

# THE STATE OF CONSERVATION

WHERE WE'VE BEEN AND WHERE WE'RE GOING

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# INTRODUCTION

Perspectives on conservation have changed over time, from both within and outside the mainstream conservation community. POST's adaptive approach is evolving with important trends, research, and needs. This report explores the progress that POST and its partners have made in protecting open space since our founding in 1977 and examines emerging priorities of the past several years that will shape how POST continues to fulfill our mission.

The acceleration of **climate change** presents concrete challenges, as well as numerous opportunities for POST to have an impact on the environmental health of the region. Similarly, even as development pressures continue to threaten biodiversity of the Peninsula in particular, we are making meaningful progress in securing critical wildlife linkages and habitat to mitigate those challenges. Our work here is far from complete; indeed, there are many opportunities and exigencies that require expanded efforts to protect our region's **exceptional biodiversity**.

Perhaps most significantly, POST is reinvigorating how we approach our work to integrate the national awareness of how humans are inextricably connected to our natural environment. Building resilience in our communities and ecosystems will be critical to our mutual survival. Making sure that our conservation work, and the environmental protections this work provides, **equitably benefits** all members of our communities is central to this approach — and ultimately fulfills our mission to protect open space for the benefit of all.

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# **SETTING THE CONTEXT**

#### THE EVOLUTION OF CONSERVATION THINKING IN RECENT TIME (1960S-2020S)

Perspectives on conservation have changed over time, and POST's adaptive approach is evolving with important trends, research and needs. As we seek to examine the current state of conservation, it is useful to look back at previous approaches. The framework below was first outlined by the late conservation biologist Georgina Mace.<sup>1</sup> While it doesn't capture the full diversity of environmental movements throughout this time period, it does reflect the mainstream perspectives of conservation science and policy makers and how they've evolved.

Prior to the 1960s, the prevailing approach could be described as **Nature for Itself**, keeping wilderness separate from human activity. This resulted in national and state park systems and legally protected areas for habitats and species. Though we continue to use many of the legal structures from this time to protect sensitive areas, the "nature as a museum" view is not realistic in our changing world.

In the 1960s and 70s, we saw the rise of a **Nature Despite People** mentality, which was bolstered by growing scientific evidence and public awareness of the negative impacts human activities have on the environment. Key outcomes from this period were the Environmental Protection Agency, the Endangered Species Act and anti-pollution public awareness campaigns.

The early 2000s were an evolution to a **Nature for People** approach, in which the conservation community sought to more fully analyze how nature can benefit humans. Notably, the field of environmental economics emerged to quantify the value of "ecosystem services" — such as water filtration provided by watersheds, which eliminates the need for communities to build new water treatment facilities — as a significant reason to protect land.

More recently, with the rise of climate change impacts and the social justice reckoning across the United States, we've seen a shift to what we're calling **People and Nature**. This socio-ecological approach recognizes that humans are inextricably connected to our natural



#### FIGURE BASED ON THE WORK OF CONSERVATION BIOLOGIST GEORGINA MACE, 2014.

2010s

#### 2020s and Beyond: What Now?

Today, the fundamental goal of land conservation is to establish and sustain balance between human use of natural resources and the health of the environment, resulting in healthy ecosystems.

Healthy ecosystems are biodiverse, connected to other natural areas and include a mutually beneficial relationship with people who live there. In order for us to restore and maintain them, we need to work together to ensure we are each doing our part to care for our natural environment.



environment. Building resiliency in our communities and ecosystems will be critical to our mutual survival. Making sure that our conservation work, and the environmental protections this work provides, equitably benefits all members of our communities is central to this approach.

These frameworks have a direct impact on the policies that govern how we operate and how we define success.

#### **CURRENT NETWORK OF PROTECTED LANDS**

POST's working area includes most of San Mateo, Santa Clara and Santa Cruz Counties, totaling more than 900,000 acres. To date, POST and its partners have collectively protected more than 300,000 acres in that area, with POST playing a role in conserving roughly 25% of that total — more than 82,000 acres.

The Santa Cruz Mountains run from the north to the southern end of this region, creating watersheds that drain to the San Francisco Bay, the Pacific Ocean and the Pajaro River. The mountains also contain a wide range of habitats including redwood forests, chaparral, woodlands, grasslands, coastal marshes and extensive

> riparian corridors. These habitats support myriad species of plants and animals — in fact, the Bay Area is a biodiversity hotspot.

Given the ecological importance and rapid pace of development in our area, POST currently operates four program areas to drive our work forward quickly and strategically. We focus on protecting and managing redwood forests, enabling wildlife connectivity, maintaining sustainable agriculture and ensuring all members of the public can benefit from nature.

This network of protected lands provides a wide variety of nature's benefits, including water supply protection, food and timber production, habitat for biodiversity, scenic beauty and opportunities for recreation. In many ways, regional conservation efforts on the Peninsula and in the South Bay have been a resounding success.

PROTECTED LAND IN POST'S WORKING AREA. SOURCES: ESRI, POST, CPAD.

#### **EVOLVING POLICY PRIORITIES**

Recently, both the Governor of California 2 and the President of the United States 2 have issued executive orders to protect 30% of lands and coastal waters by 2030. The 30% goal represents an interim step toward protecting 50% of the earth, which has been identified as a key threshold necessary for supporting biodiversity.<sup>2</sup> Recently, the California Natural Resources Agency (CNRA) released a report called *Pathways to 30×30: Accelerating Conservation of California's Nature* 2,<sup>3</sup> which lays out a roadmap for the state's initiative and will be an integral resource for POST and our partners.



#### **Defining Protected**

There is no single definition for what "protected" lands are. The International Union for the Conservation of Nature defines a protected area as "a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature." (California's Pathways to 30x30 ☑ report provides more technical perspective on how the state addresses this question.)

POST often refers to land as either protected or unprotected; in reality, a range of activities might occur on protected land, including:

- Managing land to upkeep its natural state
- Allowing compromises to the quality of existing natural resources for the sake of recreation and other needs
- Using working lands for benefits such as logging, mining or agriculture

These activities are often allowed to continue even when the land is made unavailable for commercial or residential development. Easements can help ensure limitations are placed on how the land is used in perpetuity.

#### **EVOLVING SOCIAL PRIORITIES**

Land conservation and social inequity are connected — with exclusionary policies toward and the forced removal of Black, Indigenous, and People of Color from these lands intertwined with the history of the American landscape. Our own regional legacy includes the violent displacement of Indigenous peoples, as well as the implementation of social and legal structures that deepened racial inequality and the exploitation of natural resources for profit. It is a story of race, power and conflict that is alive today and that we must understand and address head-on to create positive change.

The national Park Rx program<sup>4</sup> and California's 30x30 Conservation Advisory Panel recommendations make it clear that there is a broad mandate from national, state and local governments to make conservation efforts and public parks and green space equitable and inclusive to all.

Notably, California's 30x30 Advisory Panel declared that:

Inclusion is the bedrock of success for 30x30. It will be vital to collaborate across cultures and establish partnerships between communities of interest. This initiative will need to engage private landowners, California Native American tribal organizations (both federally recognized and unrecognized), traditional outdoor recreation stakeholders (e.g., hunters and fisherman), and conservation-related agencies and organizations across sectors (e.g., from NGOs to businesses). Conservation must occur across both physical landscapes and socioeconomic divides.<sup>5</sup>



AMAH MUTSUN TRIBAL BAND CHAIRMAN VALENTIN LOPEZ LEADS A PRAYER AT THE PUBLIC OPENING OF MOUNT UMUNHUM IN 2017.

#### A Network of Land Partners

Federal agencies with significant land holdings in our region include the National Park Service ☑, the Bureau of Land Management ☑ and the U.S. Fish and Wildlife Service ☑. State of California agencies are State Parks ☑, the California Department of Forestry and Fire Protection ☑ and the California Department of Fish and Wildlife ☑.

In each county, the parks departments own and manage land, as does the San Francisco Public Utilities Commission 2. Regionally, the Santa Clara Valley Open Space Authority 2, Valley Water 2 and the Midpeninsula Regional Open Space District 2 (Midpen) are California Special Districts with significant open space holdings.

LAND IS MANAGED BY A VARIETY OF AGENCIES. SOURCES: ESRI, POST, CPAD.





#### **EVOLVING CONSERVATION SCIENCE**

The field of conservation science provides tools and frameworks to understand ecosystem complexity and guide decisions. Over the past two decades, our awareness of the role climate change plays in species range shifts and sea level rise have shaped our actions. With the complexities of climate change impacts, the conservation community's traditional single-species or single-habitat recovery strategies are insufficient. Now, landscape-scale approaches are needed, working to protect wildlife linkages across regions, restore entire watersheds, reduce wildfire fuel and remove nonnative species.

Additionally, social-ecological frameworks have emerged, inviting us to more deeply consider the complex interactions between natural and built environments, and to recognize that people are an inextricable part of the ecosystem.

#### **EVALUATING SUCCESS**

Traditional methods for evaluating the success of a conservation program include calculating the number of acres protected from development, the amount of money spent on acquisition and stewardship, the percent of dollars leveraged from other sources or the number of people who visited conserved properties. Although effective, these methods do not adequately capture how conservation actions perform ecologically or socially.

As a result, organizations are shifting to include measurements of ecosystem health and social engagement and inclusion, using questions like: Are conservation actions improving ecological function, and in what ways? Whom do our investments of time and resources benefit, and in what ways? What can we do to invite more perspectives to the table, as we make room for new partners, environmental advocates and community members?



### CHALLENGES AND OPPORTUNITIES AHEAD

#### **CLIMATE CHANGE – BUILDING RESILIENCE**

The 2021 United Nations Intergovernmental Panel on Climate Change (IPCC) ☐ <sup>6</sup> report describes global climate change effects that are widespread, rapid and intensifying. It finds that even with immediate deep cuts in greenhouse gas emissions, all regions of the world will experience increases in the frequency and intensity of temperature extremes, heavy precipitation and, in regions like California, droughts and reductions in snow cover.

Our local ecosystems already show clear impacts from climate change. A 2021 study 2<sup>7</sup> showed that California's average fall temperature had increased by

"Scientists have known what's causing climate change for decades, and we have a clear roadmap for how to navigate out of this crisis. Governor Newsom and California leaders need to phase out fossil fuels, scale up natural climate solutions, and start seriously investing in community resilience if we want any chance of turning this ship around."

Ellie Cohen, CEO of The Climate Center nearly 2°F (~1°C), while fall precipitation had decreased roughly 30% over the past four decades. These droughts are part of a larger climate change effect: aridification, or the general drying out of the landscape.

The trend toward aridification increases fire risk and creates uncertainty about how habitats will respond over time. For instance, ponds and streams, which are oases for the region's amphibians, breeding grounds for fish and key drinking water sources for all wildlife, are becoming hotter and drying out more rapidly.<sup>8</sup>

Changes in fog patterns are particularly important in the Santa Cruz Mountains, where fog-dependent



ecosystems such as redwood forests, maritime chaparral and streams may become stressed due to projected declines ☑ in the amount of fog and low cloud cover.<sup>9</sup>

Many people, too, will suffer consequences of climate extremes. For example, extreme heat events can cause death among the most vulnerable members of a community, posing a disproportionate threat to those in lower-income areas, often composed largely of people of color, that lack cooling infrastructure (e.g., air conditioning, community pools and shade trees).<sup>10</sup>

The challenge for land conservation organizations is to understand how landscapes will respond to climate stresses and, to the best of our ability, prepare nature to absorb the extremes and continue to function for wildlife and people.

Three climate change topics of particular relevance to POST are wildfire, water supply and species range shifts.

#### Wildfire

Recent Bay Area fires have given us a glimpse into the future: longer dry seasons overlap more often with the fall "Diablo" winds, which blow hot, dry air at high speeds. Historically, the Bay Area typically experienced a rain event or two before Diablo winds occurred. Now, however, summer-baked vegetation is available to burn<sup>11</sup> and, driven by the winds, can do so very quickly, as we saw in the CZU Lightning Complex Fire (CZU fire) of August 2020 that burned through a significant portion of the Santa Cruz Mountains.



PRESCRIBED BURNING (RIGHT) AND OTHER PRACTICES AT SAN VICENTE REDWOODS HELPED MITIGATE THE EFFECTS OF 2020'S HIGH-INTENSITY CZU LIGHTNING COMPLEX FIRE (LEFT).

#### At San Vicente Redwoods,

owned and managed by POST, Sempervirens Fund, Save the Redwoods League and the Land Trust of Santa Cruz County since 2011, managing the landscape for fire risk has been a priority. We've thinned sections of the forest, created shaded fuel breaks. conducted prescribed burns and more. In addition, a partnership with the Amah Mutsun Tribal Band reintroduced cultural burning <sup>I</sup> to the property. While fire resilience practices have been limited due to resources and other constraints, the areas that did receive treatments were among those least impacted by the CZU fire of 2020.



SELECTIVE THINNING IS A TOOL TO BOTH INCREASE THE HEALTH OF LARGER TREES AND MITIGATE WILDFIRE RISK.

For millennia, Native people regularly burned vegetation throughout POST's region until European settlers outlawed the practice. After the Great Fire of 1910 27, suppression of all fire became the standard policy of federal forest management.<sup>12</sup> This practice, combined with historical clearcut logging that led to overly dense tree regrowth, has resulted in dry fuel build-up and forests that are more susceptible to catastrophic wildfires.

Climatologists expect the trends of aridification and longer dry seasons to continue.<sup>13</sup> Our best chance at mitigating these processes is to focus on reducing the high load of fuel currently on the landscape<sup>14</sup> to reduce the risk of catastrophic wildfire. To do this, we employ a variety of tools: **Grazing** is effective at reducing grasses and even some shrubs. **Thinning forests** selectively to remove an overgrowth of trees is an effective way to reduce "ladder fuels" that allow ground fires to climb into the forest canopy, where the fire spreads more easily from tree to tree. One specific thinning technique is creating a **shaded fuel break**, which is a section of the forest — often along a roadway — where the vegetation is thinned out to slow or stop the spread of wildfire through that area.

**Prescribed burning** — intentionally setting managed fires — is very effective at reducing low-lying fuels and has the potential to scale more readily than other methods. But it is logistically and regulatorily more challenging. The traditional ecological knowledge of Native peoples, who used this approach, should be valued as a resource so we can learn how to better live with fire

and use it responsibly to support the ecological function of the forest.

Since wildfire does not stop at property boundaries, POST has a significant stake in how our neighbors, near and far, are managing their land. We're working with numerous partners to gather data to better understand the patterns and impacts of recent fires and where future fires are most likely to be severe. The recent collection of LiDAR data led by Golden Gate National Parks Conservancy and the Santa Cruz Mountains Stewardship Network a, for example, will result in maps that can be used to identify land with dense fuel. Partnering and coordinating with other landowners to build wildfire resilience is essential if we are to effectively safeguard the region.



#### Water Supply, Drought and Sea Level Rise

Climate change is bringing longer dry seasons, prolonged drought and flashier storms. The ramifications of these changes for the region's water supplies and coastal areas are significant.

The Hetch Hetchy reservoir, which supplies much of the water across our region, is fed by the declining Sierra Nevada snowmelt. Given heavy reliance on this source, climate change poses a serious threat to local water supplies. Local communities will likely need to increase the percentage of their supplies that come from local sources. This means we will rely more and more on the precipitation that falls on POST's working area and the surface reservoirs and underground aquifers that capture that precipitation.

During the more intense precipitation events projected by climate models, an abundance of impervious (i.e., non-absorbent) surfaces — building roofs, parking lots and roads — will collect water and increase the speed with which it drains away from aquifers and into the ocean. If watersheds and groundwater recharge zones are unable to absorb the intense precipitation, the risk of flooding also increases.

Compounding the water issue is climate-driven sea level rise, which will cause saltwater to intrude on coastal groundwater basins. Furthermore, projected reductions in fog and cloud cover will increase moisture evaporation, creating greater water demand for crops.

Securing the future of our regional water supply will require a variety of solutions. As Valley Water's One Water Plan 2 lays out, these include water conservation measures and increasing the use of recycled water, as well as conserving and managing groundwater recharge zones for maximum infiltration of water into aquifers.<sup>15</sup> **Refilling our aquifers not only secures water supply, it minimizes saltwater intrusion.** 

Sea-level rise also poses direct risks to coastal ecosystems and cities. Water levels are projected to reach as much as five feet above current levels by 2100.<sup>16</sup> Already, much of the built infrastructure in place along coastal communities is dated, making them more vulnerable to increased erosion and flooding events.

#### **Shifting Species Ranges**

As climate-driven aridification continues, local areas will see a "reshuffling of the deck" of plant and animal communities. Arid-adapted species will thrive, while moisture-adapted ones will diminish or disappear locally.<sup>17</sup> Vegetation communities common in areas to the south and east may migrate into our working area if the climate conditions become suitable and their seeds are able to get here.

Plants and animals that depend on shrinking vegetation communities will need to migrate via "climate corridors" to access other suitable conditions. As with regular habitat corridors, we will need to ensure that "climate corridors" have minimal obstructions and are large and biodiverse enough to accommodate plant and animal species with a variety of mobilities. Wide-ranging species such as mountain lions can move long distances quickly, while it may take other species generations to move the same distance. So, both "live-in" and "pass-through" habitat is needed.

#### **Climate Change Resilience Opportunities**

Climate change is a complex, multifaceted issue that requires cooperation across the conservation community. POST will explore opportunities to:

- Work with partner landowners to better understand and manage fuel levels and risk. Share wildfire policy information and science and coordinate controlled burns and other fuel reduction efforts.
- Support watershed health and reduce flood risk by ensuring that groundwater recharge zones are protected and land is managed to promote groundwater recharge.
- Protect, restore and create climate corridors, related and overlapping with our efforts to protect wildlife linkages; POST should prioritize diverse regions that can act as species migration routes.
- Ensure our climate change mitigation efforts consider the disproportionate impact on low-income communities, vulnerable populations and communities of color, and include these groups in our planning efforts.

 Increase cross-organizational collaborations to cover a larger portion of the Bay Area region. Consolidate findings from regional ecosystem health monitoring in order to measure climate change effects and conservation action effectiveness at a broader scale.



Coastal ecosystems are important locations for migratory birds and fish and can play a major role in the shoreline's ability to adapt to altering conditions. They sequester carbon, buffer during extreme weather events and filter out contaminants. However, after centuries of urban sprawl and industrialization, the Bay Area estuary has faced extreme habitat loss and fragmentation and it is currently considered to be in fair to poor condition by the San Francisco Estuary Partnership.

#### **BIODIVERSITY – GUARDING AGAINST GEOGRAPHIC AND GENETIC ISOLATION**

The Bay Area's unique combination of diverse topography and ocean-influenced climates supports biological richness at levels that place it among the world's top 36 biodiversity hotspots, according to Conservation International 2.<sup>18</sup> Some 80 habitat types and species here are found nowhere else, such as the San Francisco garter snake, described by some as the most beautiful snake in the world.

Despite the considerable development of the Peninsula and the South Bay, the region's habitat connectivity and ecological health has sustained viable populations of many species — indeed, most of the species present before European colonization are still here.

But habitat loss, non-native species invasions and climate change impacts threaten the tenuous ecological balance we have in our region.









#### Habitat Fragmentation

Habitat fragmentation is caused by urban development and results in a large expanse of habitat being reduced to many smaller patches. It reduces wildlife populations by fundamentally changing their habitats and impeding their movement.<sup>19</sup> This threat to wildlife takes the shape of roads, railways and powerlines, as well as many small residential parcels, each with their own buildings, clearings, access roads and fences. The proposed high-speed rail dividing the Santa Clara Valley from Gilroy to San Jose is one example of a development that would directly interfere with clear passages for wildlife movement.

Rural housing development specifically is one of the greatest threats to habitat connectivity. Population trends, as well as the Bay Area's decades-long housing shortage, are pressuring local planning commissions to meet the demand for more housing of the suburban sprawl variety. Not only does this type of development further fragment habitat, but it also contributes to, rather than mitigates, climate change, by promoting a car-centric lifestyle (see Housing Challenge, page 16).

Historically, agriculture, which replaces natural habitat with crops, has also contributed to fragmentation,

although some studies<sup>20</sup> have shown that many animals are able to traverse agricultural land, especially where adjacent hedgerows and waterways exist. Recently, POST has begun to work with farming partners to consider how their operations can accommodate the needs of wildlife as much as possible.

# Fragmentation also occurs at grander scales, like the potential geographic isolation of the Santa Cruz Mountains.

Reductions in wildlife connectivity between the Santa Cruz Mountains, the Diablo Range to the east and the Gabilan Range to the south threaten to cut the Santa Cruz Mountains off from the rest of the state. Without the flow of new individuals in and out, many animal species, notably mountain lions, face genetic isolation which can lead to extinction. The major 2019 Coyote Valley acquisition by POST, the Santa Clara Valley Open Space Authority and the City of San José secures one of few remaining critical linkages to the Diablo Range. But conservation of the Gabilan and Pajaro River Basin linkages to the south will be necessary to ensure the long-term health of our ecosystems.









#### **Biodiversity Opportunities**

Habitat fragmentation is pervasive in POST's working area at multiple scales (from roads to metropolises). However, we can continue our efforts to get more strategic about where and how we work to maintain and enhance connectivity.

To minimize habitat fragmentation and enhance connectivity, POST should:

- Work with partners to purchase land and conservation easements that prevent subdivisions on land where connectivity is the greatest and the threat of development is the highest.
- Partner with conservation and transportation entities to relieve areas of high risk for wildlife-vehicle collisions along major roadways (e.g., Highways 17 and 101, Interstate 280 and Monterey Road).
- Continue working with key partners to collect data that enhances our understanding of wildlife migration patterns and measures their response to connectivity conservation.
- Restore degraded habitats critical for regional connectivity.
- Work with partners to translate scientific studies of wildlife-human interactions and behavioral shifts into demonstration policies, practices and educational campaigns aimed at minimizing stress to keystone wildlife species, such as predators. Support the long-term monitoring of the effectiveness of these policies, practices and campaigns.

#### THE HOUSING CHALLENGE

In the midst of a prolonged housing crisis, residents of the Bay Area are looking farther afield to find affordable home options. And yet building new housing in open space only contributes to the negative impacts of climate change and puts communities at risk. Addressing the housing challenge is not simple.

#### Population Growth

As the U.S. population is moving toward the coasts and major job centers like Silicon Valley, the Bay Area is projected to add another two million people by 2050 – growing from nearly 8 million to 10 million residents.



**9**+

#### The Suburban Dream

The COVID-19 pandemic has, at least temporarily, shifted peoples' preferences toward homes with more rooms and access to open space. This trend is driving up housing prices throughout the Bay Area's extensive suburban areas.

#### Impacts On Natural Resources

Although regional housing plans call for adding the bulk of new housing within existing urban limits, the financial structure favors development of flat open spaces, of which there are very few remaining. These valley bottoms and low-lying foothills are also where our groundwater recharges and our wildlife traverse.

#### The Smog Factor

Vehicle emissions already add a significant portion of greenhouse gasses in the Bay Area, and the more people undertake longer commutes the more emissions are added to the region, decreasing air quality while expanding traffic congestion.

#### Wildfire Risk

The movement away from cities has also resulted in a significant portion of residents living in the wildland-urban interface – 20 percent of Santa Cruz County residents are in the forested lands outside the city center. Increased fire regularity and severity in these locations puts people's homes and livelihoods at significant risk.

#### Inequality

Lower income residents and Black, Indigenous and People of Color have disproportionately experienced the repercussions of a rising cost of living and lack of affordable housing in our region. If we continue to fall short of building enough housing in a sustainable way, increasing numbers of community members will either be forced out of the region or housed in more hazardous areas. It is imperative to have housing options that allow people of all income levels to find safe and healthy places to live in the Bay Area.

#### The Solution?

There is no silver bullet for reconciling these competing needs, and POST is not an expert in housing. However, SPUR's Regional Strategy, as outlined in its May 2021 report "A Civic Vision for Growth," I describes a promising vision for meeting the Bay Area's housing needs in ways that are equitable, affordable, sustainable – and environmentally responsible.



WORKING LANDS MAKE UP A SIGNIFICANT PORTION OF UNPROTECTED LANDS IN OUR AREA. SOURCES: ESRI, POST, CPAD, FMMP.

## **PEOPLE & NATURE**

People and nature intersect in myriad ways, and a socio-ecological approach to conservation planning that acknowledges, measures and adapts to the fact that humans are part of the conservation calculus is necessary for a full understanding of these interactions. This section explores the different ways that people and nature do — and should — work together more productively and in ways that truly benefit all: Working Lands, Equitable Access and Nature for Cities.

#### **WORKING LANDS**

The working lands in POST's area are timberlands, grazing lands and farmlands. The majority of these lands are in private ownership and make up the largest category of unprotected lands in our area. The products generated by these lands are important to local economies, providing jobs and supplying food and timber to consumers across the country. This economic activity from this production provides a meaningful alternative financial incentive to developing the land. Having a diversity of sources of food, both within and beyond our region, increases the resilience of our local food supply, reduces emissions related to long-distance transportation of food and reduces dependency on industrial agricultural operations.

Working lands also provide critical ecological functions: sequestering carbon, serving as critical habitat for many of our region's species, providing connectivity between protected areas and buffering them from fragmentation. Increasingly, research is demonstrating 2<sup>1</sup> how

land management via farming and grazing can support carbon sequestration through soil restoration and stewardship. These landscapes emit fewer greenhouse gasses than do developed lands.<sup>22</sup> Protected farmland and ranchland can also build climate resilience by increasing water infiltration to aquifers, or even as emergency floodplains.

For more than a decade, POST has actively collaborated with farmers and ranchers around land access, business and market development, agricultural infrastructure, workforce housing and climate-resilience projects such as off-stream water storage.

> Similarly, POST's conservation of redwood forests goes further than natural resource protection; we collaborate with timber companies to protect land for sustainable logging and to manage and restore the 9,000-acre San Vicente Redwoods property.

The substantial historic and current inequities associated with working landscapes can't be ignored. Agricultural land in our area is overwhelmingly owned and operated by older white individuals, and more diverse beginning farmers and ranchers face significant obstacles to accessing land. However, there will be significant opportunity to change these patterns in the future as generational turnover occurs.

Our region needs the majority of landowners and land managers to work in alignment toward ecosystem health that benefits all. Our goal should be to preserve a mosaic of land uses, where commercial forestland supports local economies and climate mitigation goals; local food production provides education, resilience, environmental benefits and economic opportunities for both businesses and employees; and all areas are managed for peak ecosystem functioning and climate resilience.

#### Timberland

All commercial timberland in POST's region is redwood forest. The majority of these working forests are owned by three timber companies, and only a small percentage are officially protected. The CZU fire of 2020 burned much of the timberland located within POST's working area. The redwood forests of the Santa Cruz Mountains have stood for millennia, and North Coast redwoods are now known to sequester more carbon per acre than any other forest type in the world,<sup>23</sup> making redwoods our strong allies in mitigating the impacts of climate change. Unfortunately, most of these forests were clearcut 100+ years ago and are still in the process of recovering from these past unhealthy practices. Timber production continues to be important for the region. When conducted responsibly, timber production can contribute to both a healthy ecosystem and local economy. The severe impacts of the CZU fire on our region's redwood forests highlighted the need for continued restoration, and there are opportunities for conservation organizations to work with timber companies to build regional wildfire resilience. Healthy redwood forests that are actively managed and sustainably harvested can continue to provide habitat and sequester carbon, building the climate and biodiversity resilience that we all need.





#### **Grazing Land**

Cattle grazing of grassy upland habitats is widespread in our region. By acreage, it is the working land use that has the greatest level of protection, with significant holdings owned and managed by public agencies, as well as those owned privately but protected by conservation easements. Land managing entities, including POST, use grazing as a tool to reduce fire risk, mimicking the benefits of native herbivores, such as tule elk, which are now absent from most of our area. Grazing also prevents grasslands from shrub encroachment and maintains habitat for grassland-dependent species.







#### SINCE 1990 FARMLAND LOSS

22% <sup>TO</sup> 50%

#### Farmland

In our region, farmland — both row crops and orchards — is primarily found along coastal bluffs, valley floors and historic floodplains. Since European settlers arrived, much of the land adjacent to the San Francisco Bay and south into the area formerly known as "the Valley of the Heart's Delight" was also farmland, but it has been consumed by residential and commercial development.

As a result, farmland losses since 1990 have been significant in POST's working area, ranging from 22% to 50% percent loss. While 45% of the farmland remaining on the San Mateo Coast has been protected, thanks in large part to POST, only 11% of Santa Clara and Santa Cruz County cropland has been preserved. Farmland losses have been so substantial along the San Mateo Coast and in Santa Clara Valley that developers, and in some cases environmentalists, have argued that agriculture is no longer commercially viable and should be abandoned in favor of other uses.

By virtue of being flat and already cleared of vegetation, farmland in particular continues to be desirable for development. But farms often function as ecological buffers between urbanized areas and upland open space. Additionally, farmland in the region's valleys often provides the best linkage available for wildlife to move through as they migrate from the Santa Cruz Mountains to the rest of California.

In these areas, farm practices that include riparian buffers, fencing and rodenticide use can have a significant impact on wildlife health and movement. Shifts in these practices can significantly benefit or harm wildlife movement, as well affect the land's suitability for a broad array of other species that rely on unique valley floor habitats.

Much like natural systems, agriculture brings many ecological, social and economic benefits to the area. So, it is imperative to the vitality and sustainability of our region that connections to markets and resources be preserved and that the loss of remaining farms and ranches be prevented.

#### **EQUITABLE ACCESS**

POST's mission to protect open space on the Peninsula and in the South Bay for the benefit of all promotes an ethic of inclusion that is growing in demand.

Within our region, POST believes it is important to deeply understand the intersections among racial and ethnic identities, gender, family composition, financial wealth and economic stability as we work to resolve historic and contemporary inequalities related to park and green space accessibility. While our regional parks and open spaces have been a respite to many throughout the Covid-19 pandemic and in the face of rising global temperatures, the reality is that our parks and green spaces are not accessible for all members of our region. "Regions are equitable when all residents — regardless of their race/ethnicity and nativity, gender, or neighborhood of residence — are fully able to participate in the region's economic vitality, contribute to the region's readiness for the future, and connect to the region's assets and resources."

San Francisco Foundation<sup>24</sup>



MANY DISADVANTAGED COMMUNITIES HAVE LIMITED ACCESS TO PARKS AND PRESERVES NEAR HOME. SOURCES: ESRI, POST, CPAD, CALIFORNIA STATE PARKS.

According to The Trust for Public Land's special report The Heat is On Z, with temperatures rising and quality parks too few and far between, communities of color face a dangerous disparity. The parks within a 10-minute walk from their homes are more likely to be small, crowded and unideal for social distancing or finding ample shade. Additionally, the report demonstrates a direct correlation between climate impacts and the historically racist practice of "redlining," the denial of housing loans and other financial services to predominantly Black Americans and other communities of color. Recent studies have shown these historically red-lined communities have the highest average temperatures in 94 percent of the cities examined. A "lack of greenspace and tree canopy" were cited as "the chief reasons for the disproportionate heat exposure."<sup>25</sup>

The California Department of Parks and Recreation<sup>26</sup> compiles data on park and open space accessibility at the state-level via their Parks for All

Californians I website (see map, page 21), showing that:

21%

of residents of California live further than a half mile from a park.

# **61%**

of residents of California live in areas with less than three acres of parks or open space per 1,000 residents.



According to the Hispanic Access Foundation's The Nature Gap ☑ report, those most lacking in access to nature in the state of California are people of color (61% of Asians, 52% of African Americans, 55% of Hispanics and 48% of Native Americans).<sup>27</sup>

Beyond proximity to green spaces and public parks, there are many other barriers preventing access to nature ☑ for majority communities of color. A study<sup>28</sup> of these constraints found the top barriers included access issues (e.g., transportation, costs/fees associated), fewer early childhood experiences in the outdoors such as socialization and educational opportunities, a lack of marketing and outreach efforts tailored to ethnic minority communities (e.g., signs, messaging and translations), fear and safety concerns, the historic displacement of communities of color leading to a general sense of not feeling welcome and contemporary experiences of discrimination in the outdoors.

These constraints, and our growing understanding of the inequitable access to nature for majority communities of color as well as lower-income residents of our region, are a call to action for any organization working in preserving and increasing access to public lands and green spaces.

Currently, POST is leading a multi-partner, landscape-scale effort across the Santa Cruz Mountains to study the current "State of the Trails." This study, which will launch in late 2022, seeks to better understand whom current trails serve, and whether there is sufficient access for people with disabilities and people dependent on public transportation. It will also identify opportunities and strategies for improving access and possibly expanding the existing network of trails in the region.

#### **Nature for Cities**

An estimated 83% of Americans 2<sup>29</sup> and 95% of Californians live in urban areas, and urban populations are projected to grow. As these communities expand, it becomes increasingly important for the health of people — and the wildlife — who live there to have access to green spaces.

Traditionally, the conservation movement has not considered the possibility that cities could assist in the biodiversity crisis in any way. More recently, policy makers and scientists have come to recognize the importance of urban environments and the role they can play in maintaining resilient landscapes. Critical "stepping stones"<sup>30</sup> for the movement of wildlife populations, cities present opportunities that can effectively promote the survival of both people and biodiversity. This concept is seen in a range of projects currently underway in our region, like the re-oaking initiative ☑ in Silicon Valley, which aims to replant native oaks throughout urban areas.<sup>31</sup> These efforts also begin to address the disparity of climate impacts seen on low-income communities and neighborhoods that are majority communities of color.

Recent studies have found that cities are able to hold more biodiversity than was previously believed, contradicting the historical narrative that urban areas are "biological deserts."<sup>32</sup> A city that encourages healthy biodiversity also encourages effective "green infrastructure," such as street trees, rain gardens and restored floodplains. These elements not only provide habitat for wildlife, but also provide services to the community such as carbon sequestration, improved air quality and flood prevention.

Diverse and accessible urban parks also have positive side effects on the mental and physical wellbeing of residents in urban neighborhoods. Outdoor spaces improve both mental wellbeing and physical health by promoting things like physical activity.<sup>33</sup>

But as city planners create more parks and other recreational areas, it is crucial to acknowledge the historical association of urban greening with gentrification and community displacement. Due to these historical inequities, members of previously redlined and under-invested communities may not see new parks as a welcome addition. Efforts at "greening in place"<sup>34</sup> must proceed with the engagement of the communities they are designed to serve, and in alignment with civic policies that protect against displacement.



#### **OPPORTUNITIES FOR PEOPLE & NATURE**

Considering the dire consequences of climate change and its disproportionate health impacts, the economic and ecological benefits of working lands, our region's rapidly expanding racial and income inequality, and the lack of access to green spaces for low-income and majority communities of color, POST has a number of opportunities to make a real difference for our region. These include:

- Prioritizing community benefit and equity in working lands access, so that farmers and ranchers that have historically been excluded can benefit from conservation's focus on working lands.
- Engaging partners in a study of the opportunities within the Peninsula's urban areas to benefit people and the region's ecosystem through urban forest, urban open space and urban greening projects.



- Partnering with community-focused organizations and agencies to better understand how POST's programs and projects can help deepen a new trend of inclusion in conservation practice and outcomes.
- Supporting activities that foster participation by more of the public in the stewardship of protected lands.
- Increasing proximity to green space for communities most lacking in access (i.e., exploring and investing in urban greening and referring to state-level park equity data imes in planning new sites).
- Removing or reducing barriers to equitable access to nature by partnering with public agencies to address constraints, increasing and improving communications with local residents, and addressing community concerns related to safety, comfort and costs.
- Increasing our financial support to and partnerships with community-based organizations that provide educational outdoor opportunities for low-income families and youth of color.
- Focusing on system-level change by dedicating more staff time and resources to being regional collaborators, conveners and service providers.
- Deepening our work with public agency partners, individual/private land stewards (particularly newer farmers and land managers), and local networks such as the Santa Cruz Mountain Stewardship Network, Together Bay Area, and Greenbelt Alliance.
- Addressing the historic dispossession of land from Indigenous people as well as the contemporary inequities experienced by Native communities by deepening our work with and support of local tribal groups.





### CONCLUSION

The acceleration of climate change in recent years, together with persistent pressures for development of the wildlife-urban interface in response to the Bay Area's growing population and longtime housing shortage, all pose significant challenges to balancing land use choices throughout POST's working area.

At the same time, the current and forecasted impacts of climate change are perhaps the strongest argument for continued conservation of the lands that house our water supply, our exceptional biodiversity and the natural solutions to these very threats. POST remains committed to achieving a careful balance of urban and rural landscapes — but how we go about achieving that balance must evolve. We're reinvigorating how we approach our work to integrate the national awareness that humans are inextricably connected to our natural environment. Building resilience in our communities and ecosystems will be critical to our mutual survival. Making sure that our conservation work, and the environmental protections this work provides, equitably benefits all members of our communities is central to our approach — and ultimately fulfills our mission to protect open space for the benefit of all.

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