La Puerta Park

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La Puerta Park

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Pitzer College

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Readers:

Professor Lance Neckar

Professor Susan Phillips
Acknowledgments

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Abstract

The thesis at hand analyzed ecological corridors, biophilic design, and native planting as individual design entities, and eventually combined them through the creation of a comprehensive park proposal called La Puerta Park. The park was located in the urban matrix of Claremont, CA on a 10-acre parcel of land. The land was recently purchased by Trumark Housing, and a housing development plan was put forth. This project creates a superior alternative to the high levels of impervious surfaces, loss of biodiversity, and lack of community that would ensue after the housing plan implementation. The design process was fluid, as each of the three theories informed one another, producing a cohesive final park proposal. The culminating design offered a precedent for park-making in urban contexts through establishing an interconnected green space hospitable for humans, flora, and fauna.

Key Words: Ecological Corridor, Biophilic Design, Native Planting, Fragmentation
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Introduction

Growing up, the best memories I had were running through the woods with my brother and friends. We often found ourselves taking time to appreciate everything the forest in our backyard had to offer. I feel fortunate enough to have these memories, given many are deprived of the same opportunity and access. With the fortune I had growing up exposed to “nature” in a relatively untouched and healthy form, I gained a deep appreciation for the happiness it brought me. As I have gotten older and traveled around, I have become more aware of the lack of green areas especially in urban contexts, as well as degraded ecosystems. Recognizing opportunities to restore and redevelop ecosystems so humans and non-humans can benefit was the underlying component of my thesis project. La Puerta Park, my project proposal, was constructed using a variety of supported design theories, transforming the parcel into a park that created a healthy Southern California ecosystem that community members could appreciate.

Landscape design strategies must be transformed to not further feed into sprawl and climate change. Open spaces have been sacrificed for housing developments, parking lots, and freeways. As a result of infrastructure, green spaces have become fragmented (Eidlin, 2005). Furthermore, as landscapes are razed, and slowly deteriorate, access to green space will dwindle, a key factor to human health (Beatley, 2017; Gillis & Gatersleben 2015). Human and non-human health are not mutually exclusive. Those green areas that remain are often planted using non-native, ornamental plants, hindering native species. Reframing landscape design processes to combine ecological corridors, biophilic design, and native plants increased the potential to mend the “nature” in a space, as well as the “nature” of a space.
**Background**

A vacant parcel of land in Northern Claremont, California allowed the reshaping of harmful design practices. The space sat at the foot of the San Gabriel mountains. It was bounded by the Thompson Creek Trail to the north, Forbes Avenue to the east, homes to the south, and La Puerta Sports Park to the west. The 10-acre parcel and all of Claremont were on the traditional land of the Tongva people, a group that inhabited the foothills of the San Gabriel Mountains (Claremont Heritage, n.d.). The land most recently housed the La Puerta Intermediate School, until its eventual closure in 1979 (City of Claremont, n.d.). Following its closure, the Claremont Unified School District entered into a 99-year lease with the City of Claremont (City of Claremont). Included in the lease was the ability of the City of Claremont to “develop, landscape, and utilize” the western section of land. The western portion became La Puerta Sports Park, while the eastern section, the section I redesigned, remained vacant. The forgotten parcel entered back into the conversation as Claremont looked to meet the state’s housing requirement, which planned for 1,711 new housing units by 2029 (City of Claremont, n.d.). Trumark developers bought the eastern parcel of land from the Claremont Board of Education for $13,058,000 (City of Claremont, n.d.). The current proposal will have 56 houses, each a minimum of 4,000 square feet, and around 6 units per acre, providing only a fraction of the necessary housing (City of Claremont, n.d.). The plan “embrace[d] the traditional Claremont aesthetic” of quaint one to two-story houses (City of Claremont, n.d.). The proposed lots were mainly covered by housing, leaving minimal green space, and expanding impervious surfaces, preventing water from percolating into the soil. The park created in the space adjacent to La Puerta Sports Park offered the opportunity to stave off the current plan. The proposal promoted
ecological corridors, biophilic design, and native planting, all of which emphasize ecological biodiversity and community access to the space in comparison to a new housing development.

The park proposal at hand was necessary due to sprawl. The term sprawl refers to “low-density, automobile-dependent development at the urban periphery” (Bruegmann, 2005, p.2). Sprawl carries multiple associations, whether it be economic, political, or social, but for the research at hand, it connects to its impact on green space. Los Angeles sprawl in particular relies heavily on the expansion of roads, as public transportation does not reach the outer edges of the city (Eidlin, 2005). As a result of urban development, access to green spaces has declined, as revealed by a study conducted in India (Bhat et al., 2017). Increasing green areas requires combating sprawl.

There is no singular precedent that underlies my design proposal, however, one recent design project shares a few main themes. St. Pete Pier in St. Petersburg, Florida was designed by Rogers Partners. The firm developed a respite in the urban matrix. While differing in the massive engineering that was required to build the park, the landscape design decisions provided a backdrop for my eventual park design. St. Pete’s Pier included a variety of native plants that were scattered appealingly throughout the park (Staff, 2021). Beyond that, the park housed a variety of criss-crossing paths that harnessed the concept of complexity and order in biophilic design. Furthermore, the pier was created by enlarging the scope of green areas in St. Petersburg, Florida to create an integrated park system (Staff, 2021). The pier was developed by combining successful design strategies to create a sustainable public space.
Site Context
Literature Review

Introduction

Urban development has consumed great extents of land, impacting the health of humans and non-humans (Hasse and Lathrop, 2003). Scholars analyzed these issues to harness design practices that account for these impediments. In this literature review, I discussed the discourse on habitat corridors, biophilic design, and native planting to lay the groundwork for my park proposal.

The literature review at hand answers a trio of questions investigated extensively by scholars. These three quandaries address a gap in the literature: how can designers coalesce ecological corridors, biophilic design, and native planting to create maximally sustainable and effective designs? The first question was: how do we expand the ever-dwindling nexus of green spaces (Gregory et al., 2021; Bennett, 2004; Beirer and Gregory, 2012)? Andrew Gregory along with Paul Beirer was leading the investigation into ecological corridors, which are “stepping stones of natural land, that is conserved to enhance the ability of plants and wildlife to move among larger habitat patches” (Gregory et al., 2021, p.1). Their research highlighted the impacts of urbanization on wildlife, and the possibilities of ecological corridors to remediate human-induced harm. Moving onto biophilic design, creators within this field look to answer the question: what is required to create an ecologically rich space that is both intriguing and comfortable for humans (Beatley, 2011; Kellert, 2012; McHarg, 1969)? Ian McHarg, a Scottish landscape architect, initiated the groundwork for biophilic design. His work emphasized that cities and “nature” do not have to be separate but can be integrated. The idea of biophilia was then adopted by designers such as Catherine Ryan, Stephen Kellert, and Timothy Beatley and renamed biophilic design. It was adopted by architects, landscape architects, and interior
designers as a method to create meaningful change in spaces. The last question was: how can we plant in a manner that maximizes biodiversity and ecosystem health (Burghardt et al., 2009)? The presence of green areas and interconnected networks in cities have been shown to have positive impacts on biodiversity (Burghardt et al., 2009). However, these sites can be improved by planting plants that address the needs of ecosystems in specific locations. The following sections provide an in-depth exploration of the three individual theories and their potential for interplay with one another.

**Ecological Corridors**

Until recently, “a high level of connectivity existed among ecosystems” (Bennett, 2004, p.9). Currently, however, human-induced habitat fragmentation has increased, becoming the main threat to biodiversity (Buchart et al, 2010). Less than a third of the earth’s protected areas are sufficiently connected (Saura et al., 2017). As a result of the fragmentation, road mortality is responsible for the death of between 89 and 340 million birds annually, and on just one stretch of pavement in the Sonoran Desert, it was estimated that 4,000 snakes were killed annually (Loss et al., 2014; Rosen and Lowe, 1994). Habitat corridors offer a solution to these issues, creating an integrated green matrix and interconnecting separated green areas. In a meta-analysis of ecological corridors conducted by Gilbert-Norton and her colleagues (2010), migration between habitat patches increased by 50% with the creation of eco-corridors, while another study found genetic diversity increased (Christie and Knowles, 2015). A fence used to shepherd animals to safe crossing sections can reduce roadkill by 93.5% (MacDonald et al., 2000). Habitat corridors effectively address the fragmentation that ensues as a result of sprawl. As a design principle, eco-corridors offer safe passage, migration, genetic diversity, and a green transportation network.
Biophilic Design

Before diving into the patterns of biophilic design and its impacts on human health, a historical context about its emergence, as well as its presence in urban settings is necessary. While biophilia was not used as a term, the idea of connecting humans to “nature” has been present in historical designs across the world (Ramzy, 2015). Utilizing biophilic design entails returning to past forms of design that emphasized a connection between humans and “nature”. Such an idea juxtaposes the common notion that “… the progress of civilization depends on subjugating and converting, if not conquering the natural world” (Kellert, 2012, p.1). Biophilic design challenges these notions by drawing on ancient design techniques such as visual connection with “nature”, non-visual connection with “nature”, prospect over space, and refuge from dangers as archetypes for current design quandaries. Such solutions are crucial in urban settings, where over two-thirds of the developed population currently reside (Kellert, 2012). Biophilic design offers the opportunity to reestablish a coexistence of humans and “nature” in urban settings.

Scholars have created various biophilic design patterns in an attempt to reconnect humans and non-humans. A biophilic design pattern is “A description of a pattern in “nature” that engenders a positive biological response in humans” (Ryan & Browning, 2020, p.43). The widely adopted framework of biophilic design includes fourteen patterns of biophilia, each falling under one of three tenets: “nature” in a space, natural analogues, and “nature” of a space (Ryan & Browning, 2020). “Nature” in space refers to direct contact with “nature”, natural analogues such as shape, color, and texture represent organic evocations of “nature”, and the “nature” of a space outlines spatial configurations that would be experienced in “nature” such as prospect and refuge, as previously touched upon (Ryan & Browning, 2020). Biophilic design
does not just provide an aesthetic amelioration to a space, but instead creates alterations that exact a deep and meaningful change to the health of the space, and those using the space.

There is a growing set of literature that shows biophilic features can improve human psychological well-being. One study revealed that there are definitive benefits to human psychological and physical well-being from visual connections to “nature”, for example, plants, wood, and water (Gillis & Gatersleben, 2015). Another experiment analyzed fifty empirical studies, concluding that spaces lacking “nature” harm human health and quality of life (Grinde & Patil, 2009). Such negative effects can be reversed by introducing “nature”, or natural elements into spaces, substantiating the claim that biophilia is beneficial to human health (Grinde & Patil, 2009). Another study referencing activity and exercise in green zones found that when participants were in any form of a green area their self-esteem and mood increased, even more so when water was present (Barton & Pretty, 2010). The last study used self-reporting of emotions in a range of areas and found that experiences in natural settings had the greatest restorative outcome on human health (Hartig et al., 1991). Aside from benefiting human health, biophilic design also centered around healing the landscape. Once biophilic elements are added, a landscape can become adaptive, and in turn resilient (Beatley, 2017). Biophilic design ensures that the restoration of flora and fauna is at the forefront of design plans. Reintroducing greenery enables reciprocity among the flora and fauna, ensuring the survival of species previously unaccustomed to urban settings.

**Native Planting**

Invasive species have become an existential issue to native plants through overpowering endemic species. There are currently 50,000 invasive species in the United States (Pimentel et al., 2005). The “economic damages associated with alien invasive species… amounts to
approximately $120 billion per year” (Pimentel et al., 2005, p.282). Aside from the environmental concerns related to invasive species, the economic impact is equally damaging, suggesting intervention is necessary.

Narrowing in on the environmental impacts of invasives, a notorious study suggests that the introduction of non-native species has the potential to impact both habitat structure and composition (Wilson & Belcher, 1989). The results underline that non-native species can overrun areas consisting of native species, ultimately shifting the entire dynamic of an ecosystem.

Meanwhile, another study analyzed the impact of native plants on bird and Lepidoptera (order of insects relating to butterflies and moths) communities. The research collected data on six suburban properties, three with invasive ornamental plants, and three with native plants. Ultimately, the findings reflect that the site with native plants had more caterpillars and caterpillar species, along with bird abundance and diversity (Burghardt et al., 2009). Furthermore, bird species that were under the protection of regional conservation were eight times more abundant and diverse on the native planting plots. Another study confirms and strengthens the findings about the importance of native species. Conducted in Texas, researchers studied birds in native and non-native blocks of grasses. They concluded that exotic grasses supported fewer birds, and that arthropod (invertebrates with exoskeletons and segmented bodies) populations were significantly higher on native sites (Flanders et al., 2006). The previous studies found significant positive effects of native species on ecosystem biodiversity. Utilizing native plants combats invasive species, thereby reducing stressors on an ecosystem, and increasing biodiversity.
Conclusion

While habitat corridors, biophilic design, and native planting have extensive research respectively, there is minimal to no research into how to best intertwine these theories. Although these schools of thought individually rejuvenate failing ecosystems, they do so in a limited capacity. By joining these three separate design processes, ecosystems can be expanded and healed at a greater rate. The remainder of the paper aims to address this gap in scholarly literature, by designing a connected park.

Methods

The following methodology section should be appreciated as a fluid process. With each design decision, there was a cascade of impacts that were analyzed and responded to accordingly. As such, I moved between each of the design theories as needed. However, to simplify the structure of the methods, I presented the theories in a specific order.

The first step in designing the park required conducting a site analysis of the space. A site analysis connected me with the space on a deeper level, enabling an appreciation of everything it had to offer. The analysis also yielded information on the sun, shade, wind, vegetation, topography, noise, smells, views, and elements surrounding the space. I utilized a drone to get an accurate representation of the topography of the space. The elevations were informative as I entered the design phase of the project. The elevations guided the placement of water catchment systems, planting locations, and locations with strong views. Carrying out the site analysis laid the groundwork for the eventual design of the space.

In the first design phase, I created an ecological corridor between the La Puerta parcel and the Thompson Creek Trail, and as a result the foothills of the San Gabriel Mountains. Such a
proposal required a way to best interconnect vegetation between the sections of the land, and allow safe passage for fauna.

The planting plan coincided with biophilic design and my design of the space. I incorporated various methods to better intertwine humans and non-humans. While a connection to nature is a core component, overlooked elements are mystery, prospect, and refuge. These theories, which are situated within the broader theory of biophilic design, were developed through trail layout, plant architecture, and more to create an intriguing area.

Lastly, a native planting plan was developed for the La Puerta Park site. Utilizing Calscape, an online plant database, I created a list of viable plants for the site. Working in tandem with biophilic design, and the layout of the site in general, plants were selected based on their needs, and the needs of the site. Specific examples include large trees for shading, plants that enhanced sight lines, and plants that increased biodiversity. The planting plan was created to enhance user experience and appreciation of the site, both human and non-human.

**Park Design**

**Roadmap**

Through researching theoretical design principles, I redesigned the space into a park. Initial site analysis and elevation plans were created to inform site-specific decisions. A Circulation plan of the site was also created to inform how the site was to be utilized by visitors. After that, the geographical scope of the site was expanded to analyze how the site was situated in the larger Claremont area. The location, although isolated, could add a link to the shrinking extent of green spaces in Claremont. Forming the connection created an ecological habitat corridor. In addition, the theory of biophilic design, which reestablishes humans' diminishing relationship with flora and fauna, was used (Ryan & Browning, 2020). Another theory that was
used as a key feature of the park was native planting. Such an inclusion established a site for the interaction of all types of native species to thrive. Finally, the counter design to the park was addressed. The project made use of burgeoning theories about landscape design, ultimately offering a precedent for how spaces should be designed in the future.

**Introduction**

La Puerta Park offered an integrated park system that connected to the adjacent sports park and off-shooting bike trails. As a result, users were given access to a variety of sceneries and activities. La Puerta Park housed 40 parking spots, expanding the parking network in Claremont that gave immediate access to green space. Moreover, as a brief overview, the park featured winding trails, ample seating, a large green space, and stunning views of the San Gabriel Mountains. The park was enclosed by a sweeping bioswale that traveled under a footbridge at the southern section of the park. Spanning across the park were various native plants that attract indigenous species.

**Site Analysis**

The site’s entrance was at the northeastern corner but was fenced off, along with the rest of the land. A section of pavement traversed the entire northern section of the site. Along the northern fence were large eucalyptus trees, and in the center of the site were other groups of vegetation. The western portion of the park contained large piles of debris from the previous school. The mounds were piled with rocks, piping, and other rubble.
Prevailing winds blew from east to west. The sun followed its east-to-west path across the site, being strongest in the late morning and early evening. Noise from Interstate 210 to the south was most present along the southern section of the location. Views of the San Gabriel mountains were present from virtually all areas of the land. Initial observations led to the conclusion that the low-lying sections of land were along the eastern and southern fence, as well as a small middle area. However, the following elevations provided a much more accurate representation of the site.

**Elevations**

Drone diagrams of the site were captured. Unfortunately, the elevations were slightly inaccurate due to the spring foliage. The height of the foliage led the drone sensors to diagram those sections of land as higher elevations. Regardless, it was clear that the depressed areas of land that were identified in the initial site analysis were accurate. Along the eastern and southern fence were depressed areas of land. The southern central piece of land that is heavily covered in lines due to high-growing vegetation was also low-lying.
Circulation Plan

The circulation plan above highlights the movement of pedestrians, cyclists, and vehicles. The darkened thin paths represent pedestrian walking areas. Importantly, people can enter and exit the park through the eco corridor, as well as La Puerta Sports Park. These paths enable users a wider range of activities, increasing useability. Bike paths are located in the eco corridor, and the north section of La Puerta Park, where bikers can park their bikes. Parking spaces are located in the northeast section of La Puerta Park, and the western portion of La Puerta Sports Park. The parking of La Puerta Park was limited to forty spots to maintain a low level of impermeable surfaces and control the number of park visitors.
Ecological (Eco) Corridor

Establishing an eco corridor necessitated interconnecting two fragmented locations. The first was La Puerta Park, which is designated as “Park Proposal Location” in the southeast parcel. The location the park connected to was the northwestern section of the Thompson Creek Trail. The “Park Proposal Location” was fenced off, creating a disconnect between these two biodiverse areas. A small portion of the trail directly north of the “Park Proposal Location” offered the opportunity to interconnect these two areas if an opening was created. While the proposed site is fully in the picture, Thompson Creek Trail stretches northeast and northwest for some distance. While the trail does not enable full access to the San Gabriel mountains on account of the channelized and fenced creek, the trail is lined with abundant native plants and does eventually spill out into the mountains.
The final design required implementing a new footpath to the roughly quarter mile of trail above the park proposal site, and the sports park. The footpath was added to create a buffer between cyclists and pedestrians for safety purposes. While the bike path remained in its original state, the footpath was included south of the biking section and was woven throughout native flora.

The corridor was ultimately created to benefit the fauna of the Claremont area through an intervention related to fencing. Along the northwestern section of the proposed park, as well as the northern fencing of the sports park, there was a permeable fence implemented. The swinging gate was included to denote the closing of the park at sunset. However, while humans were
prohibited from entering the park past hours, the fence allowed fauna, especially larger fauna to roam the large green space.

**Biophilic Design**

Along with an ecological corridor, biophilic design was integrated through a series of components in the park. Biophilic design provided a connection between humans and “nature” in the park. The theory was represented through a footbridge, playground, winding trails, seating, and vegetation use.

A bioswale was created to combat flooding and keep the water on-site to reduce the need for irrigation. The bioswale starts at the central northern section, right below the parking lot, to capture pollutants washing over the paved surface. The bioswale wound and swept along the eastern park edge, until transitioning west, where it exited a flooding channel at the southwest corner. Another section of bioswale existed at the central portion of the park, another low area. To emphasize the design element at hand, a footbridge was placed over the southern section of
the water capture mechanism, as shown above. The footbridge was winding, similar to the bioswale itself, eliciting a natural form and creating complexity and order, which is a biophilic design strategy falling under natural analogues. The bridge was also made of wood, a natural material, creating a material connection to “nature”, a biophilic element falling under the category of natural analogues, which are indirect relations to “nature”. The bridge also contained seating following the bends of the bridge. The seating provided a backdrop to view the mountains to the north and south, called prospect-refuge. The prospect was the view in the distance, while the refuge is the safety of the bench at one's back. The bioswale placed humans closer to “nature” through a connection to natural systems (water flow, plant growth), which is yet another biophilic design feature. Most clearly, an element shared in all the other sketches as well is a visual connection to “nature”. Visitors can see trees, shrubs, birds, and insects to name a few.
Contained in the sketch above are two more park elements that contain a few biophilic design elements. Starting at the left of the sketch, a park is present. The park is surrounded by a rock wall, which contains rocks from the mounds that were previously in the same location. The rock wall is accompanied by a curving wooden gate that matches the curvature of the path and rock wall. The site-specific rocks, and wooden door exhibit characteristics of material connection to nature through their appearance, as well as complexity and order through their varying shapes and sizes, but consistent curvature. In the playground itself are large mounds that are composed of recycled plastic. The mounds are not necessarily biophilic, but they allude to the piles of rubble that were present on the previous site, establishing a deeper sense of place. Meanwhile, on the right side of the sketch is a curving path that swerves through native flora. The composition of the path was consistent with the curvature throughout the rest of the park. More than that, the use of larger vegetation, paired with the winding path elicits a sense of mystery, or intrigue, which is a biophilic pattern. The mystery of the trails lures the park users deeper into different sections of the parcel.
The winding paths around the central green space are relayed above overhead. The main path sweeps into two separate seating areas. Each seating area is shrouded by vegetation eliciting a sense of mystery. Moreover, the hidden and protected composition of the seating areas creates a refuge for visitors.

The sketch above captures a southward view of the park. The bioswale is present in the background, relating that the image is being drawn from the central green area of the park. The main aspect of the piece is the bench that is nestled between vegetation and sitting beneath a tree. The seating arrangement again offered refuge or protection, but also prospect, as the bench overlooks the San Gabriel Mountains. Additionally, the seating area is designed with thermal air flow and variability as the main biophilic feature. The tree overhead provides shadow and shade for individuals in the seating area.

Native Planting Plan

The planting plan was constructed through the utilization of a zonal system. The plan was also broken up into two sections: La Puerta Park and the Thompson Creek Trail Ecological
Corridor. Four different plant sections were created based on the maximum height of selected native plants. The first was the green section, plants that were 0-3.5 feet tall, then the orange section, plants 3.6-8 feet tall, the red section, flora 8.1 feet and taller. The purple circles represented trees. The various colored sections were then assigned numbers that increased incrementally. The tables below highlight the plants that were selected for each zone based on sunlight needs. Native plants were selected through the Calscape plant database. The server listed plants native to Claremont, California, and provided information about individual plant needs, as well as the fauna that the plants support. I selected plants based on their benefits to biodiversity, color, and composition/architecture.

There were six objectives of the planting plan: right plant right place, initiating lines of sight, developing a sense of intrigue, shading for seating, use of endangered plants, and visitor safety. First, right plant right place refers to planting vegetation in spaces that fit their specific needs. Therefore, when planting, I accounted for elevations and depressions in the land, depressed areas would naturally receive more water, therefore I planted vegetation with higher water needs in those low-lying areas. Along the same lines, I planted vegetation in areas that fit their sunlight needs. Some required direct sunlight, while others appreciate more shaded areas. Moving on, lines of sight are present from virtually every entrance, exit, and seating area in La Puerta Park. Trees and large vegetation were used to push visitors' sight to a certain focal point, such as the mountains or trees. Meanwhile, the low vegetation was utilized to enable these lines of sight. Moving on, the sense of intrigue or mystery was accomplished in the planting plan through the architecture of certain plants. The zonal planting plan highlights that certain sections of the plan contain plants of low (0-3.5 ft), medium (3.6-8 ft), or high height (8.1 ft and taller). When winding around corners, higher vegetation was utilized to prevent the user from seeing a
focal point, creating a sense of intrigue at every turn. Shading for seating was especially necessary given the climate of Southern California. Each seating zone had a large tree either to the east, south, or west to shield the sun for at least one portion of the day. Following the information relating to lines of sight, an endangered plant was notably included around the site. Nevin’s Barberry was selected; the evergreen, flowering shrub was listed as endangered by the state in 1987, with a predicted 1,000 plants remaining (California Fish and Game, 2005). These reports were conducted in 2005, meaning the plant is likely to have continued declining in numbers at an even higher rate due to sprawl. The plant was included in the orange zone because it maximally reaches 7 feet tall, based on Calscape (Calscape, 2023). Lastly, visitor safety was highlighted by the planting plan around the playground, and throughout the ecological corridor. The playground, while surrounded by a stone wall, is also surrounded by low vegetation, to allow parents to see their children at all times in case of an incident. The ecological corridor only contained low and medium plants, enabling cyclists to see around bends as they move at high speeds.
La Puerta Park

*Green:*

<table>
<thead>
<tr>
<th>Zone 1</th>
<th>Purple Three Awn, California Blue Bell</th>
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<tbody>
<tr>
<td>Zone 2</td>
<td>California Fuscia, June Grass, California Blue Bell</td>
</tr>
<tr>
<td>Zone 3</td>
<td>Common Sun Rose, Purple Three Awn, Purple Needlegrass</td>
</tr>
<tr>
<td>Zone 4</td>
<td>Purple Needlegrass, California Poppy</td>
</tr>
<tr>
<td>Zone 5</td>
<td>Purple Needlegrass</td>
</tr>
<tr>
<td>Zone 6</td>
<td>Chalk Dudleya, June Grass (Shade)</td>
</tr>
<tr>
<td>Zone 7</td>
<td>June Grass</td>
</tr>
</tbody>
</table>
Orange:

<table>
<thead>
<tr>
<th>Zone</th>
<th>Plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone 1</td>
<td>California Buckwheat, California Sagebrush, Nevin’s Barberry</td>
</tr>
<tr>
<td>Zone 2</td>
<td>Black Sage, California Sagebrush, Narrow Leaf Milkweed</td>
</tr>
<tr>
<td>Zone 3</td>
<td>California Buckwheat, Hairy Yerba Santa, California Goldenrod</td>
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<tr>
<td>Zone 4</td>
<td>Foothill Penstemon, Silver Lupine</td>
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<td>Zone 5</td>
<td>Foothill Penstemon, Silver Lupine, Black Sage, California Buckwheat</td>
</tr>
<tr>
<td>Zone 6</td>
<td>California Goldenrod, Hairy Yerba Santa</td>
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<tr>
<td>Zone 7</td>
<td>Narrow Leaf Milkweed, Silver Lupine, Low Canyon Dudleya, California Buckwheat, California Goldenrod, California Sagebrush</td>
</tr>
<tr>
<td>Zone 8</td>
<td>Nevin’s Barberry</td>
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Red:

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<th>Plants</th>
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<td>Zone 2</td>
<td>Sugar Bush, Chamise</td>
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<td>Golden Currant, Toyon</td>
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<td>Zone 4</td>
<td>Golden Currant, Toyon</td>
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<tr>
<td>Zone 5</td>
<td>Lemonade Berry, Sugar Bush, White Sage</td>
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<tr>
<td>Zone 6</td>
<td>Laurel Sumac, Chamise, Chaparral Yucca, Hairy Ceanothus, Flannel Bush, Cobweb Thistle</td>
</tr>
</tbody>
</table>

Purple:
Ecological Corridor

*Green:*

<table>
<thead>
<tr>
<th>Zone 1</th>
<th>June Grass, Southern Tauschia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone 2</td>
<td>June Grass, Southern Tauschia</td>
</tr>
<tr>
<td>Zone 3</td>
<td>June Grass, California Phacelia</td>
</tr>
<tr>
<td>Zone 4</td>
<td>June Grass, Western Blue Flag, Spike Bentgrass</td>
</tr>
<tr>
<td>Zone 5</td>
<td>California Poppy, California Phacelia</td>
</tr>
<tr>
<td>Zone 6</td>
<td>June Grass, California Goldfields</td>
</tr>
<tr>
<td>Zone 7</td>
<td>June Grass, California Goldfields</td>
</tr>
</tbody>
</table>
**Orange:**

<table>
<thead>
<tr>
<th>Zone 1</th>
<th>Silver Lupine, Black Sage, Foothill Penstemon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone 2</td>
<td>Black Sage, California Goldenrod, California Buckwheat</td>
</tr>
<tr>
<td>Zone 3</td>
<td>Low Canyon Dudleya, Nevin’s Barberry, Foothill Penstemon</td>
</tr>
</tbody>
</table>

**Purple:**

![Image of vegetation and zones]

**Counter Argument**

The alternative to La Puerta Park was the Trumark housing development. The proposed plan exacerbated issues associated with sprawl. The housing conceptualization was well short of the housing need, impervious surfaces increased, and biodiversity was lost. La Puerta Park, on the other hand, developed a sense of community that revolved around an appreciation of “nature”. The vacant parcel presented an opportunity to heal the land rather than harm it.

**Conclusion**

The thesis project revealed that intertwining the theories of eco-corridors, biophilic design, and native planting could positively impact the health of an ecosystem and its users. My research underlined that a simple bike path could be reimagined as an ecological corridor, achieving a range of interconnection between fragmented spaces. Current research into habitat
corridors suggests passages that are miles long and wide. In an urban setting, such a path was nearly impossible. Therefore, the passage at hand, less than 400 yards in length, and 20 yards wide served as an unconventional example of how to reconnect greenery. By opening the northern section of the fence, the fauna was better suited to travel between green spaces safely and effectively. Meanwhile, the integration of biophilic design, as seen through the plans created, created a relaxing, and interesting place for humans and non-humans to inhabit. The incorporation of prospect, refuge, and visual connection to “nature”, just to name a few, established a hospitable park. The incorporation of native flora tied the park and the other design strategies together. The flora aided in the development of biophilic design elements. The plants were also the basis of the ecological corridor, developing a strip of native habitat for fauna. The La Puerta Park Plan demonstrates a superior alternative to the Trumark Housing proposal. The park provides a series of site improvements that would benefit humans and non-humans. Meanwhile, the Trumark Housing proposal carries a narrow lens, which continues degrading without regard for the flora and fauna capable of inhabiting the space. I hope to submit this to the city of Claremont and Trumark Housing in hopes of it being adopted instead of the housing development. The park provides a tax break incentive to Trumark Housing, as the land would be remediated and healed rather than built upon.
Bibliography


