance is 13 miles by car, compared to 23 miles in rural areas. The distances for bicycling (around two miles) and walking (around a half mile) are more similar in urban and rural areas. Each of these visitorsheds is important. A 2012 survey on outdoor recreation in California found that 40% of youth said an adult drove them to outdoor activities, 32% walked, and 16% biked.

We classified a state park as urban if the majority of census tracts within 13 miles of the park were classified as urban by the U.S. Census Bureau. People living within those areas are more likely to have urban travel habits. If the majority of census tracts were classified as rural by the Census Bureau, we classified the park as rural.

We found that:

- **17 million Californians live within the visitorsheds of urban state parks**
- **6 million live within the visitorsheds of rural state parks**
- **1.5 million live in areas where urban and rural state park visitorsheds overlap**

Among youth, we found that:

- **3.8 million California youth live within the visitorsheds of urban state parks**
- **1.4 million youth live within the visitorsheds of rural state parks**
- **326,650 youth live in areas where urban and rural state park visitorsheds overlap**

These are the Californians who live close enough for regular recreational or social visits to a California state park.

Urban parks can be different from rural parks in many ways, but they share a very important common opportunity—in many cases, they can serve similar numbers of families and youth and provide an important health benefit to millions of Californians.

While the most densely populated state park visitorsheds are in urban areas, and the least populated visitorsheds are in rural areas, in between there is a great mix of urban and rural visitorsheds. And the demographic characteristics of people in the visitorsheds of many rural state parks in California are just as diverse as those in urban visitorsheds.

We created an interactive map of the visitorsheds of every California state park unit at ioes.ucla.edu/youthoutdoors so that people who conduct programs in state parks or run marketing and outreach for parks programs can better understand their potential users.



California's state parks provide ample opportunities for youth to push themselves to new heights, while taking in nature's healing qualities. Photo by Eileen Roche courtesy of GirlVentures.

What are the health benefits of time spent outdoors for youth?

The takeaway: A large and growing body of research has found that young people today spend less time outdoors and are less likely to engage in physical activity than youth in previous generations. Children are much more likely now to suffer from obesity, attention deficit hyperactivity disorder (ADHD), and other chronic conditions associated with sedentary, indoor lifestyles. And these conditions are more common among disadvantaged youth who have also historically been denied equal access to recreational spaces and opportunities.

New research also consistently demonstrates the benefits—for physical and mental health—of time spent outdoors. Many of these effects are not dependent on physical activity but accrue just from spending time outdoors. The vast majority of the park professionals we surveyed—92%—agreed that getting outdoors is important for young people's health and well-being. And 67% said that health equity and improving access for disadvantaged youth are important.

We conducted a comprehensive review of the literature on parks and health. We also asked our survey respondents their views of parks and health and analyzed health statistics within state park visitorsheds. Here's what we found.

Living near a park is associated with less screen time and increases a person's likelihood of being physically active, which produces a wide range of health benefits.

Simply living near a park has substantial health benefits. A study of California children showed that living within 500 meters of park space was associated with gaining significantly less body mass by age 18. Nearby park space is also associated with lower risk of circulatory and cardiovascular disease, lower overall risk of death, and better general health. People living near green space often describe their health or their children's health as better than those living farther away. One study found that parents in areas with more than 21.5% green space were 14% less likely to rate their children's health as below average. This is in part due to the simple fact that people with access to outdoor space are more likely to exercise. A study of California teenagers showed that 45% of teenagers who lived within a park service area engaged in 60 minutes of physical activity five days a week, compared to 34.7% of those who did not live near a park.

Our own analysis indicates that California state parks provide a number of physical health benefits for nearby residents. The prevalence of cardiovascular disease and acute asthma episodes are both significantly lower in census tracts located within walking distance of urban state parks than in census tracts located outside these areas. We also found some health benefits for people living in biking and driving visitorsheds, but they are less strong and consistent than for walksheds. These findings reinforce that state parks in California can be important places to improve the health of youth and adults alike.

Time spent in parks results in improvements in mood and overall well-being, increased energy, and relaxation.

The evidence is equally strong for parks and green spaces' impact on mental health. Research has shown that spending time in or around green space is associated with better overall measures of mental health, greater overall well-being, and less experience of distress. Survey data of more than 80,000 households, for instance, showed that California teenagers living near green space experienced significantly lower levels of distress, regardless of socioeconomic status. Children living near green space experience fewer emotional and behavioral problems. And time spent in parks has been shown to increase cognitive function on certain measures and may improve children's long-term cognitive development.

Childhood exposure to green space can have profound long-term impacts. The results of a long-term, large-scale study in Denmark show that children living in areas with low levels of green space were up to 55% more likely to experience various kinds of mental illness later in life than those living in greener areas, even controlling for other risk factors. The results in this study showed a dose-response relationship: the more green space available to a person, the less likely they were to experience mental illness.

Time spent in parks can contribute to attention restoration, reduce symptoms of attention-deficit disorders, improve cognitive function, and reduce problem behaviors in young children.

Two especially well-documented impacts of green space on mental health are its effects on attention and stress. Many studies have explored parks' capacity for "attention restoration." After spending time in green spaces people, including children, report feeling restored and focused, and in fact perform better on tests of attention. Long-term exposure may moderate symptoms of attention disorders. Similarly, psychological and physiological measures both show that people living in areas with more green space experience less overall stress, that spending time in a park produces immediate stress relief, and that access to green space can reduce the impact of stressful life events. This capacity has led some researchers to call green space a "stress buffer" for challenging life events.

Parks are places to be active for millions of Californians. But physical activity alone is not enough to account for the benefits that parks bring to people. Even when people do take part in physical activities outdoors, research shows that reductions in stress and a sense of social cohesion that can result from shared activity in green spaces are as important in determining health outcomes as physical activity itself. This research suggests that park managers might want to find ways to encourage young people to spend time in parks, together, even if that time is not always spent actively.

Park Rx: Prescribing park visits for health

A recent movement has begun to conceive of parks and park access programs as a form of preventative health care. From "nature deficit disorder" to "the nature fix," researchers and policymakers argue that parks should be understood not merely as recreational resources but as vital elements of a community's public health infrastructure. "Park prescription" programs are an example of this thinking in action. Information about parks can be integrated into healthcare providers' electronic records systems. Pediatricians can search for parks based on their patients' locations and interests and write prescriptions for park use. Park Rx programs have been shown to increase the number of families who visit parks, the days per month that people spend in parks, and the time they spend physically active. There are currently more than 20 park prescription programs in California. Collaborating with healthcare providers represents a great potential opportunity for state parks, as only 18% of our survey respondents said that they currently partner with providers on programs and even fewer conduct programs focused on health and wellness.

Park use substantially reduces stress and can reduce the negative effects of stressful life events, increasing a person's resilience.

Park use can be especially important for disadvantaged Californians. Members of low-income and minority communities experience more stress and greater health challenges to begin with, and there is some evidence that the benefits provided by park access are actually greater for members of disadvantaged groups. The relationship between green space and behavior, for example, may be stronger in low income children in urban areas. More generally, the more green space people have access to, the less likely they are to experience health inequalities due to income inequality.

Programs to encourage young people to make park use part of their lives are cost-effective investments to advance health equity goals.

Unfortunately, children from low-income families are less likely than their high-income peers to be physically active on a regular basis and are less likely to have recently visited a park. But as our research shows, a majority of underprivileged California youth do live within the visitorshed of a state park. Programs that bring youth into state parks could be especially important for disadvantaged Californians. Research has shown that programming and funding can substantially affect people's use of parks. A national study found that an additional \$10 of statewide spending per capita on parks and recreation was positively correlated with eight more hours per week of vigorous exercise for young women living in states that invest more in parks.



The health benefits of getting outside in state parks can accrue through formal and informal programs, active play and passive enjoyment of nature, and having social experiences outdoors. Photo courtesy of Adventure Risk Challenge.

Recommendations for California state park programs focused on youth health

State parks can play an important role in helping to get youth outdoors. Many state park units, as well as nonprofit organizations that conduct programs in the parks, have youth-oriented programs. But fewer of those programs currently have a focus on health, according to results of a survey that we conducted, even though respondents to our survey overwhelmingly recognized the health benefits of parks for youth. Because health research shows that the benefits of time spent outdoors accrue to youth whether their activities are passive or active, with family, friends, or in organized groups, in educational settings or at play, we focused our research on programs that effectively engage youth in parks across these types of activities. The headings in this section represent the key features of effective programs.

Research shows that innovative programs can bring young people into parks with tremendous benefits for their well-being and for public health. Research also shows that programming is a vital part of a region's park infrastructure. Investments in physical infrastructure alone cannot address the barriers to equitable park access faced by many Californians.

Make state parks welcoming to youth and their families

Though our research shows that a majority of Californians live within the visitorsheds of state parks, proximity is not enough. Important material and social factors often prevent people, especially low-income people and members of minority groups, from making use of parks even if they live nearby. Many studies show that poor transit options, unwalkable neighborhoods, dangerous traffic patterns, lack of culturally relevant information in commonly spoken languages, absence of park amenities or activities, and even the subjective perception that a park is inaccessible, are also important drivers of use and nonuse of parks. The research is also clear that the parks nearest low-income communities are likely to be of lower quality and to have fewer amenities and resources, and thus are often functionally less accessible. In many cases, people do not use or are not even aware of the park nearest to their home. Members of minority groups sometimes also report feeling unwelcome in public parks. As a result of these inequities, adolescents from low-income families are less likely to be physically active on a regular basis than peers from high-income families and are less likely to have recently visited a park, even if they live in a similar park service area. However, people are willing to travel to parks they perceive as welcoming or attractive, physically, culturally, linguistically, and socially.

Improve access and information

Many programs address barriers of access and information. In Los Angeles, Community Nature Connection, a nonprofit, provides free shuttle buses from underserved neighborhoods to

regional parks, where bilingual naturalists offer guided walks and education. And a new Metro Transit to Parks program will connect people to parks through public transportation, enabling youth and families who don't have cars or who live far from parks to enjoy their benefits. Games, maps, and apps, like the augmented reality program Agents of Discovery, can present park information in fun ways for kids. Even well-designed signs have been shown to be surprisingly effective at encouraging new users and increased activity.

Orient and connect youth to nature

This points to the vital role that attitudes and beliefs play in determining park use patterns. A study by researchers at Australia's national science agency, for example, showed that a person's propensity to think about the natural world was a much stronger predictor of park use than proximity. There is also evidence that positive attitudes toward the natural world can increase the health benefits of parks. But comfort with nature does not necessarily come naturally. For young people who have not had the opportunity to spend time outdoors the disconnect can be substantial. A 2012 survey on public opinions and attitudes on outdoor recreation in California showed that most young people value the environment: 67.8% agreed with the statement "taking care of the environment is important to me." However, far fewer—only 42.4%—agreed that they "felt connected to the natural world around me."

Research shows that good, creative programming and nature-based education can address these challenges. Throughout California, park managers and their allies are finding creative new ways to connect youth with nature, from Outdoor Afro's healing hikes for people of all ages to an outdoor science school for middle school students at Mendocino Woodlands National Historic Landmark State Park.

Offer diverse programming

Many studies have shown that offering diverse activities is important for engaging diverse communities in parks. While physical changes to parks only sometimes increase usership, these investments are almost always more effective when combined with new programming. This is especially true for people who are otherwise less likely to use parks: girls and women, members of ethnic minority groups, and young people, especially older adolescents. In surveys and focus groups young people often emphasize diversity of available activities as a key reason to go to a park. Conversely, lack of diverse, culturally and age appropriate activities is itself a barrier to use. Many groups in California, including GirlVentures in Oakland, the bilingual Senderos Naturales program in Sonoma, Promotorx in Los Angeles, and Latino Outdoors statewide, are offering creative, diverse programs to welcome California's diverse population to state parks. A recent study of these kinds of partnerships found that they are effective in engaging people of color in state parks.

Young people enjoy health benefits simply from being in parks, so programs can appeal to a variety of interests. One important predictor of park use is adolescents' perception that a park is used by their friends. Providing a welcoming social space for young people may be one of the simplest, most cost-effective programs a park could sponsor. California state parks host campfires, nature walks, painting classes, movie screenings, story readings,

athletic events, health classes, and more. Further diversifying park programs can lead to more diverse users. Good messaging is also key to getting the word out to potential new parkgoers. As one report put it: "Provide lots of programming and tell people about it." Diverse programs give people lots of reasons, and lots of opportunities, to come to the park.

Create partnerships for health

Healthy Parks, Healthy People is a Bay Area partnership involving more than 50 organizations, including parks, community groups, school districts, and healthcare providers. They work together to deliver health-focused programs that have engaged thousands of diverse in family fitness classes, guided hikes and nature walks, and regular "First Saturdays" programs that provide free introductory experiences for first time or infrequent park visitors. The partnership is now also working with all nine Bay Area counties to create "park prescription" programs with health and social service providers.

Research shows that "multimodal" programs like this—programs involving several different kinds of interventions, often supported by several different partner organizations—are highly effective at improving young people's health. And consistent, long-term investment produces far greater gains than short-term or one-time programs, as shown in an analysis of a long-term, community-based, park health program in Minnesota. These programs are most effective when they include community partners like schools and community centers, which enable programs to reach young people where they are. Some parks are also exploring adoption of the lay health "promotor" model, a vital part of public health programs in many Latino communities, for engaging youth and families in parks.

Our survey indicated that partnering on health programs could be an important area of opportunity for state parks. Only 21% of respondents to our survey said improving young people's mental health and wellness is currently an important goal of their programs. Only 15% said encouraging young people to be more physically active is an important goal. And only 18% said they currently partner with health care providers on programs in state parks.

Open state parks up to the co-creation of new lifelong narratives

Creative programs can also foster a sense of connection with nature and build lifelong outdoor skills. Environmental and health education programs, especially in early childhood, have long-lasting impacts on people's habits and their comfort with the outdoors. Organizations like Outdoor Afro, which trains volunteers, offers information about outdoor activities, and celebrates stories of African American outdoor adventure, are transforming a narrative of outdoor recreation and policy that has historically marginalized people of color. Investment in programs like these can expand state parks' reach and bring their benefits to more Californians.



Youth benefit from time spent outdoors in many different kinds of activities at California state parks. Photo courtesy of Mono Lake Committee.

A Prescription for Youth Health through Programs in California State Parks

California state parks are a tremendous, potentially underutilized resource for youth health. More than half of young people under 18 in California live within the “visitorshed” of one or more of our 282 state park units, and that percentage is even higher for disadvantaged and severely disadvantaged households.

Who lives within the visitorsheds of state parks in California?

- › **57% of Californians, 22 million people**
- › **54% of the state’s youth population, 5 million young people under 18**
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Programs to encourage young people to make park use part of their lives are cost-effective investments in public health equity.

An increasingly large body of research demonstrates the benefits to youth—for physical and mental health—of time spent outdoors. In this report, we provide data on youth and families living within California state park visitorsheds, we survey organizations conducting youth programs in state parks, and we review research on the health benefits of parks for youth and the effectiveness of programs for engaging youth in parks.

This report was written by Jon Christensen, Alessandro Rigolon, Spencer Robins, and Jenny Alemán-Zometa. Christensen, Robins, and Alemán-Zometa are researchers in the Institute of the Environment and Sustainability at UCLA. Rigolon is an assistant professor in the Department of City & Metropolitan Planning at The University of Utah. This research was conducted with support from the California State Parks Foundation.

An interactive map of California state park visitorsheds is available at ioes.ucla.edu/project/youthoutdoors, along with a PDF of this report, and a copy of the text of this report with citations for reference purposes.