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Crowded: Population Pressures in San Francisco Bay Area National Park Service Properties

Caroline R. Ebinger
Scripps College

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Crowded: Population Pressures in San Francisco Bay Area National Park Service Properties

Caroline Ebinger
Fall 2015

Readers:
Bowman Cutter
Char Miller
Sean Flynn

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FOREWORD



FIGURE 1: *Top Left:* Ebinger family, including author Caroline Ebinger and cousin Eric Fellin, at Pinnacles National Park, 2015. *Right:* Caroline Ebinger and sister Katie muse at a Giant Sequoia in Sequoia National Park. *Bottom Left:* Crowding in Yosemite National Park, photograph by Caroline Ebinger.

What a country chooses to save is what a country chooses to say about itself.
—Mollie Beattie, Director of U.S. Fish and Wildlife Service

The wonder in his eyes and excitement in his heart were easily detectible. At 16 years old, my cousin Eric Fellin had never been to a national park before this day. Yosemite quickly became his favorite place in the world. He became aware of immense natural beauty that existed in his very country and has continually talked about his

Yosemite experience in the four years since he visited. Having visited U.S. national parks since a young age myself, I have often taken natural beauty and access to the *Great American Outdoors* for granted. When hiking Yosemite with Eric, my eyes too were opened to a new world: a world in which regular Americans had not been blessed with the opportunity to experience natural wonders in their own backyards.

The Fellin family is a middle-class Pennsylvanian family with four children; most of their free time is swallowed by soccer practices and games, so visiting natural resources is rare. The Fellins' situation represents a contradiction within the National Park System (NPS). The Park Service's primary aim is to preserve American land, yet the secondary aim, ranked almost as highly, is to make the parks accessible to Americans for the purposes of "enjoyment, education, and inspiration". [1] However, in encouraging national park access to those who have yet to experience it also necessarily increases the total number of park visitors. With this, impacts will increase, which potentially causes impairments that counter the primary preservation goal of the NPS.

Our national parks have long been considered the gems of the United States. We have set aside ecologically and culturally important land to be preserved into the future—for the sake of our ecosystems and current and future generations of Americans who deserve to experience the same beautiful, relatively undisturbed landscapes as existed in the past. Since 1916, our National Park System had inspired those in countries across the globe. Still today, President Barack Obama recognizes the importance our parks play in getting youth to appreciate and learn through nature; he allowed all fourth graders and their families free admission to National Park Service properties.

I have experienced the power of national parks; I have seen the harsh reality that many Americans, particularly of certain demographics, do not have the opportunity to feel this power for themselves; I have been crowded out of some of America's most iconic landscapes. My experiences in and knowledge of national parks has allowed me to see a tension within the NPS between preservation and visitation. I chose to further explore this topic through my senior thesis. 2016 is the NPS Centennial. Let's explore how well the Park Service is fulfilling its mission, one hundred years after founding.

INTRODUCTION

The San Francisco Bay Area's Muir Woods National Monument is so popular that it has locals in Marin calling on the Feds to decrease visitation. "Any plan that does not address over-attendance first and foremost is a nonstarter," said Luke Teyssier of Tamalpais Valley to the Marin Independent Journal. [2] Tourist traffic is clogging the roads of local Marin communities and causing increased incidents of traffic accidents. Parking is chaotic; noise pollution is high. In an effort of visitors to explore this natural environment and ecosystem community, they are actually disrupting the nature in and around the monument.

The mission of the National Park Service is to "preserve unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations." [1] Recently, the NPS has also been prioritizing attracting a diverse group of visitors, particularly from marginalized communities. Urban parks and education programs are critical to the success of this goal. However, while increasing diversity of visitors will increase exposure to nature and create an interest in more Americans to conserve and protect our natural areas, more visitors can also mean more problems. Increased visitation can degrade the natural landscape, potentially in a way that would not allow future generations to enjoy the land, an issue that current park managers must manage as is part of the stated NPS mission. More visitors could also mean a decreased visitor experience, thus lessening the benefit of bringing people to the parks. Finally, locals in the Marin community believe that they have the right to an uncongested local road system and their local park, Muir Woods. But this land is public, for the good of all the American people. And the Muir Woods

ecosystem existed well before humans lived in the area. Most of the Muir Woods California Coastal Redwood trees themselves are older than the residents of Marin—some are over 1000 years old. *How is that priority established? Who benefits? Who loses? If the NPS tries to meet every groups' needs, is that a balancing act that is sustainable?* We must look to the NPS mission and Management Goals to determine where the NPS places the most value—and whether the stated values are appropriate. Muir Woods is not alone in NPS visitation woes. While Muir Woods is primarily dealing with congestion and transportation issues, other NPS properties are encountering very different pressures. The newest United States national park, Pinnacles, for example, hopes to attract more visitors, especially from local areas that are primarily inhabited by Hispanic people. Yet, as the park's new national park designation increases visitation, Pinnacles must ensure its infrastructure and management address the probable insurgence of other non-local visitors. Golden Gate National Recreation Area, of which Muir Woods is a part, sees the most visitors annually of any NPS property. As a true urban park, it strives to bring nature access to millions of local California city dwellers. Population pressures vary greatly between NPS properties, but the tension between preservation and access always exists.

This paper hopes to analyze the intersection between diversity and numbers of visitors and landscape preservation in the National Park Service. Current scholarship addresses either diversity in the Park System or carrying capacity and human population pressures. However, both are critical issues facing the National Park Service in the 21st century, and looking at the issues in isolation means missing a key interaction and potentially working to solve one problem that in turn amplifies another. Here, diversity of

park-goers and preservation priorities will be addressed together, each as part of the other.

Pinnacles National Park, Golden Gate National Recreation Area, and Muir Woods National Monument each face human population pressures, yet each park has unique issues that illuminate the larger struggles within in NPS to ensure its mission to *preserve unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations* is still being met 100 years after conception.

National Park Service Background

“There is nothing so American as our national parks. The scenery and the wildlife are native. The fundamental idea behind the parks is native. It is, in brief, that the country belongs to the people, that it is in process of making for the enrichment of the lives of all of us. The parks stand as the outward symbol of the great human principle.”

—President Franklin D. Roosevelt

“National parks are the best idea we ever had. Absolutely American, absolutely democratic, they reflect us at our best rather than our worst.”

—Environmentalist Wallace Stegner, 1983

When the United States conquered the West in the mid-1800s, adventurers headed to the Pacific Coast. There they found unspoiled natural beauty that had been lost in the eastern United States, having been permanently settled by Europeans some 200 years prior. Such beauty inspired ideas of conservation in people including John Muir and, later, photographer Ansel Adams. Muir played a crucial role in the protection of the American West and the founding of the National Park Service. In 1916, almost 100 years ago, with the recommendation of conservationists including John Muir, President Theodore Roosevelt created the National Park Service.

As of 2014, the National Park Service has grown to include 367 properties, including natural and cultural American gems. In 2014, the parks collectively welcomed 292 million visitors. Despite immense growth, the NPS mission remains unchanged:

The National Park Service preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. The Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

For this paper, the key words embedded in this mission statement are *preservation*, *unimpairment*, and *this and future generations*. A seemingly simple mission, there is tension within that makes fulfilling it difficult. Preservation for future generations and enjoyment for this one are difficult to balance. Particularly difficult is the goal to ensure all demographics of Americans become educated through the Park System, yet bringing in more types of people means bringing in more people, means having greater environmental impact. However, if the newcomers are truly educated by the parks, as is a stated goal in the NPS mission, their presence may work to counteract their direct environmental impact on these parks. As such, the NPS Management Practices, most recently updated in 2006, calls for assessment of visitor carrying capacity in all Park Service properties. Carrying capacity, or user capacity, is defined by the NPS as “the types and levels of visitor use that can be accommodated within a particular national park area while sustaining the quality of park resources and visitor experience consistent with the purpose of that national park.” [3] NPS properties generally cannot deny access to individuals, regardless of whether carrying capacity has been exceeded, therefore they must find creative solutions to manage visitation. This paper will focus on the effects of population in the national parks on the ecosystems of those parks and the conservation

movement rather than on visitor satisfaction. This is consistent with NPS priorities. There has been little research on this aspect.

PINNACLES

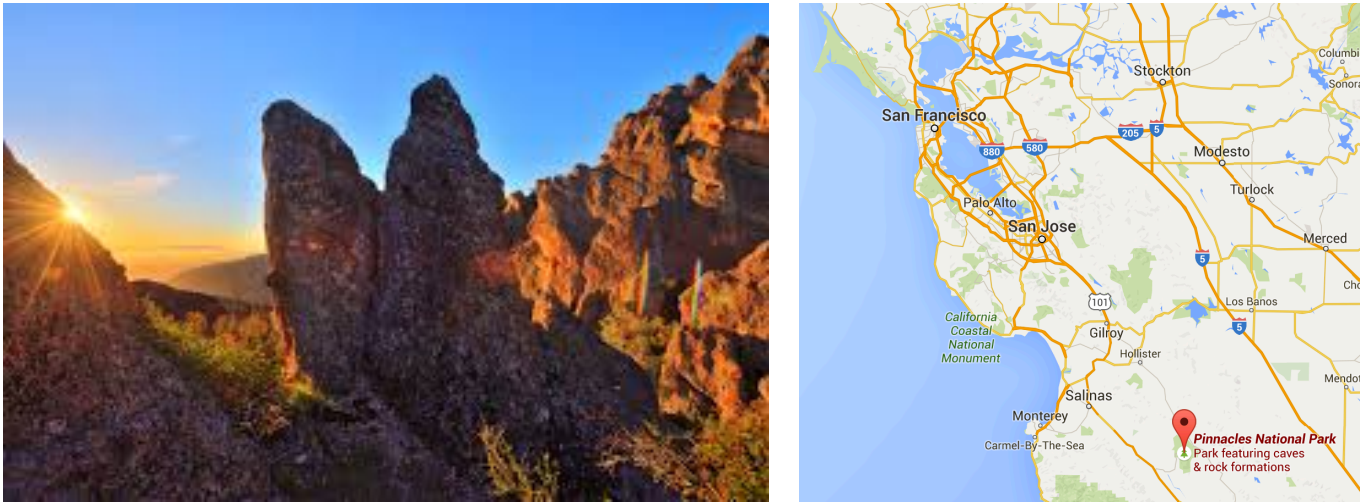


FIGURE 2: *Left:* Photo of Pinnacles National Park, courtesy of Thousand Wonders. *Right:* Location of Pinnacles National Park in relation to the San Francisco Bay Area, courtesy of Google Maps.

Background and Management History

The natural formations, known as the Pinnacles Rocks, with a series of caves underlying them, which are situated upon public lands, within the Pinnacles National Forest, in the State of California, are of scientific interest, and it appears that the public interests would be promoted by reserving these formations and caves as a National Monument, with as much land as may be necessary for the proper protection thereof.

— President Theodore Roosevelt, on the creation of Pinnacles National Monument, 1908

Pinnacles, the 59th and newest national park in the United States, is located in San Benito and Monterey Counties, about 120 miles southeast of San Francisco and 80 miles southeast of San Jose, which lies at the southern end of the San Francisco Bay Area. On January 10, 2013, Pinnacles was re-designated from a national monument to a national park. But this was not Pinnacles' first title change. In 1906, Pinnacles was designated a forest reserve, beginning its history as federally protected land; in 1907, all forest reserves were re-titled national forests, although management did not change. Also in

1906, during Theodore Roosevelt's presidency, was the passage of the Antiquities Act, allowing, among other powers, the President to designate a historically or scientifically interesting land as a national monument. [4] Roosevelt took advantage of this Act, and in 1908 re-designated Pinnacles as a national monument, a designation it retained until 2013.

Although subtle, these designation changes mean different management and different expectations. As a national forest, the United States Forest Service managed Pinnacles. The US Forest Service is an agency of the US Department of Agriculture. The mission of the Forest Service is "to sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations." [5] As a national monument, Pinnacles fell under the jurisdiction of the General Land Office in the US Department of the Interior, until 1916, when the NPS was founded as another unit of the Department of the Interior. As an NPS property, Pinnacles falls under the agency's mission to "reserve unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations." [1] The differences in these missions are subtle but important to management practices. Both missions' stated beneficiaries are *present and future generations*. Yet, the two agencies have different means to achieve this end. The Forest Service, like its founder Gifford Pinchot, falls under the philosophy of *conservation*, while the Park Service, like one of its main proponents, John Muir, falls under the philosophy of *preservation*. Conservation focuses on sustainable *use* of resources, whereas preservation seeks to *maintain* natural resources in their natural state. Key words *sustain* and *productivity* in the Forest Service mission as compared with key words

reserve unimpaired in the Park Service mission show this difference in philosophies. However, Pinnacles was only under National Forest jurisdiction from 1906-1908. In that time, there was little logging. [6] Although classified as a national forest, the land was protected primarily for ecotourism. [6] Pinnacles is not home to many trees. Thus, the re-designation to a national monument, under management that was designed to *preserve* land, was arguably more appropriate. The management changes in the transition from a national monument to a national park, though, were even more subtle.

Becoming a National Park

The proposal to convert Pinnacles from a national monument to a national park was originally introduced in 2009 by Representative Sam Farr (D-Carmel). [7] In defense of re-designation, Farr argued for the importance of and variety within the monument, both critical to the moniker of “national park.” The NPS describes the difference between a national park and a national monument as such: “The title of national park has traditionally been reserved for the most spectacular natural areas with a wide variety of features. ... National monuments are usually smaller areas established primarily to protect historic, scientific, or natural features containing fewer diverse resources or attractions than national parks.” [8] Since its founding as a national monument, Pinnacles has grown in size from just over 2,000 protected acres to about 26,000. [9] Believing Pinnacles met the requirements for a national park designation, Farr’s primary motivation for the re-designation was, contrarily, economic. While other, coastal, portions of Monterey County, of which Carmel is a part, bring in large tourism dollars, non-coastal portions do not. With Pinnacles, Farr saw an opportunity to change this. “Upgrading Pinnacles to a national park makes sense for historic, natural and economic reasons,” said

Farr in 2009. “This area is much more than rock formations. It’s a huge swatch of land with historical significance for the state, it provides an important refuge for the California condor and it has great potential for tourism revenue.” [10]

Despite Farr’s efforts, this proposal failed. However, in 2011, Farr reintroduced the bill. When addressing the House of Representatives on July 31, 2012 to recommend an upgrade in designation for the second time, Farr updated his argument. [11] [12]

To begin and conclude, Farr thanks his Republican co-sponsor Jeff Denham (R-Atwater), emphasizing the bipartisan support for the Act. This is in contrast to his 2009 re-designation attempt, which did not have bipartisan support. Although Pinnacles may have had the natural requirements to become a national park, bipartisan support was needed, practically, for the bill to have had a chance at being signed into law. [6] Additionally, original plans to extend the wilderness area as part of the bill were dropped for Senator Denham to cosponsor. [6] “As the sponsor of this bipartisan legislation, I would also like to express my thanks to my friend, Congressman Denham from California, for his original cosponsorship of H.R. 3641 [known as the Pinnacles National Park Act].” After his opening statement, Senator Farr discussed Pinnacles’ ecological and historical importance and how this contributes to the validity of re-designating Pinnacles. “There are not a lot of examples of tectonic plate movement in our National Park System. ... The first designation was to protect the beautiful rock formations and talus caves, notable for its tunnels. It has since been expanded several times by executive order and by congressional mandate to its present size of over 26,000 acres. It is larger than several existing national parks.” Later, he ensures its broad popularity: “There is no opposition to

the bill,” and makes his final argument: that Pinnacles should be re-designated a national park for economic reasons.

The Pinnacles is uniquely located in coastal California to attract thousands of visitors each year who provide a viable and vital economic engine for San Benito County. Tourism is the primary focus for many of the business owners on the central coast. Increasing the number of tourists would promote a healthy impact for those not only in the retail sector, but also dining, lodging and sightseeing opportunities.

The new national park designation would strengthen the region's economic and tourism potential. There is no national park in that whole region. Research shows that for every one dollar invested by the Federal Government into our national parks, it returns \$4 to the community in tourism dollars.

Farr, finally, acknowledges the benefit of becoming a national park: recognition. “By elevating its stature to a national park, I believe that more visitors will come through our restaurants and businesses and more visitors will stay overnight near the park.”

With the support of members of both parties; [6] of influential senators such as Senators Diane Feinstein and Barbara Boxer; [6] and of environmentalists outside of the government, such as documentary filmmaker Ken Burns, [11] the bill passed. In 2012, the House of Representatives and the Senate passed the bill, and on January 6, 2013, President Obama signed it, officially upgrading Pinnacles to national park status.

As a national park, Pinnacles has technically and managerially only changed in name. The management of a national park and national monument are not different; the money received by a national park is no more than by a national monument; and the NPS is required to value all NPS properties equally, regardless of designation. [13] However, Farr—and a 2/3 majority of Congress—believed that Pinnacles was deserving of higher recognition. Pinnacles’ new designation makes it the closest national park to the San Francisco Bay Area. That is, closer than Yosemite. Farr understands the difference

between the designations in the eyes of the public. “People don’t get in their cars in the summer to see national monuments. They do take the family to visit national parks.” [11]

Ecological and Historical Importance

Pinnacles is known for its rock spires, or pinnacles. Located on the San Andreas fault line as part of the remains of the Neenach Volcano, the Pinnacles region has moved northwest with the fault line since the volcano, 23 million years ago. [14] Today, Pinnacles is home to critical California species, including the California condor. This species faced near extinction, with only 22 remaining in the 1980s, and is still listed as federally endangered. In 2003, California condors were reintroduced in three California locations, including Pinnacles. It is also a stronghold for California species of concern, such as the uber-sensitive Townsend’s big eared bat. Bats inhabit the Pinnacles talus caves, which are open to the public only when the bats have migrated away from Pinnacles. [Unsupported source type (Interview) for source LPL15.] Pinnacles also provides habitat for nearly 400 species of bees, making it home to “the highest known bee diversity per unit area of any place on earth.” [16]

Pinnacles also holds historical significance for the peoples of California. It has been home to the Chalon and Mutsun Tribes, Spanish missionaries, and homesteaders. (Although irrelevant to this topic, it should be noted that the Spanish missionaries destroyed the way of life of the local tribes.) Pinnacles now works with descendants of the tribes to manage tribal resources and better understand Pinnacles’ relation to the tribes that once made it their home. [17]

Visitation

The primary goal of legislators who fought to upgrade Pinnacles from a national monument to a national park was increased tourism revenue to help the economies of local towns, such as Salinas and Hollister, by means of increased park visitation. The designation change of Pinnacles and its goals makes it an appropriate case study when examining visitation in the National Park System. This section will use Pinnacles to create insights into park visitation: *what is in a name?, do national parks draw more young and/or diverse visitors?, what happens to a resource when it suddenly expects and/or receives significantly more visitors?*

Statistics

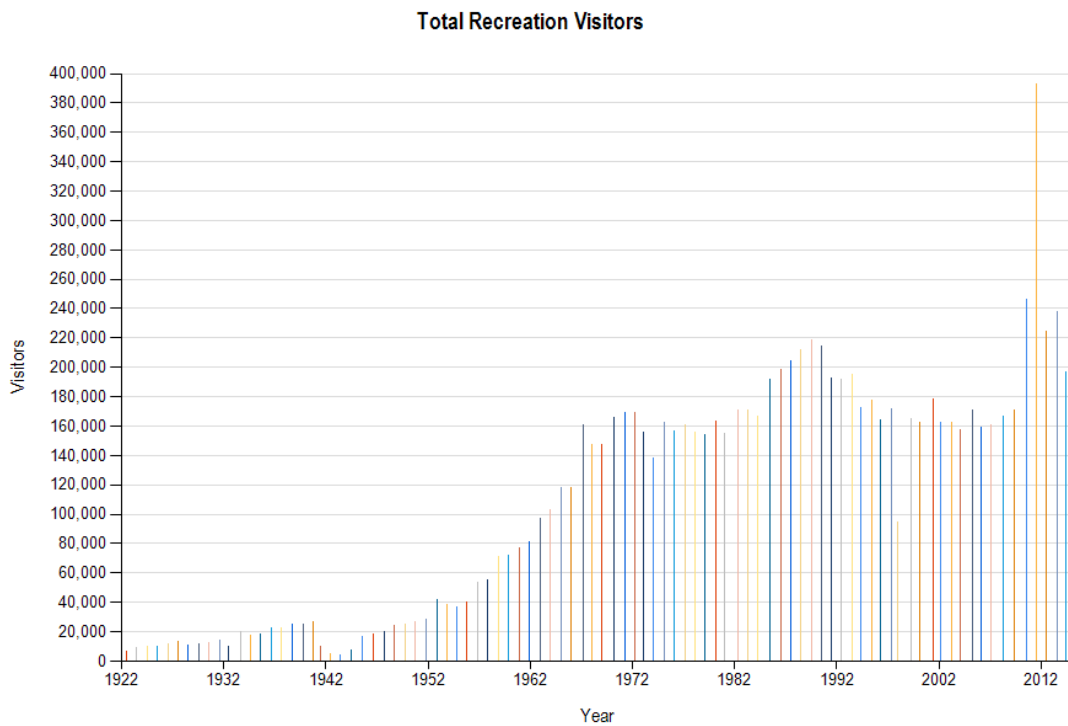


FIGURE 3: Annual visitation at Pinnacles National Park. Source: Integrated Resource Management Application (IRMA), NPS. Note that the shades of the bars mean nothing.

Pinnacles visitation has primarily been increasing over time, peaking in 2011 with 393,219 visitors. [18] The recent spike in visitation began around the time Pinnacles was first seriously considered to be re-designated as a national park. In 2010, the monument received over 200,000 visitors for the first time since 1990. In 2014, visitation dropped somewhat to below 200,000—to about 196,000—but 2015 is on track to have more visitors. In a phone interview, Pinnacles Lead Interpreter PT Lathrop helped explain these variations. He believes that much of the variation throughout time could be due to changing staff. He says that visitor statistics are not always easy to track and that “discrepancies are more common than we’d like.” For example, he believes the spike in visitors around the 1990s could be due to something as simple as a different staff counting visitors, rather than a major change in Pinnacles. Although visitation is seemingly very volatile year to year, Lathrop says this is not a primary concern of the park. He believes that overall increase in visitation is more of a challenge than is the yearly volatility.

Since its national park designation, Lathrop believes “we’re on a very steady climb up in visitation.” A bigger change, though, is the time of year during which visitors come. Lathrop says that before re-designation, visitors primarily visited during weekends and holidays from January-May. Now, visitors are coming every weekend, regardless of season. This is evident by a change in the transportation within the park: now, the shuttle runs every weekend and parking spots run out every weekend. Visitation is particularly high on Saturdays. To mitigate this, Lathrop says Pinnacles works with local entrepreneurs hoping to benefit economically from Pinnacles visitors to encourage them to visit other local highlights, such as Monterey County vineyards, on Saturdays.

However, this is only so effective, as most visitors come for the day from the San Francisco Bay Area. Pinnacles also encourages locals to come at 5—AM or PM, Lathrop jokes—during peak season so as to decrease pressure on the park resources—natural and manmade. Again, this strategy is only so effective, since locals, primarily Hispanic, do not tend to frequent the park.

Given that a main goal of re-designation was to boost the local economy through increased visitation, whether or not locals are happy with the name change is largely dependent upon the effects to the local economy. Lathrop says he has not spoken to anyone who is unhappy with the re-designation, but that locals have so far been disappointed with the less-than-robust economic results it has generated to date. Lathrop believes that visitation will continue to increase and that the local economy will get a boost in the future. He believes, though, that the Pinnacles community should get more strategic with how they monetize the increase in visitors. Lathrop shared an idea of his: that if Pinnacles is advertised as part of an epic national park loop, like the Grand Circle National Park trip, it will see a large increase in visitation. “California is sitting on one of the most underutilized, awesome national park trips,” Lathrop said. He believes a successful national parks loop could include Pinnacles, Yosemite National Park, the California coast, and Sequoia and Kings Canyon National Parks.

Demographics

In June 2013, Pinnacles National Park completed a general management plan (GMP) in which the stated concept was the following:

The primary focus of the approved GMP is to engage a broad range of visitors in the enjoyment, understanding, and stewardship of natural and cultural resources and values of the Gabilan Mountains ecoregion.

Pinnacles will focus on ways to connect diverse audiences and resources, to acknowledge the interrelationship between natural and cultural resources, and to protect, preserve, and restore ecological communities and processes. [19]

In this statement, Pinnacles specifically acknowledges diversity of its audience, yet visitor diversity is extremely low. In Monterey and San Benito Counties, where Pinnacles is located, the Hispanic and Latin@ population is greater than 55%. [20] [21] Yet, only about 8% of total park visitors in 2012 were Hispanic or Latin@. [9] Even in counties in the Bay Area, where a majority of Pinnacles visitors live, the proportion of Hispanic people is significantly greater than 8%. In Santa Clara County, for example, the population is 26.6% Hispanic. [22] In California as a whole, the population is 38.6% Hispanic. [22] Pinnacles has begun to implement strategies to increase diversity within the park, particularly through increasing visitation by locals. The park's two main strategies for increasing the Hispanic and Latin@ population that visits the park are prioritization of bilingual programming [9] and public outreach, such as through attending local county fairs and through organizations such as Pinnacles Gateway Partners. [Unsupported source type (Interview) for source LPL15.] In the Pinnacles 2014 Business Plan, the primary goal of the park is stated as enhancing the visitor experience. It calls to "enhance the visitor experience at Pinnacles to better welcome visitors to the park and create recreational and educational opportunities for diverse user communities." [9] The "recent wins" and "moving forward" sections of this category include several strategies to better engage local Hispanic and Latin@ communities. A "recent win" of Pinnacles was its launch of a Spanish language Pinnacles Junior Ranger Program for the busy season. [9] PT Lathrop believes that the new Pinnacles Gateway Partners organization will be particularly instrumental in engaging the local community. Pinnacles

Gateway Partners is comprised of local chambers of commerce, people who work at Pinnacles, and more generally people who have a stake in the local tourism economy. [Unsupported source type (Interview) for source LPL15.] According to Lathrop, the goal of the organization is to help the park and all of its surrounding stakeholders get on the same page. With local support, Lathrop and Pinnacles hopes to see more locals in the park. Lathrop says, although still small in number, local visitation has increased in the recent past and he believes it will continue to do so.

Ecological Effects of Visitors

The yellow star thistle is one of many invasive (non-native) plants threatening the ecosystems of Pinnacles. Many seeds are accidentally transported into the park on shoes and gear; you can do your part to prevent the spread of these pests by cleaning shoes, socks, and gear before visiting the park.

— From a “Did You Know?” fact on Pinnacles website

While Pinnacles visitation is continuing to increase with national park status and outreach initiatives, increased visitation also brings increased ecological impact. On a micro-ecological level, Pinnacles’ front country is hurting. Visitors tromp over plants and increase trail size. They bring in foreign, invasive species on their shoes and they litter. Additionally, they make the park less pleasant for other visitors for these reasons and more. Pinnacles parking, for example, is now full almost every weekend. This is both a hassle and increases air pollution, which Pinnacles is already predisposed to. Unhappy visitors also destroy a key goal of NPS properties: to foster stewardship and love for the land in America’s citizens. Given that the NPS requires its units to determine a carrying capacity, it seems that Pinnacles’ additional visitors should not be so great in number as to harm the park. However, while Lathrop believes annual carrying capacity for Pinnacles is not being exceeded, he believes a large part of the problem is when the visitors come:

weekends and holidays. Therefore, on these days, the park is pushed past carrying capacity even though on average it is not. Another consideration is the NPS view of *harm*. The NPS acknowledges that visitation will have *impacts* on NPS properties, but it does not allow for these impacts to become *impairments*. Therefore, if these micro-level ecological impacts are poised to remain just that—*impacts*, the NPS does not take issue with them. Pinnacles is also working to decrease these impacts through various means, particularly education and volunteer programs.

Despite micro-level impacts, on a macro-level, Pinnacles is currently doing well. Condors, large predators such as mountain lions and coyotes, and treasured species such as the Townsend's big eared bat, are all thriving. This said, even larger and more keystone species such as grizzly bears, black bears, and wolves, once lived in the area and have all disappeared. While the macro-level ecosystem has remained relatively stable in recent years and seems to continue to remain stable even with current levels of increased visitation, micro-level ecological impacts are becoming more pronounced with more visitors, and macro-level ecological success is not guaranteed in the long run.

GOLDEN GATE NATIONAL RECREATION AREA: MUIR WOODS NATIONAL MONUMENT

Golden Gate: Background

Golden Gate National Recreation Area (GGNRA) was designated by President Nixon in 1972, during a time when the San Francisco Bay Area was experiencing rapid population growth. [23]

Since 1972, the recreation area has added land to become one of the largest urban parks in the world, at 125 mi² and 2.5 times the size of San Francisco. GGNRA spreads, non-contiguously, through three San Francisco Bay Area counties: Marin, San Francisco, and San Mateo. As an urban national recreation area, GGNRA is meant to “combine scarce open spaces with the preservation of significant historic resources and important national areas in a location that can provide outdoor recreation for large numbers of people.” [3] As clarified by Congress in 1970, all NPS properties, regardless of designation, have equal legal standing.

GGNRA is home to 1,287 plants and animal species, including 36 that are threatened or endangered. It is home to the fourth largest number of protected or endangered species in an NPS property. The diversity of species in the park results largely from the diversity of ecosystems; GGNRA contains 19 separate ecosystems. The recreation area also contains within it two additional NPS properties: Muir Woods National Monument and Fort Point National Historic Site.

Diversity of ecosystems and species is only one type of diversity GGNRA is concerned with. The people who visit the park are critical to its purpose. “The purpose of Golden Gate National Recreation Area is to offer national park experience to a large and diverse urban population while preserving and interpreting its outstanding natural,

historic, scenic, and recreational values.” [3] To fulfill this purpose, Golden Gate is pursuing educational and volunteer opportunities and similar strategies as Pinnacles. A particularly unique visitation situation exists within GGNRA in Muir Woods National Monument. Within GGNRA, this chapter will primarily explore Muir Woods.

Muir Woods: Background and Importance

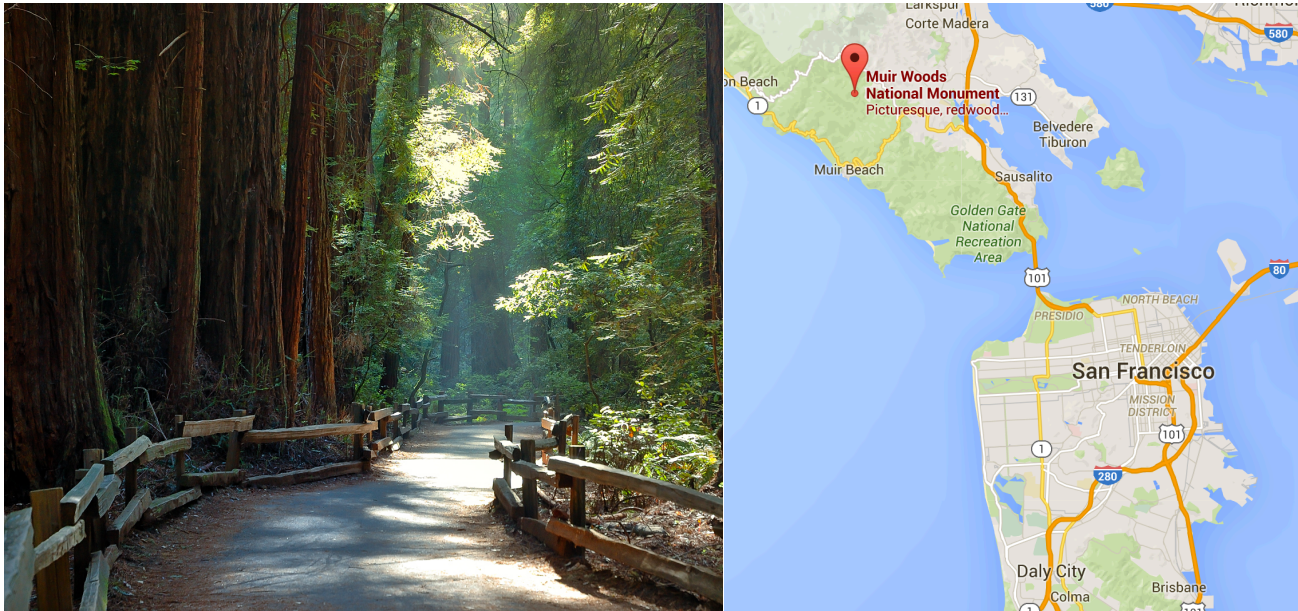


FIGURE 4: *Left:* Photo of Muir Woods National Monument, courtesy of The Santa Clara. *Right:* Location of Muir Woods in relation to San Francisco, courtesy of Google Maps.

Come to the woods, for here is rest.

—John Muir, for whom Muir Woods was named, 1869

Under the management of Golden Gate National Recreation Area is Muir Woods National Monument. Many of the same general principles hold as discussed above in the GGNRA chapter, however Muir Woods is also given individual attention by the NPS and therefore has its own subset of important park practices, including management. The stated purpose of Muir Woods is “to preserve the primeval character and ecological integrity of the old-growth redwood forest for scientific values and inspiration.” [3]

Though only a monument since 1908, and part of GGNRA since the creation of GGNRA in 1972, Muir Woods protects ancient redwood trees, some of which are up to 1000 years old. [24] The Muir Woods redwood forest is one of the only remaining old growth redwood forests in the world. Once, before the 1800s, it was only a small portion of the redwood forest that covered the San Francisco Bay Area and 2 million acres of the California and Oregon coast. While most nearby redwood forests were logged, what is now Muir Woods stood strong due to its difficulty to access. [25] Muir Woods consists of 558 acres (or 0.87 mi²) located along the coast of the Pacific Ocean, just north of San Francisco. [24] The original 295 acres were bought by William and Elizabeth Thacher Kent in 1906 and donated to the Federal Government in 1908 when doing so meant protecting the forest by way of preventing a nearby dam. [25] In 1908, two years after the creation of the Antiquities Act, President Theodore Roosevelt declared Muir Woods a National Monument. Muir Woods was the seventh national monument, the first within close proximity to a major city, and the first formed from formerly private land. [25]

Coastal redwoods, like those found in Muir Woods, are the tallest living things on the planet. No longer abundant, coastal redwoods now primarily exist within preserves such as Muir Woods. Muir Woods is especially unique in that its redwood forest is old growth. To be considered old growth, a forest must have large, live trees; a multi-layered structure; dead trees; and interdependent communities. [26] Among many other species, the Muir Woods redwood forest is home to the endangered Coho salmon, the threatened steelhead trout, and the threatened California red-legged frog, which need Muir Woods' Redwood Creek [27] to remain clean, as well as the threatened northern spotted owl, which primarily lives in west coast old growth forests. [28]

Ecologically, the monument is of great importance, particularly to the threatened and endangered species that call it home. Historically, it is often viewed by the NPS as even more important. Its importance is in protecting a history of the Bay Area that was wiped out by loggers; it is in its place in conservation history as one of the first national monuments; it is in its world-renown shown through the Muir Woods UN memorial service for President Franklin D. Roosevelt. [25]

Visitation

Perhaps the most important aspect of Muir Woods is its position to be able to educate people from across the globe about the importance of conservation and the ecological and historical values of the monument. As a home to Northern California's most iconic species and with such close proximity to San Francisco, visitors to the city frequent the monument. Visitors who, in many cases, are first exposed to NPS properties and the Great Outdoors through Muir Woods. [3] Yet, Muir Woods' popularity is thwarting its own potential to inspire and educate those who visit. A bad parking and transportation system, as well as a mere six miles of trails for over one million annual visitors, contribute to a negative visitor experience that detracts from the treasures of the monument. Muir Woods is crowded.

Statistics and Interpretation

In 2014, Muir Woods had 1.05 million visitors, and 2015 is on track to have even more. For its size, Muir Woods gets more annual visitors than either Golden Gate National Recreation Area, which has the most annual visitors, or Yosemite National Park, known for its crowds. This still holds true for Yosemite when the number of visitors is compared with the non-wilderness designated acres. Using 1 million visitors and 1 square

mile of park, both of which underestimate park crowdedness by small rounding errors, Muir Woods gets 1,562.5 people/acre/year. Golden Gate National Recreation Area gets about 187.5 people/acre/year. Yosemite gets 5.35 people/acre/year or 91 people/acre/year when excluding wilderness.

2014 was the first year that Muir Woods had over 1 million visitors since 1997, when it had over 1.5 million visitors. From 1977 to 1997, Muir Woods had over 1 million annual visitors each year. [29] Muir Woods visitation varies heavily with entrance fees. In 1978, a \$0.50 entrance fee was removed, [30] and there was an 18.77% increase in visitation, from about 1 million visitors to about 1.2 million. This is in contrast to a 4.63% increase in visitation from 1976 to 1977 and a 1.29% increase in visitation from 1978-1979. When, in 1997, a fee was reinstated at \$2, visitation dropped 57.01% from 1997 to 1998. Since then, there have been incremental increases in fees with which the visitation numbers have decreased, although less significantly than from 1997-1998.

Muir Woods sets a daily maximum recommended number of visitors, or a carrying capacity, of 3,500 – 4,000 people. In 2014, the daily average number of visitors was 2,875. However, this average does not represent fluctuations based on seasonal or weekly visitation trends. Many days during peak season have had over 6,000 visitors.

[31]

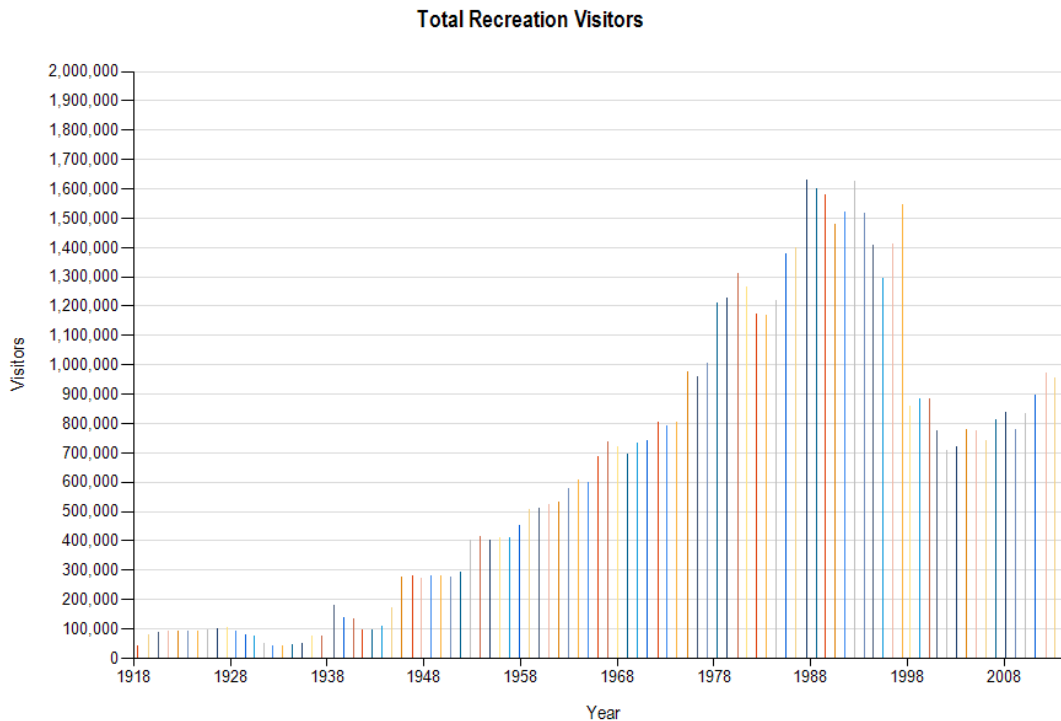


FIGURE 5: Annual visitation at Muir Woods National Monument. Source: Integrated Resource Management Application (IRMA), NPS. Again, note that the shades of the bars mean nothing.

Crowding and Proposed Solutions

In Muir Woods, popular activities include hiking; taking tours, either with rangers or with self-guided programs; and simply admiring the redwoods near to the visitor center. Significant draws of coming to this monument, as with most natural spaces, are natural sounds and natural scenes. With its high peak-season visitation, both of these draws somewhat disappear. Crowds of people drown out the sounds of nature. Crowds of people block views and make chances of animal encounters low. *With a congested visitor experience, what is being harmed?* It is not simply the visitors to the monument, leaving disappointed by their experience, but also the Muir Woods ecosystem and the greater conservation movement.

In 2014, as part of Golden Gate National Recreation Area, Muir Woods management was reevaluated for the first time in 30 years. As part of these plans,

GGNRA and GGNRA properties Muir Woods and Alcatraz have developed preferred action plans, on which the properties will focus for the twenty years that this management plan is good for. Muir Woods is “Focusing on National Treasures,” rather than on “Connecting People with the Parks,” as is the focus of GGNRA as a whole, or on “Preserving and Enjoying Coastal Ecosystems.” [3] The “Focusing on National Treasures” action plan is also the environmentally preferred alternative. This shows the dire condition of Muir Woods; so many people already visit the monument that the NPS needs to focus on the resources rather than the people. As seen with Pinnacles, a national monument until 2013, the goal of increasing visitation is a critical component of many NPS properties in order to educate as many people as possible about American treasures and conservation. In Muir Woods, this is not the priority. In Muir Woods, current visitation is detracting from the ability of the monument to educate about American treasures and conservation. “Focusing on National Treasures” promises the following:

This alternative would present the monument as a contemplative setting where visitors discover the primeval redwood forest and the monument’s place in the early U.S. conservation movement—within minutes of San Francisco.

To fulfill this goal, Muir Woods will utilize each section of the monument to promote different learning opportunities. The different zones are related to interaction, preservation, natural sounds, and low-impact. [3] Even if the volume of visitors remains the same, this action plan aims to disperse visitors enough that each area of the park is fully utilized and visitors feel less crowded. Muir Woods is also more strictly defining its carrying capacities in different monument locations and scenarios. It is using solutions such as this action plan as an attempt to keep from exceeding carrying capacity without explicitly denying people visitation. Through this new plan, Muir Woods hopes to use the

popularity and novelty of redwood trees to draw people to the monument, but educate them about conservation while there.

Visitors would continue to be drawn to the monument to see the trees, but they would leave with a richer understanding of this precious ecosystem and how the saving of these few acres helped spark conservation across the United States.

Muir Woods is hoping to, finally, take advantage of its position as a popular monument near a major metropolitan area to educate the people of the United States and the world.

In addition to the updated management plan, Muir Woods is planning to increase its daily entrance fee from \$7 to \$10 and its annual pass from \$20 to \$40 in 2016. [30] Never before has a Muir Woods daily entrance fee jumped more than \$2 in one period, and never before has the fee been double digits. As discussed in the “statistics and interpretation” section, changes in entrance fees play a significant role in Muir Woods visitation. Although visitation is not a key reason for this fee increase—many NPS properties, including Pinnacles, are increasing fees to fund NPS centennial projects and the new Muir Woods management plan will cost an estimated \$15.6 million—based on history, the fee increase should decrease visitation. [3]

Marketing Muir Woods substitutes, or alternatives that provide a similar/“substitutable” experience as the original, is another strategy used to mitigate monument crowding through suggesting to visitors other local redwood preserves. Both the NPS and local publications market these options. One San Jose Mercury News article from August 2015 suggests six local alternatives to Muir Woods. [32] On an NPS Muir Woods tips page, redwood park alternatives are listed by region and activities that could be paired with each park. [33] Many of these substitutes also offer what Muir Woods cannot: camping, dozens of miles of trails, and alone time. Big Basin State Park, a protected old-growth redwood forest less than two hours from San Francisco and located

nearby marketed day trips from San Francisco, such as Santa Cruz, boasts 80 miles of trails and a locally-famous forest-to-ocean trail. Big Basin also utilizes another method of decreased visitor impact: a video about the impacts of human food on redwood forest ecosystems that is mandatory for park visitors to watch. [34]

Transportation and Proposed Solutions

While Muir Woods has similar human-induced ecological issues to other nature preserves, such as habitat degradation, disturbance to wildlife, and introduction of invasive species, [24] in the San Francisco Bay Area, one of the visitation issues that makes Muir Woods unique is transportation.

The parking at Muir Woods is severely limited, given the volume of visitors it sees, and shuttles are limited and only run during the peak season. Parking along local roads both increases traffic accidents and frustrates locals, who believe it is their right to have a quiet community. Each of seven Muir Woods NPS “ranger’s tips for experiencing the redwood forest at its best” relate to transportation or parking at the monument, and Muir Woods provides a photo essay about its parking. [33] The “Plan Your Visit” section of the NPS Muir Woods website puts the following statement in bold: “Muir Woods is extremely popular and parking is extremely limited. Carpool, arrive early (between 8 a.m. and 9:30 a.m.) or late (one to two hours prior to closing) and consider visiting on a weekday.” [35] Discussion of congestion is not typically held on this page, just as it is not in the cases of Golden Gate National Recreation Area, Yosemite National Park, or Pinnacles National Park.

In the 2014 management plan, Muir Woods addresses the problem of transportation, which locals and visitors have taken issue with for years. [3] Muir Woods

parking was graded, in some places, an F, and in others, a D. [3] Even the shuttle system that intends to decrease the number of visitors who enter the monument by car does not do enough to mitigate parking problems. “It is estimated that even on summer weekends when Muir Woods Shuttle service is available, more than 60% of Muir Woods National Monument visitors arrive by private automobile.” [3] In the new plan, Muir Woods plans to decrease parking, increase shuttle services, and increase ease of hiking and biking into the monument. [3] Muir Woods has even suggested a reservation system for parking. [36] However, locals do not believe this plan goes far enough. The Mount Tam Task Force threatened to sue the NPS for not going far enough in protecting endangered species, such as the Coho salmon, through these changes. [37] Roadside parking along the creek affects health of the creek and therefore health of the Coho salmon population.

CONCLUSIONS

Pinnacles

Currently, the most pressing visitation issue at Pinnacles is a lack of local and ethnically diverse visitors. Pinnacles has begun to implement strategies to improve this situation, but the results of these new strategies are not yet clear. While Lead Interpreter Lathrop does not believe that the upcoming fee increase will affect visitation, it seems clear from evidence in Muir Woods that the fee *will* affect visitation. Pinnacles should take advantage of this fee increase to keep tourists from flooding in, and should use a low annual pass rate (which it is not currently doing), to make visitation for locals more practical and affordable. The primary goal of increasing local visitation should be fostering a stewardship for the park in locals and educating locals through nature. With increased visitation, it is necessary to utilize the visitors as future conservationists. Even if their footprint is doing slight ecological harm directly to the park at the time of visitation, if conservation principles can be instilled within them, the overall impact can be positive.

As the newest national park, Pinnacles also faces immense future threats. Pinnacles should look to Muir Woods both as a cautionary and a hopeful tale. Muir Woods visitation became so out of control that visitors, locals, and ecosystems were severely harmed. Pinnacles has limited parking opportunities because most of the land is wilderness, therefore a similar congestion issue is possible. Yet, Muir Woods is addressing the concerns and hopes to fix the harms it has done to the local ecosystems and communities. Pinnacles should, though, implement strategies to manage visitation before it becomes as significant of an issue as at Muir Woods.

Golden Gate National Recreation Area: Muir Woods

Had this paper examined the population pressures at Muir Woods before the 2014 General Management Plan, the conclusion may have been much bleaker. That the management plan acknowledges and has comprehensive ideas for alleviating overcrowding issues shows that, even in the face of NPS property hardships, adjustments can be made for the benefit of the property and the people. Muir Woods is using techniques including dispersion of visitors in the monument, marketing of alternative preserves, removal of parking and increase of public transportation, increased opportunities for education, and increased fees to manage visitation without directly prohibiting visitation.

While not implemented yet, these changes show promise both for Muir Woods and NPS properties as a whole. But Muir Woods is still not perfect. This new management plan was dozens of years too late, and it still does not go far enough to reduce the impacts on endangered species. NPS properties should work with local communities to create a plan that satisfies as many people as possible. Based on the NPS mission, the NPS should prioritize the ecosystems and visitation for all Americans, yet based on the arguments of locals, it seems that their demands could have been better met while not sacrificing overall monument integrity.

Transportation at Muir Woods will continue to be improved upon. In the future, there must be a reevaluation of Muir Woods transportation to determine how useful its strategies were in mitigating traffic and increasing visitor satisfaction. If they are successful, Muir Woods strategies should be implemented across other NPS properties with similar congestion problems or similar potential congestion problems.

Overall

Through analysis of Pinnacles National Park, Muir Woods National Monument and, to a lesser extent, Golden Gate National Recreation Area, it appears that getting people in National Park Service properties is generally beneficial, if done properly. Using a range of practices, including fees and substitutes, visitation can be successfully managed without compromising the NPS mission. In order for visitors to be helping, rather than harming, the parks, they must be educated in conservation and importance of natural spaces.

Pinnacles National Park is the newest national park and is preparing for increased visitation. It must beware of potential harms and work to prevent such harms before they become realized. Muir Woods National Monument has a severe traffic and overcrowding problem. Its new management plan should help mitigate the issues, but it must encourage alternative modes of transportation and alternative redwood preserves. Golden Gate National Recreation Area must educate visitors and continue to provide a space for urbanites who may not otherwise have access to nature.

Each of these NPS properties sheds light on specific visitation troubles within the Park Service and illuminates the tensions within the mission. However, they also show the value of our National Park System and the importance of *connecting people with the parks and focusing on national (and natural) treasures*.

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