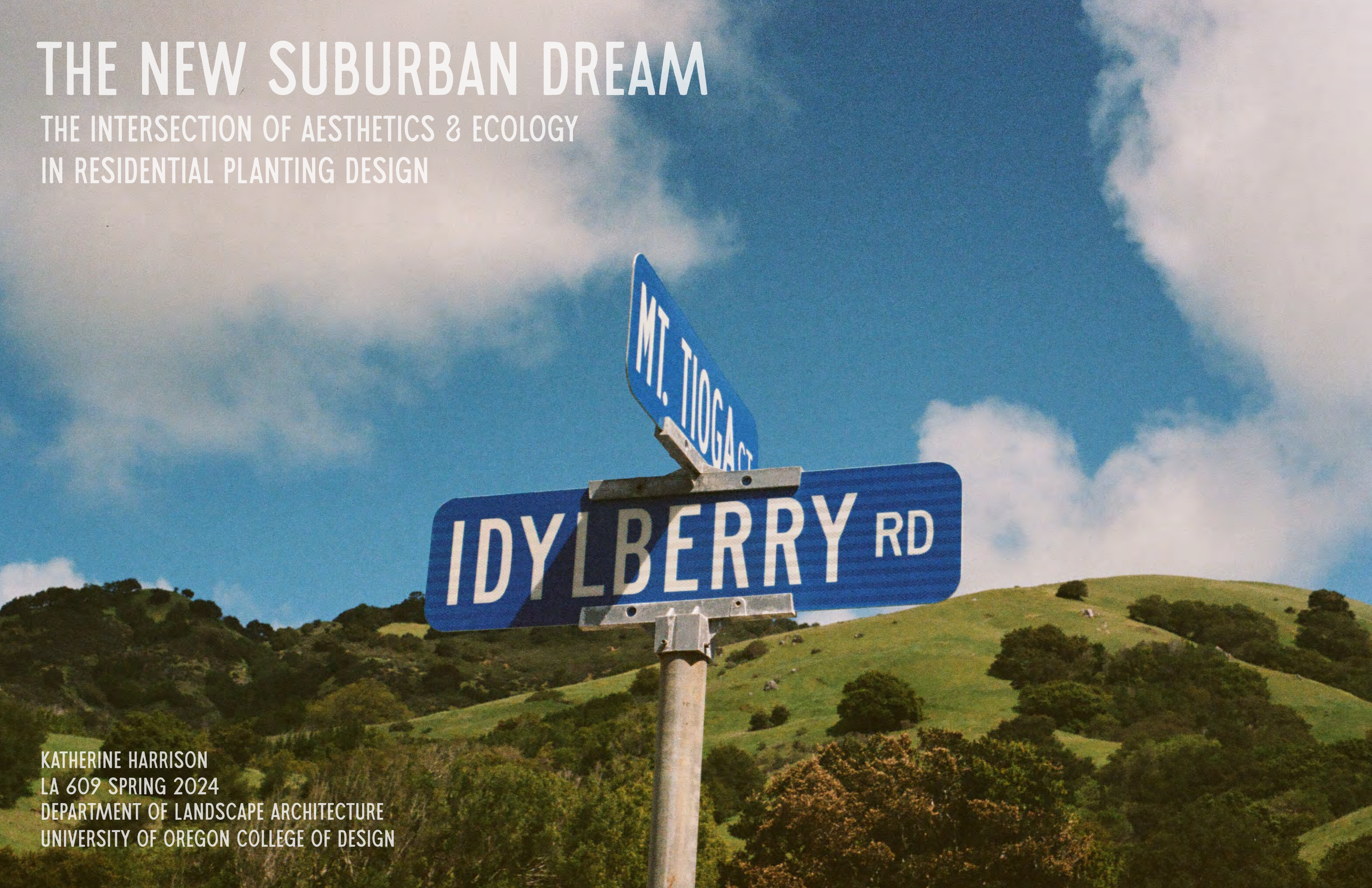
THE NEW SUBURBAN DREAM

THE INTERSECTION OF AESTHETICS & ECOLOGY IN RESIDENTIAL PLANTING DESIGN



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LA 609 SPRING 2024
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ABSTRACT

This project investigates the intersection of ecology and aesthetics in residential planting design, with the aim of developing a new suburban aesthetic that inspires homeowners to embrace ecological initiatives in their front yards. In particular, this project looks at planting design for the Lucas Valley Neighborhood in Marin County, California, which affords many unique opportunities for ecological connectivity at the neighborhood scale. Best practices for biodiversity, fire-smart landscapes, and water-wise landscapes are discussed and evaluated for synergies and trade-offs. Three unique planting plans are presented, each showcasing a different opportunity to be found in ecologically minded residential design initiatives.

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WELCOME TO THE SUBURBS

As we face the increasing threats of climate change – extreme weather events, prolonged drought, super-fires, and a global biodiversity crisis – we cannot afford to overlook the opportunities to be found in one of the most ubiquitous American landscapes.

Welcome to the Suburbs.

WELCOME TO THE SUBURBS

And where there are suburbs, there are lawns. A highly cited 2005 study conducted by NASA indicates that lawns (both residential and commercial) could be considered the single most irrigated crop in the United States (NASA, 2005). How did European turfgrasses — such as Kentucky Bluegrass — come to dominate the American landscape?

HISTORY OF THE LAWN

We can credit Jefferson and Washington for popularizing the European lawn as an American status symbol. To have a lawn was the ultimate flex – not only were you using vast swaths of land for something other than agriculture, indicating your wealth, they also required a high input of human labor to maintain (NYT, 2019).

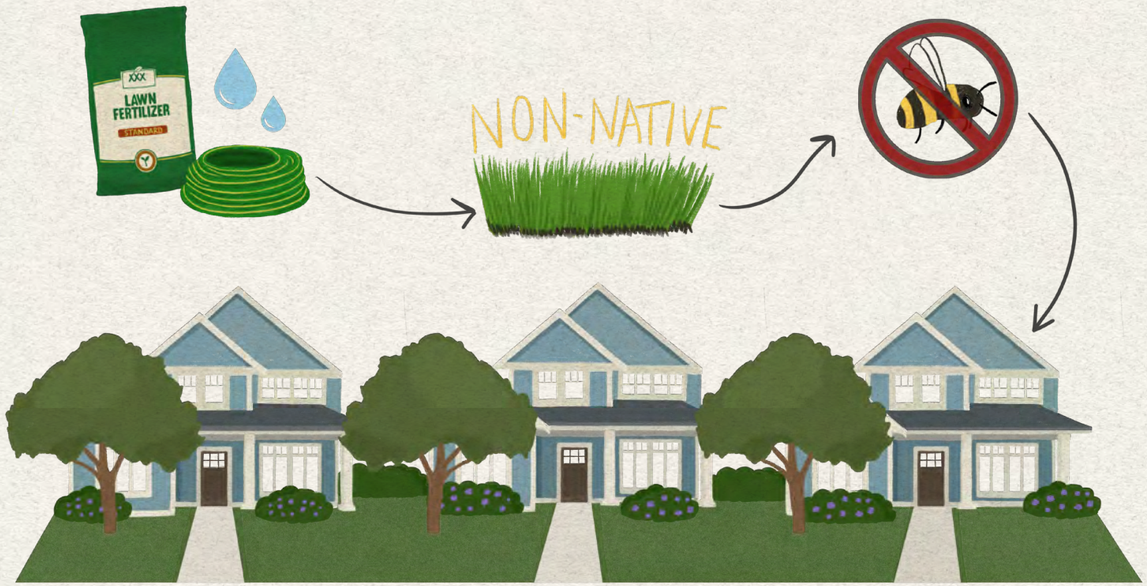
HISTORY OF THE LAWN

By the late 1800's the lawn care business was established – new technologies were emerging, and the lawn was embraced with open arms by the American culture of privilege – but it is the post WWII suburban boom that ushered in the era of "modern lawn care" that reigns supreme today (NYT, 2019).

ECOLOGICAL WASTELAND

The quintessential suburban landscape of a lawn, specimen tree, and a few foundation shrubs, often disregards regional needs, and thus conflicts with climate-resiliency goals. These conflicts include fertilization, irrigation practices, integration of non-native species, and habitat fragmentation (Turner et al., 2020).

It's a vicious cycle. Excessive fertilization and irrigation practices are often required to maintain exotic species, which in turn provide little to no regional habitat value, and result in homogenous suburban landscapes that lack character and resilience.

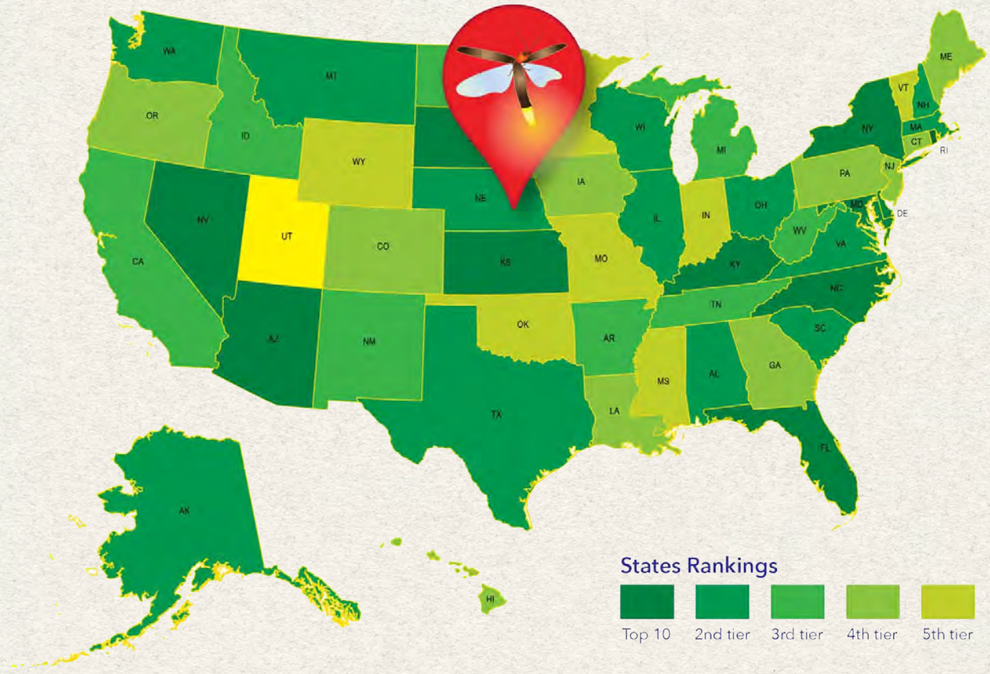


ECOLOGICAL OPPORTUNITY

But what if instead of relying on excessive fertilization and irrigation practices, we focused on planting climate-adapted species native to our ecoregion, increasing habitat value and local biodiversity, and resulting in neighborhoods with increased resilience and local character.

"HOMEGROWN NATIONAL PARK"

In his best-selling book Nature's Best Hope, published in 2019, author, entomologist, and ecologist Doug Tallamy encourages and empowers homeowners to invite ecological abundance into their yards by planting key species native to their region, supporting local wildlife and insect populations. Together, these residential landscapes form a greater tapestry that Tallamy has coined "The Homegrown National Park Movement."



THIS MAP SHOWCASES THE NUMBER OF HOMEOWNERS PER STATE THAT HAVE JOINED THE HOMEGROWN NATIONAL PARK MOVEMENT AS OF APRIL 2024. BY ALLOWING HOMEOWNERS TO REGISTER THEIR YARDS, THE HOMEGROWN NATIONAL PARK ORGANIZATION ENCOURAGES COLLECTIVE ACTION AMONG HOMEOWNERS. THIS MAP CAN BE FOUND ON THE HOMEGROWN NATIONAL PARK WEBSITE. (WWW.HOMEGROWNNATIONALPARK.ORG)

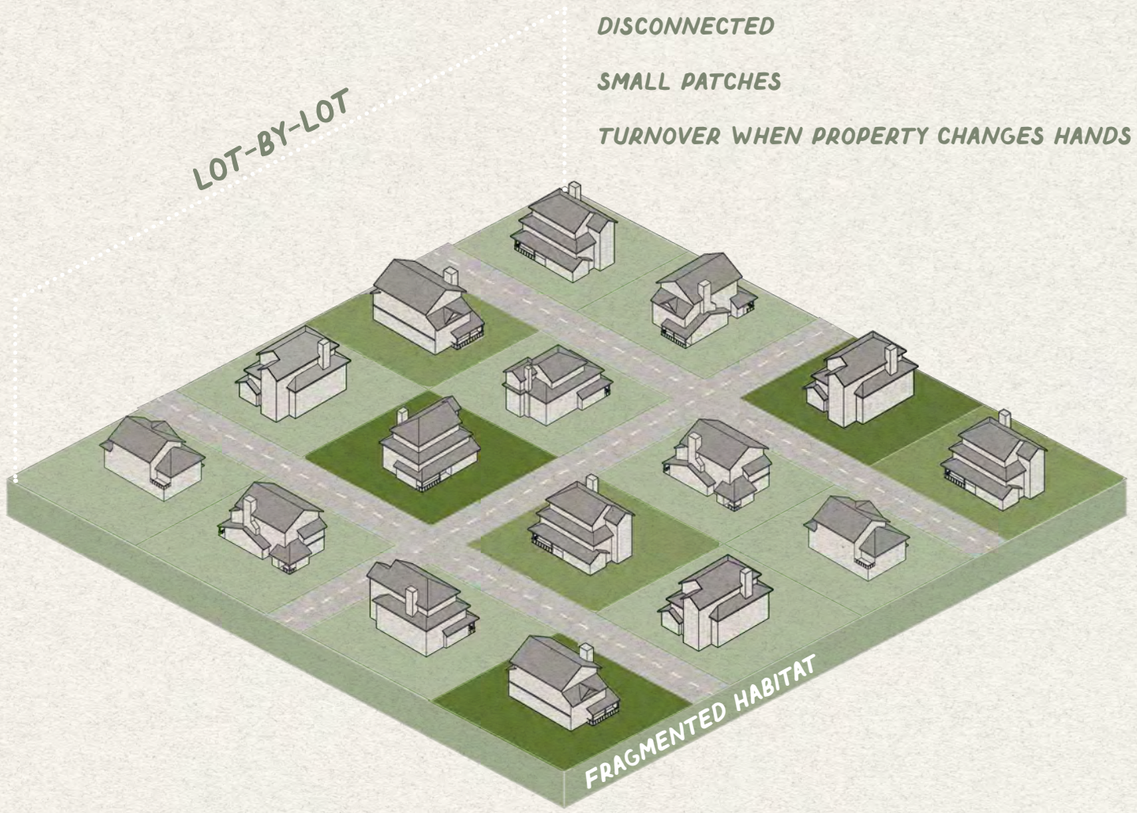
NEIGHBORHOOD SCALE CHANGE

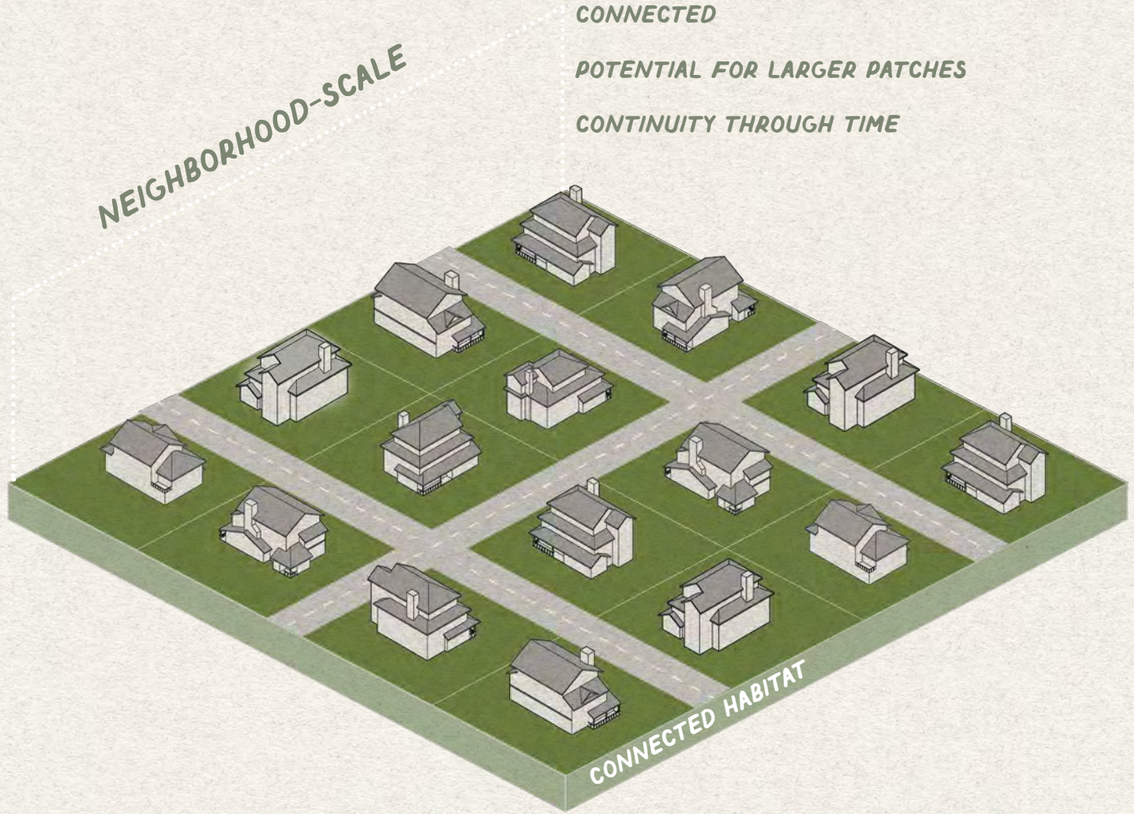
Research has suggested that these residential landscape interventions could be particularly effective at the neighborhood scale, where ecological benefits can be maximized, and cultural norms collectively challenged (Nassauer, 2009). One unique approach to this could be through Homeowner Associations, or HOA's. HOA's are private organizations, typically pertaining to a specific neighborhood, with a set of covenants, conditions, and restrictions that community members agree to (Chen, 2024). Conjuring up images of pristine lawns and nosey neighbors for many of us, these organizations may play a key role in dictating neighborhood-scale landscape requirements that shape residential ecology, or lack there-of.

HARNESSING THE HOA

But what if HOA's encouraged a different kind of landscape? In this regard, the structure of existing Home Owner Associations could offer opportunity – as utilizing HOA's to implement neighborhood-scale environmental goals could provide greater ecological benefits than parcel-by-parcel interventions (Turner et al., 2020).

If your neighbors are doing it, you may be more likely to as well.

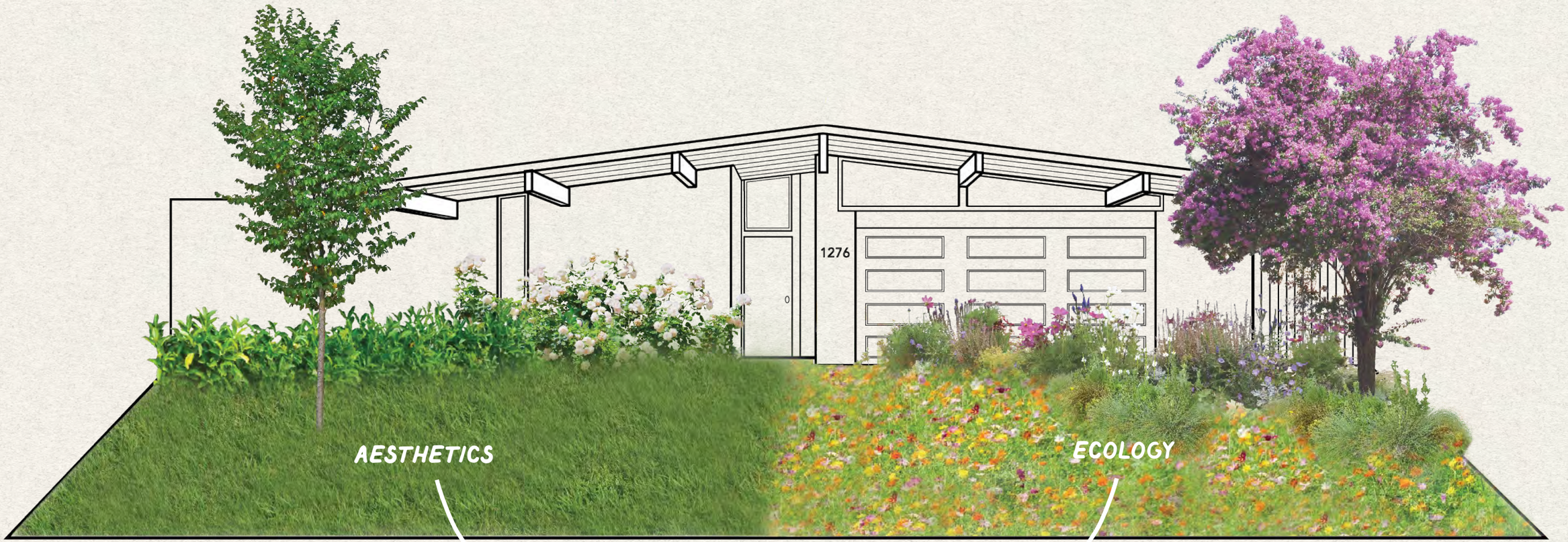




RESEARCH QUESTION

However, the idea of native plants as "messy" continues to dominate many people's perceptions, and is in contrast to the aims of most HOA's. And so the question emerges...

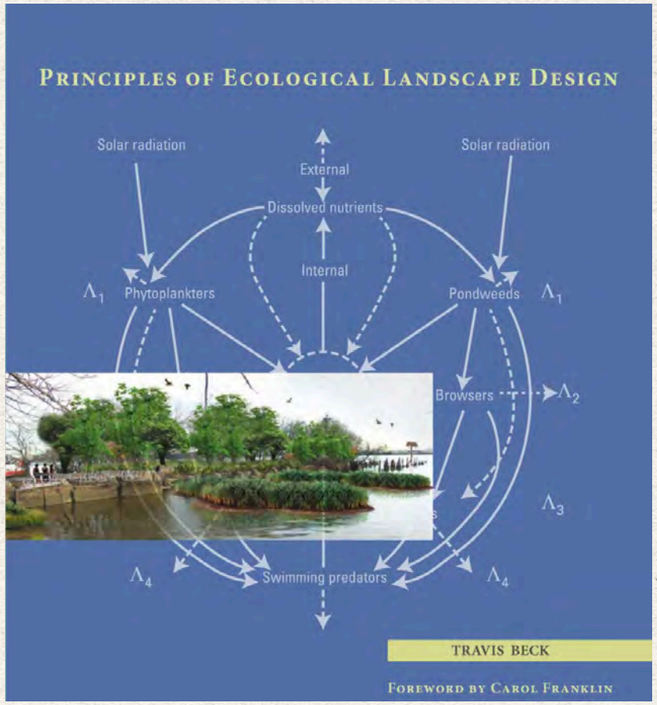
HOW CAN DESIGNERS HELP HOMEOWNERS MAXIMIZE ECOLOGICAL BENEFITS IN THEIR FRONT YARDS TO INCREASE NEIGHBORHOOD CLIMATE RESILIENCE – WHILE ALSO FULFILLING AESTHETIC NEEDS AND PREFERENCES?



PRINCIPLES OF ECOLOGICAL DESIGN

In Principles of Ecological Landscape Design, author Travis Beck writes:

"An ecological design may abut or include natural ecosystems, but above all they are human creations. An ecological design may incorporate restoration of degraded ecosystems, but it does not principally seek to put things back the way they were. Ecological landscape design is for the growing number of areas where there is no going back to the way things were. It aims instead to go forward, to apply our knowledge of nature to create high-performing landscapes in which our design goals and natural processes go hand in hand" (Beck, 2013, p.4).



Key principles as outlined by Beck include the use of designed plant communities that are adapted to local climate, and thus require less input to maintain, provide habitat for local wildlife, foster ecological connectivity, and have increased resiliency in the face of natural disasters.

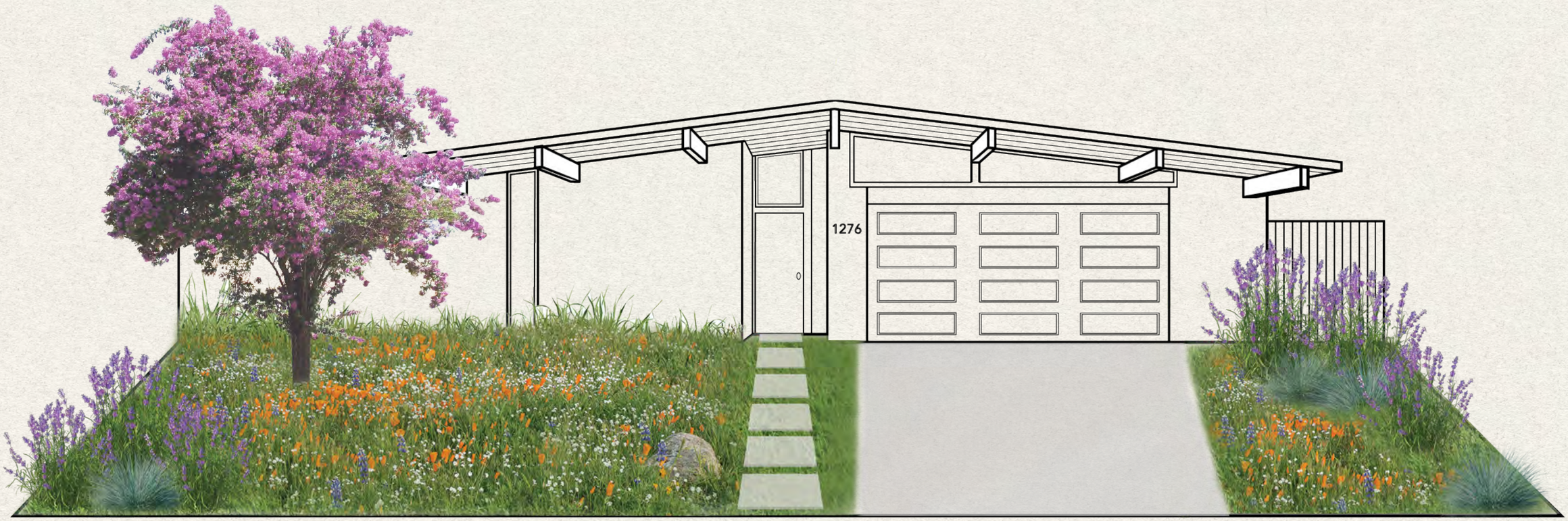
These communities do not need to be exclusively native plants – non-native species that are resilient to challenging conditions, such as inhospitable urban areas, may be appropriate.

These designed communities should incorporate ecologists' knowledge of plant population structures. Density and diversity (including varied size and structure) of the plant community is critical, and designs should include competitor, stress tolerator, and ruderal species, designing in a way that allows for self-thinning, and fosters competition between species. These principles are at odds with many of the approaches of conventional horticulture, where plants are often amply spaced and fertilized (Beck, 2013).

RECONCILING ECOLOGY & AESTHETICS

But are ecology and aesthetics really at odds? My literature review findings indicated that if we want to encourage successful adoption of ecologically minded residential design initiatives, we need to address cultural and aesthetic needs of homeowners. In this regard, ecology and aesthetics can inform each other to create environmentally and culturally sustainable designs. And in cases where aesthetic preferences undermine ecological goals, landscape designers and planners can utilize design as an intervention to better align divergent goals (Gobster et al., 2007).

One of the most cited approaches across the literature, and my subsequent research, was presented by Joan Nassauer in her work "Messy Ecosystems, Orderly Frames" (1995). Nassauer suggests that we can utilize what are known as "cues to care" in our landscapes – such as mown edges, pathways and seating – to embed a sense of human care and stewardship in landscapes that may otherwise be perceived as messy, and thus provide "unmistakable indications that the landscape is part of a larger intended pattern" (Nassauer, 1995, p.167).



DISCUSSIONS THROUGH TIME

This is just one approach – albeit foundational – to reconciling ecology and aesthetics, and opinions on the subject vary. In my literature review, I uncovered a spectrum of approaches – from utilizing existing aesthetic norms to make ecological design more accessible, to rethinking or challenging our aesthetic norms altogether.

1995

"MESSY ECOSYSTEMS, ORDERLY FRAMES"
JOAN NASSAUER

2007

"THE SHARED LANDSCAPE: WHAT DOES AESTHETICS HAVE TO DO WITH ECOLOGY?"
GOBSTER ET AL.

2008

"SUSTAINING BEAUTY. THE PERFORMANCE OF APPEARANCE: A MANIFESTO IN THREE PARTS"
ELIZABETH MEYER

2009

"WHAT WILL THE NEIGHBORS THINK? CULTURAL NORMS AND ECOLOGICAL DESIGN"
NASSAUER ET AL.

2016

"ECOSYSTEM SERVICES IN MANAGING RESIDENTIAL LANDSCAPES: PRIORITIES, VALUE DIMENSIONS, AND CROSS-REGIONAL PATTERNS"
LARSON ET AL.

2018

"ETHICS ≠ AESTHETICS"
MARC TREIB

2022

"A NEW AESTHETIC OF CARE"
PARKER SUTTON

"DIFFERENT JARGON, SAME GOALS: COLLABORATION BETWEEN LANDSCAPE ARCHITECTS AND ECOLOGISTS TO MAXIMIZE BIODIVERSITY IN URBAN LAWN CONVERSIONS"
KIERS ET AL.

DESIGN OPPORTUNITIES

The rising popularity of lawn conversions present an opportunity for the application and testing of "ecological theory at the site scale" and the promotion of "a collaborative urban ecological design aesthetic," ideally fostering communication between ecologists and landscape architects (Kiers et al., 2022, p.1).

One key synergy identified is in the shared ecological and aesthetic benefits of diverse planting mosaics (Kiers et al., 2022). Thus, the goals of landscape architects and ecologists need not be at odds, as "in both fields the function of an urban habitat should be defined not only by the native species that it can support, but also by the aesthetic and social benefit that can be derived" (Kiers et al., 2022, p.10).

This is especially important on the residential scale, where landscape architecture can influence aesthetics and homeowner behavior to encourage lawn conversions and the adoption of alternative landscapes (Kiers et al., 2022).

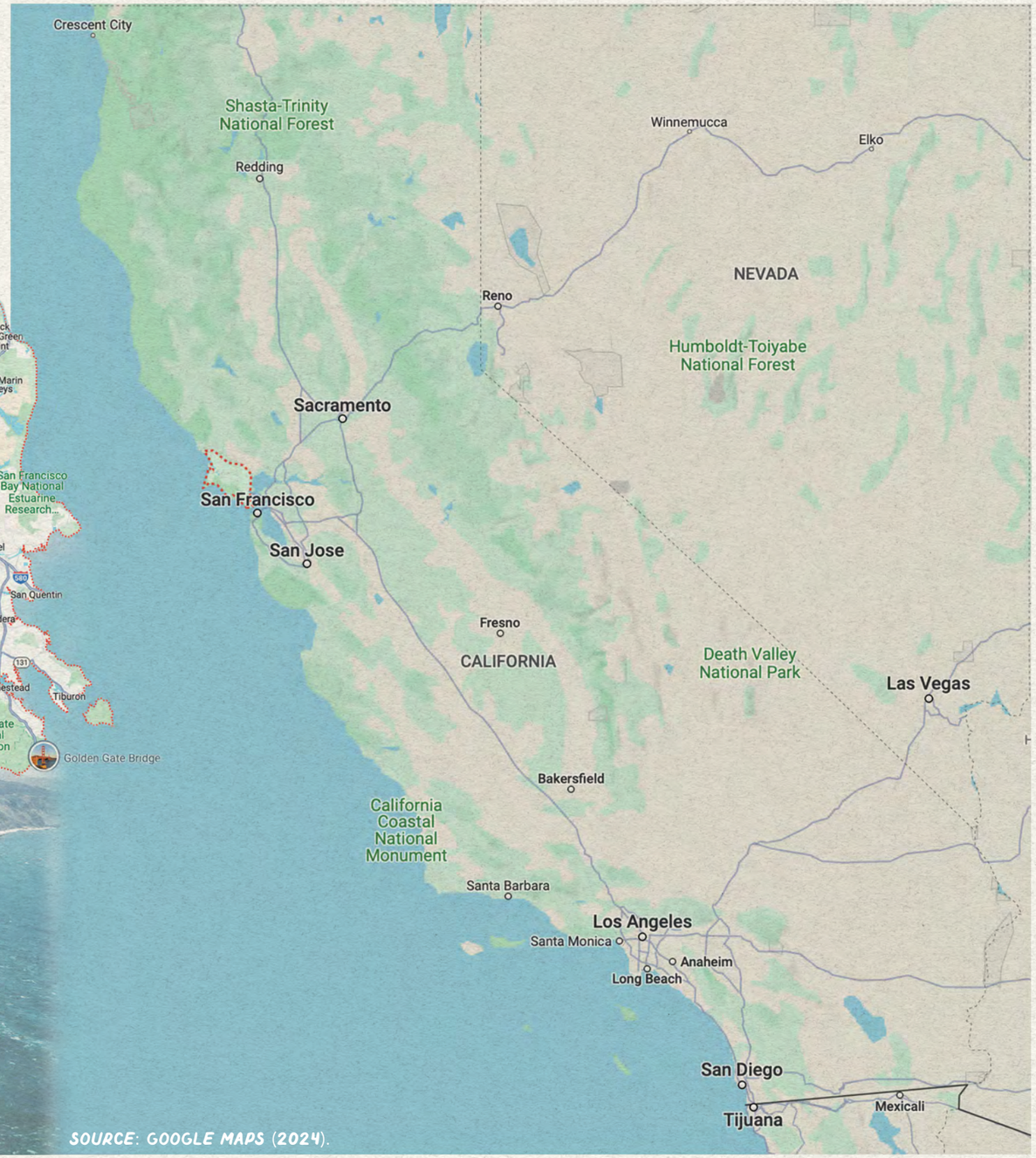
PROJECT GOALS

In this project, I hope to explore a new suburban aesthetic that inspires homeowners to embrace ecological design initiatives.

MARIN COUNTY, CALIFORNIA

I've chosen to explore these issues within the context of Marin County, California, which affords its own unique opportunities for ecological landscape design at the residential scale.

PHOTO: MARTEN VAN DEN HEUVEL (2017) UNSPLASH.



SOURCE: GOOGLE MAPS (2024).

MARIN COUNTY, CALIFORNIA

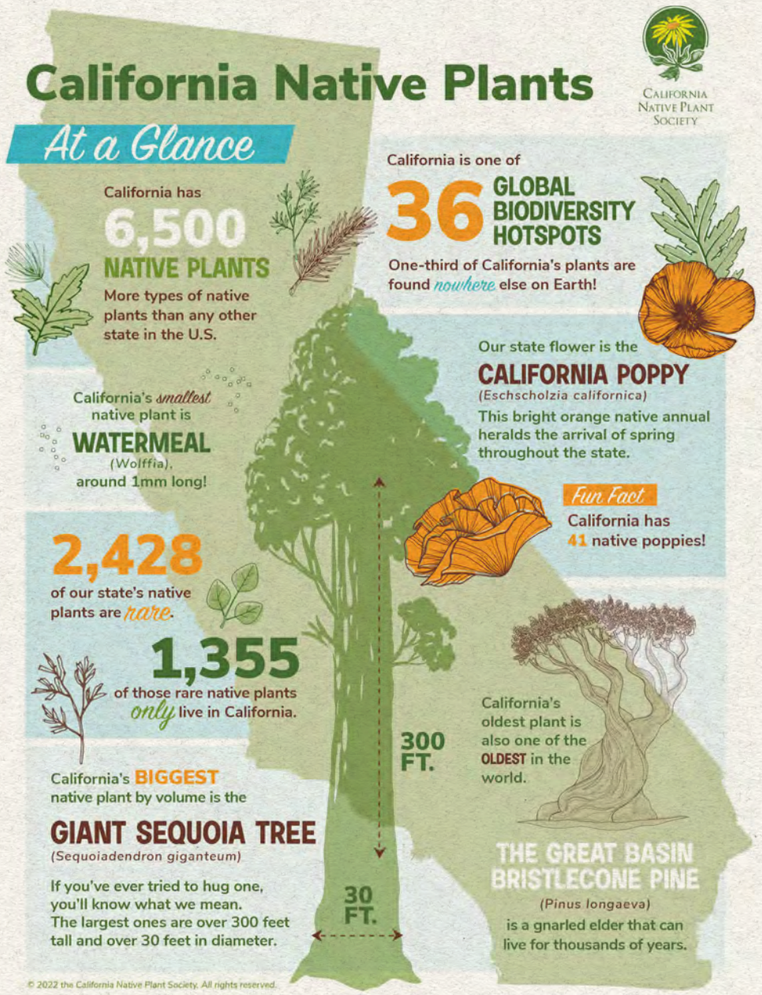
Located just north of San Francisco, Marin County spans a diversity of rich ecosystems including open grasslands, redwood forests, coastal wetlands, and striking coastal bluffs, encompassing 195,000 acres of protected open space (Marin County Vegetation and Land Cover Data, 2022).

As Marin County is predominantly suburban, single-family detached homes, many of which have yards that abut open spaces or public hiking trails, there is ample opportunity to integrate ecological design for biodiversity at both the residential and neighborhood scale, ideally increasing habitat connectivity across communities.

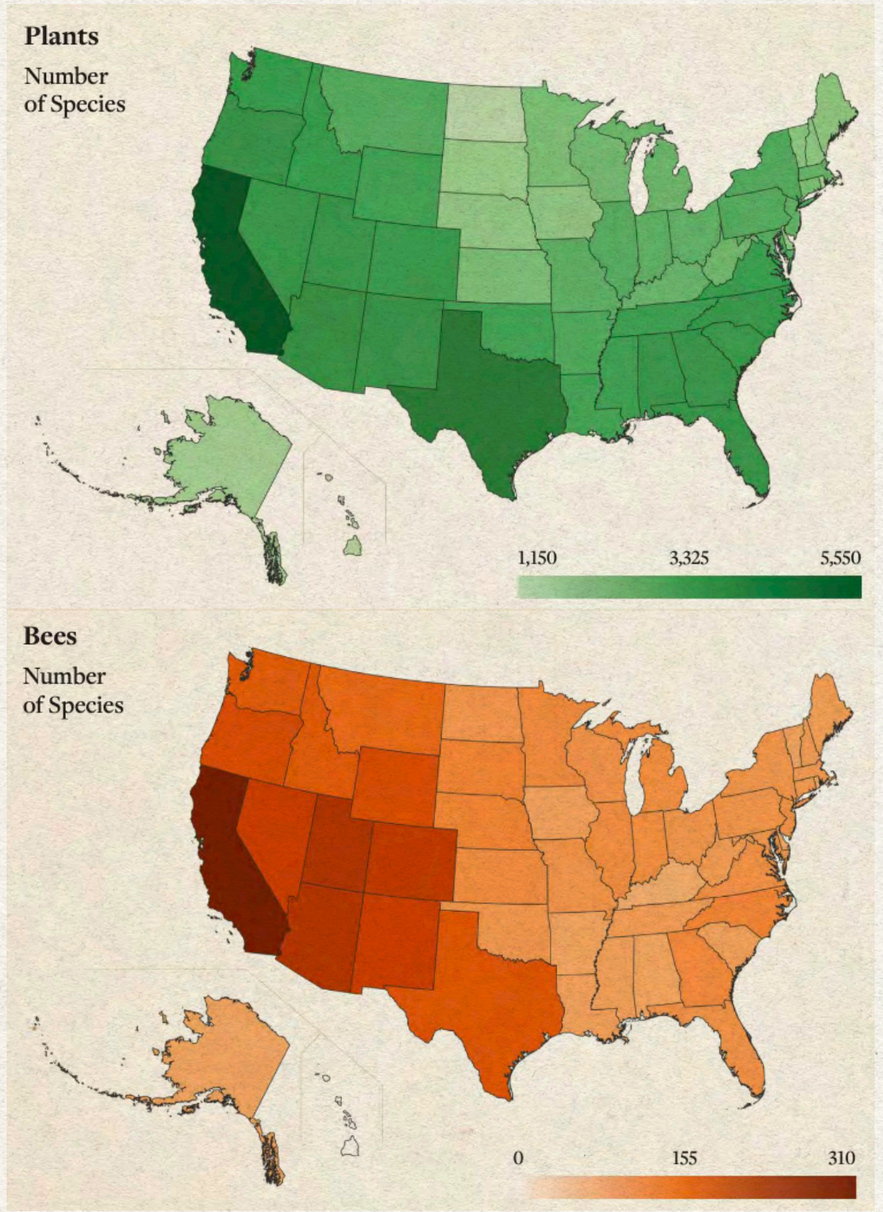
ILLUSTRATED MAP ADAPTED FROM MARIN COUNTY OPEN SPACE DISTRICT PRESERVES MAP (MARIN COUNTY DEPARTMENT OF PARKS AND OPEN SPACE)

CALIFORNIA'S BIODIVERSITY

In many ways, the diversity of Marin ecosystems feels like a microcosm of California as a whole. Considered one of 36 global biodiversity hotspots, California is the most biodiverse state in the U.S, with nearly one-third of native flora classified as endemic (O'Keeffe, 2023a).



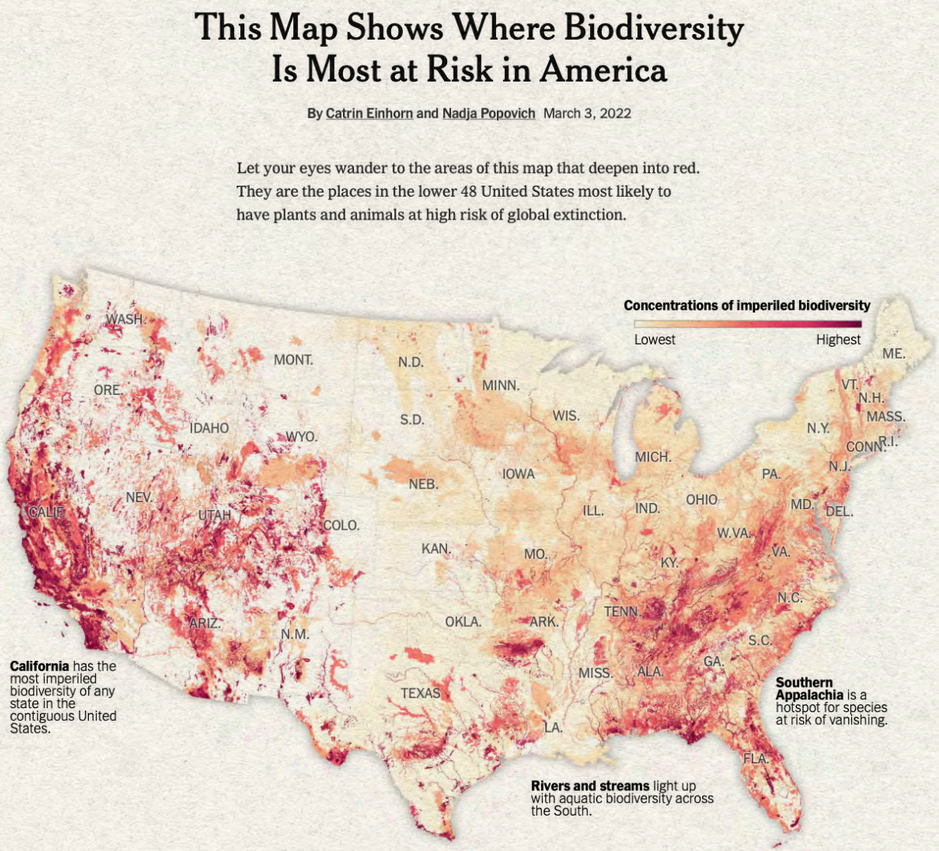
SOURCE: CALIFORNIA NATIVE PLANT SOCIETY, 2022



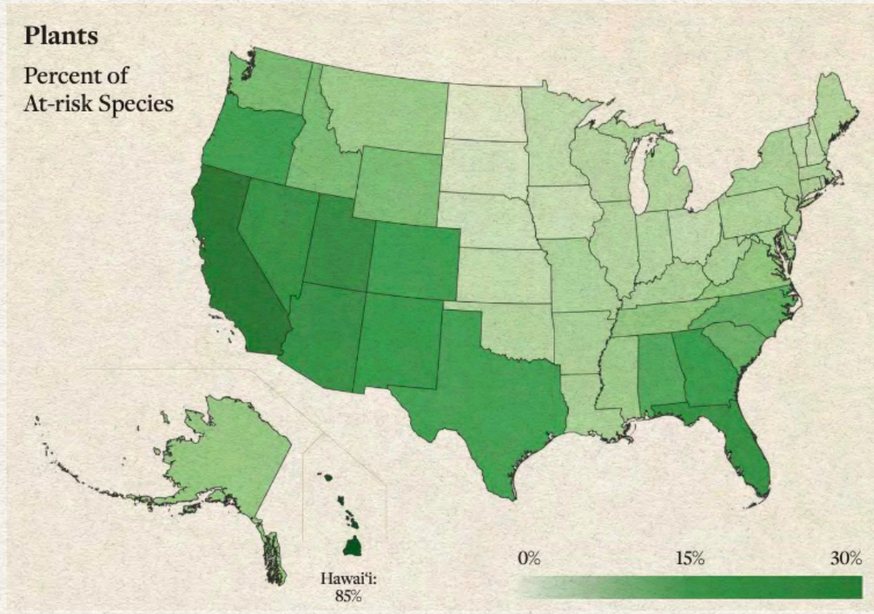
SOURCE: NATURESERVE, 2023. BIODIVERSITY IN FOCUS: UNITED STATES EDITION

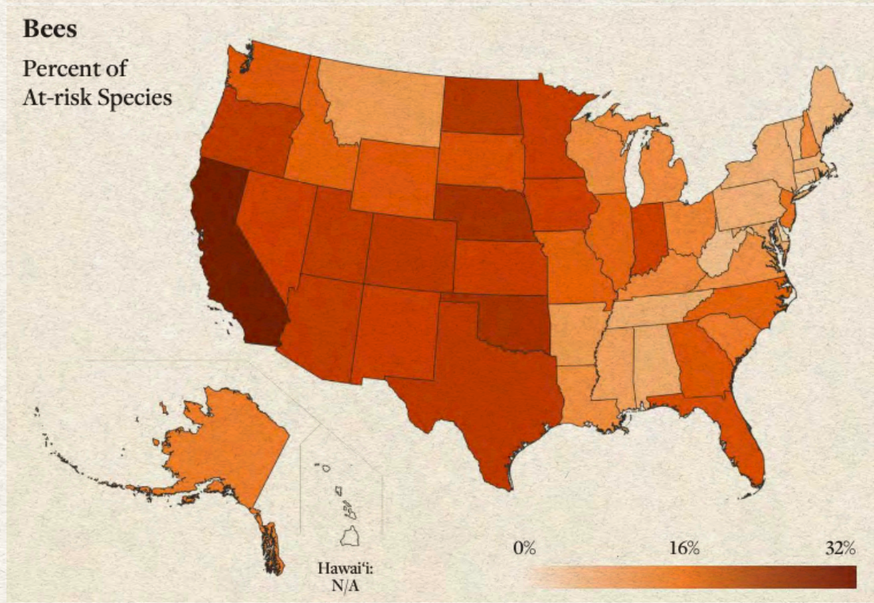
CALIFORNIA'S BIODIVERSITY

With this great abundance comes great risk. California is classified as one of three U.S regions facing the highest risk of species extinction, with native bee populations at greatest risk, followed by native flora (O'Keeffe, 2023b). In fact, 30% of native California species are facing threats of extinction – and climate change is anticipated to shrink the range of our endemic species up to 80% (Marin Master Gardeners).



SOURCE: THE NEW YORK TIMES, 2022





SOURCE: NATURESERVE, 2023. BIODIVERSITY IN FOCUS: UNITED STATES EDITION

COMMUNITY GOALS & LOCAL RESOURCES

In the last decade, many residents in Marin (and across drought stricken regions) have opted to remove their lawns in favor of drought tolerant landscaping, encouraged by the HERO Property Assessed Clean Energy (PACE) program, which "enables homeowners to make energy and water efficiency improvements and pay for them over time through their property tax bill" in correlation with the state's aim to reduce urban water consumption by 20% (PR Newswire, 2015).

Fire safety concerns have also sparked substantial residential landscape changes in Marin in recent years. In 2020, residents voted to create the Marin Wildfire Prevention Authority (MWPA), which has since created 4,000 acres of shaded fuel breaks within the Wildland Urban Interface, cleared 1000 miles of evacuation routes, and has evaluated upwards of 50,000 properties to aid homeowners in creating Fire Smart landscapes (FireSafe Marin, 2023).

These key local organizations such as FireSafe Marin (funded by the MWPA), Marin Water, and the Marin Master Gardeners' Chapter, are advocating for the adoption of climate resilient landscape practices through community education and awareness.

THE GROWING IMPETUS FOR RESIDENTS TO SHIFT THEIR LANDSCAPES IN FAVOR OF BIODIVERSE, FIRE-SMART, & WATER-WISE YARDS PRESENTS A NEW OPPORTUNITY FOR THOUGHTFUL AND LASTING RESIDENTIAL LANDSCAPE CHANGES CATERED TO THE REGIONAL NEEDS OF MARIN COUNTY, PARTICULARLY AT THE COMMUNITY SCALE.

FIRE SAFE MARIN
Adapting to Wildfire

UC Marin Master Gardeners

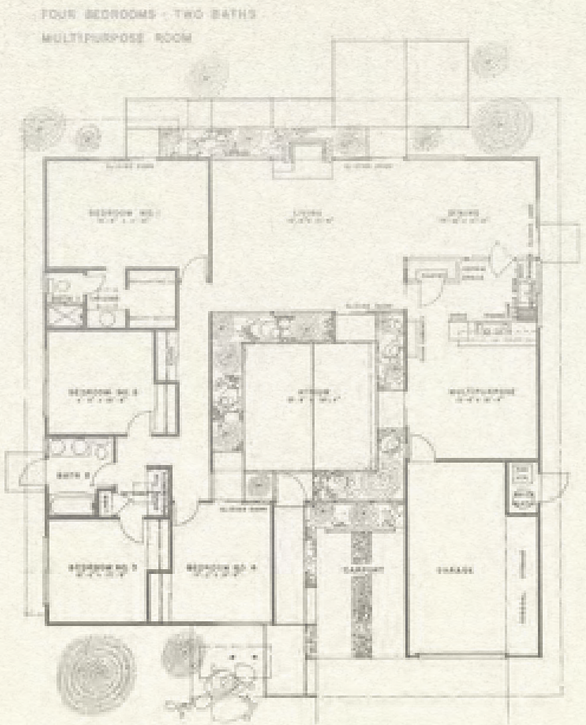
MARIN WATER

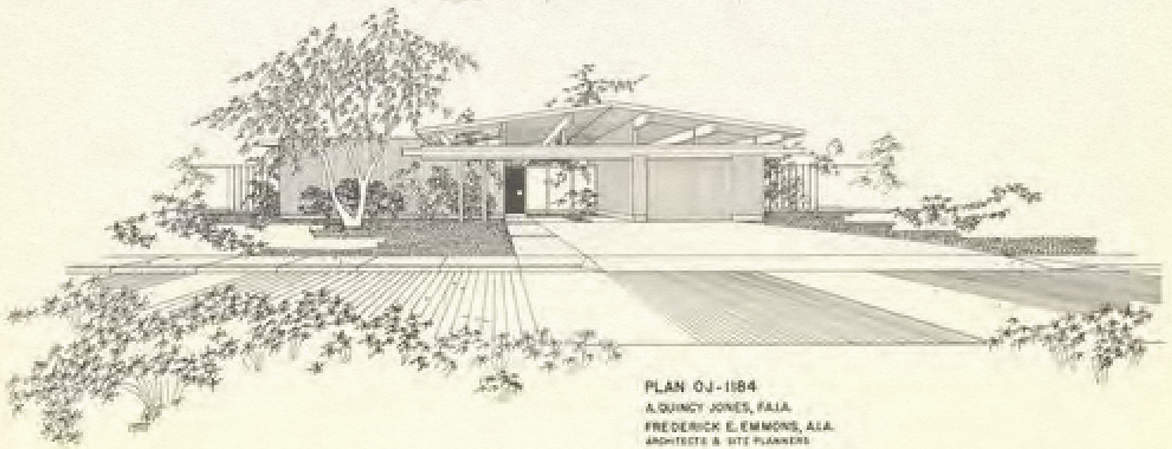
LUCAS VALLEY NEIGHBORHOOD

The Lucas Valley neighborhood in San Rafael already has a distinct and well-preserved architectural cohesion, as it is one of the most idyllic Joseph Eichler developments found in California. This community is beloved by residents for its location, nestled within the valley. All utilities are underground, providing unobstructed views and a distinct feeling of both spaciousness and a tranquil safety.

LUCAS VALLEY NEIGHBORHOOD

These developments of suburban tract homes have been coined “California Modern,” and have seen a resurgence in popularity in recent years. They are single story homes, featuring post and beam construction, often central atriums, or courtyards, and typify an indoor/outdoor living experience.





PLAN OJ-1184

A QUINCY JONES, FAIA.

FREDERICK E. EMMONS, AIA.

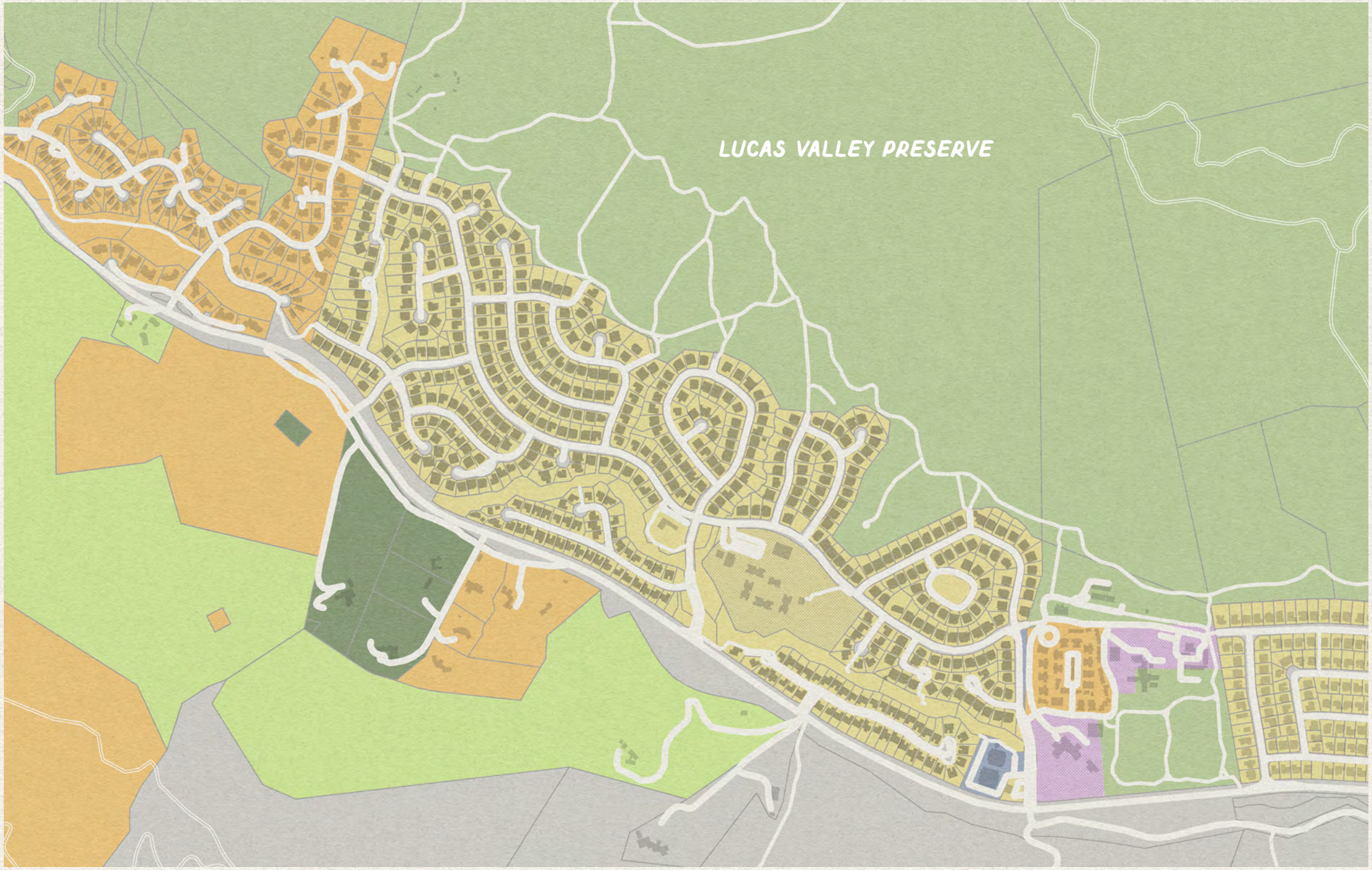
ARCHITECTS & SITE PLANNERS

AREA ANALYSIS

LIVING AREA	[illegible] square feet
GARAGE	285 square feet
CARPORT	215 square feet
TOTAL	[illegible] square feet

LUCAS VALLEY NEIGHBORHOOD

ZONING



DATA SOURCE: COUNTY OF MARIN, SONOMA COUNTY, BUREAU OF LAND MANAGEMENT, ESRI, HERE, GARMIN, INCREMENT P, USGS, METI/NASA, EPA, USDA | MARIN COUNTY COMMUNITY DEVELOPMENT AGENCY, MARIN COUNTY ASSESSOR OFFICE | GOLDEN GATE NATIONAL PARKS CONSERVANCY, COUNTY OF MARIN, NV5 GEOSPATIAL (NV5)

The Upper Lucas Valley Neighborhood is residential single-family zoning. Early on, this community established a HOA and worked to purchase the surrounding open space to prevent further development. The zoned open space is one of the biggest amenities of the neighborhoods. There is an elementary school in the middle of the neighborhood, as well as an elderly home to the east. One local restaurant caters to the neighborhood, as well as tourists driving through to reach Nicasio and Pt. Reyes.

LUCAS VALLEY NEIGHBORHOOD

WATERSHED & SOILS

The Lucas Valley neighborhood falls within the Miller Creek Watershed. Miller Creek itself is a primarily perennial creek that spans the entire neighborhood, and flows into the San Pablo Bay. There are both perennial, seasonal, and ephemeral channels throughout the watershed. Miller Creek is known to support steelhead trout (North Watershed Association, 2008).

MILLER CREEK
FLOWLINE
WBD LINE
WATERBODY

DATA SOURCE: ARCGIS ONLINE | COUNTY OF MARIN, BUREAU OF LAND MANAGEMENT, ESRI, HERE, GARMIN, INCREMENT P, USGS, METI/NASA, EPA, USDA | GOLDEN GATE NATIONAL PARKS CONSERVANCY, COUNTY OF MARIN, NV5 GEOSPATIAL (NV5)

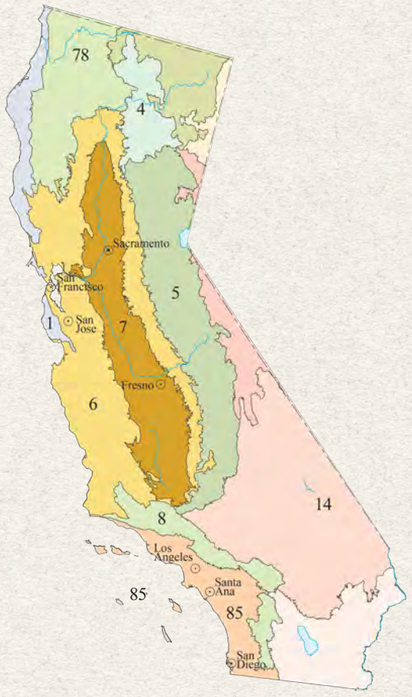
The residential landscape of Lucas Valley is classified as having urban land soils. Urban soils vary from relatively unchanged "native" soils to highly altered and impacted soils. Factors that may impact urban soils include the specific land use and disturbance, geography and geology, the extent of impervious surfaces, and the nature of "fill" materials (USDA, 2019). In general, homeowners in Marin county often struggle with clay soils in their gardens, and this is likely the case in Lucas Valley as well.

XERORTHENTS-URBAN LAND COMPLEX
BLUCHER-COLE COMPLEX
TOCALOMA-SAURIN ASSOCIATION
TOCALOMA-MCMULLIN COMPLEX
SAURIN-BONNYDOON COMPLEX
LOS OSLOS-BONNYDOON COMPLEX

DATA SOURCE: ARCGIS ONLINE | COUNTY OF MARIN, BUREAU OF LAND MANAGEMENT, ESRI, HERE, GARMIN, INCREMENT P, USGS, METI/NASA, EPA, USDA

LEVEL III ECOREGION

According to the Level III Ecoregion Map published by the EPA and USGS, Lucas Valley falls within the Central California Foothills and Coastal Mountains Ecoregion, which is defined by its Mediterranean climate of hot, dry summers, and cool, moist winters.

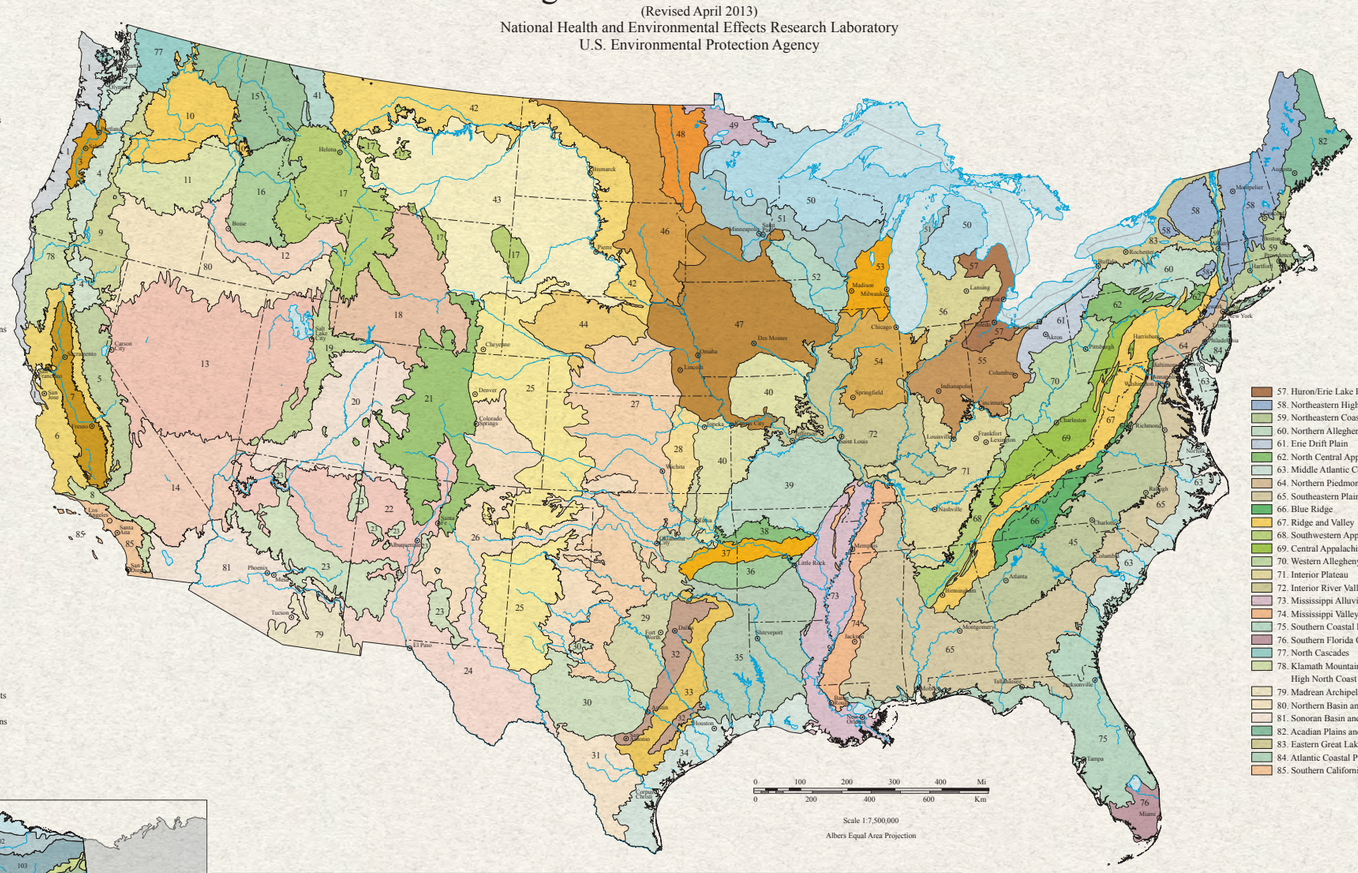


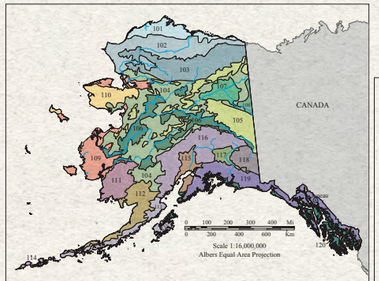
6. CENTRAL CALIFORNIA FOOTHILLS AND COASTAL MOUNTAINS

The primary distinguishing characteristic of this ecoregion is its Mediterranean climate of hot dry summers and cool moist winters, and associated vegetative cover comprising primarily chaparral and oak woodlands; grasslands occur in some low elevations and patches of pine are found at high elevations. Surrounding the lower and flatter Central California Valley (7), most of the region consists of open low mountains or foothills, but there are some areas of irregular plains and some narrow valleys. Large areas are rancland and are grazed by domestic livestock. Relatively little land has been cultivated, although some valleys are major agricultural centers such as the Salinas Valley or the wine vineyard centers of Napa and Sonoma Valleys. Natural vegetation includes coast live oak woodlands, Coulter pine, and unique native stands of Monterey pine in the west, and blue oak, black oak, and grey pine woodlands in the east.

Level III Ecoregions of the Continental United States

(Revised April 2013)
National Health and Environmental Effects Research Laboratory
U.S. Environmental Protection Agency





Ecoregions are areas where ecosystems (and the type, quality, and quantity of environmental resources) are generally similar. This ecoregion framework is derived from Omernik (1987) and from mapping done in collaboration with U.S. EPA regional offices, other Federal agencies, state resource management agencies, and neighboring North American countries (Omernik and Griffith 2014). Designed to serve as a spatial framework for the research, assessment, and monitoring of ecosystems and ecosystem components, ecoregions denote areas of similarity in the mosaic of biotic, abiotic, terrestrial, and aquatic ecosystem components, with humans considered as part of the biota. These ecoregions have been used to develop regional biological criteria and water quality standards, set management goals for nonpoint source pollution, assess land cover trends, report on ecosystem carbon sequestration, and frame wildlife conservation research, among other applications.

Ecological regions can be identified by analyzing the patterns and composition of biotic and abiotic phenomena that affect or reflect differences in ecosystem quality and integrity (Omernik 1987, 1995). These phenomena include geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology. The relative importance of each characteristic varies from one ecological region to another regardless of the hierarchical level. A Roman numeral classification scheme has been adopted for different levels of ecological regions. Level I is the coarsest level, dividing North America into 15 ecological regions; at Level II the continent is subdivided into 50 classes (CEC 1997, 2006). Level III, shown here, has 105 ecoregions in the continental U.S. For the conterminous United States, the ecoregions have been further subdivided to 967 Level IV ecoregions. Details about the ecoregions or their applications are explained in reports and publications from the state and regional projects (e.g., Bryce et al., 1998, 2003; Chapman et al., 2001, 2006; Gallant et al., 1989, 1995; Griffith et al., 2004, 2009, 2014; McGrath et al., 2002; Omernik, 2004; Omernik et al., 2000; Thorson et al., 2003; Wiken et al., 2011; and Woods et al., 1996, 2002, 2004). For additional information, contact James M. Omernik, USGS, c/o U.S. EPA, 200 SW 35th Street, Corvallis, OR 97333, phone (541) 754-4458, email omernik.james@epa.gov, or Glenn Griffith, USGS, c/o US EPA, 200 SW 35th Street, Corvallis, OR 97333, phone (541) 754-4465, email ggriffith@usgs.gov.

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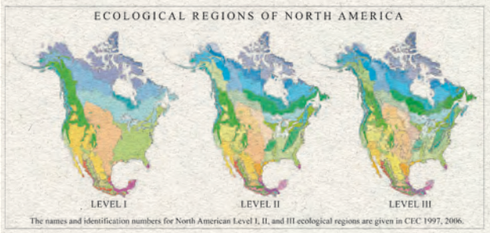

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CITING THIS MAP: U.S. Environmental Protection Agency, 2013, Level III ecoregions of the continental United States: Corvallis, Oregon, U.S. EPA – National Health and Environmental Effects Research Laboratory, map scale 1:7,500,000, https://www.epa.gov/eco-research/level-iii-and-iv-ecoregions-continental-united-states.

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LEVEL IV ECOREGION

At a more granular level, Lucas Valley sits within the Marin Hills Level IV Ecoregion, which is classified as the mountains and hills between the San Francisco Bay and San Andreas Fault, with vegetation such as coast live oak, annual grasslands, coastal scrub, tan-oak and Douglas-fir.

6o The **Marin Hills** ecoregion consists of mountains and hills between San Francisco Bay and the San Andreas Fault. Soil temperature regimes are mostly mesic and thermic, with some isomesic. Soil moisture regimes are mostly xeric. Vegetation is mostly coast live oak, annual grasslands, coastal scrub, and some tanoak and Douglas-fir. Ecoregion 6o has less relief and coniferous forest than Ecoregion 1k. Most of the smaller streams are dry by the end of the summer.

SOURCE: GRIFFITH, G.E., OMERNIK, J.M., SMITH, D.W., COOK, T.D., TALLYN, E., MOSELEY, K., AND JOHNSON, C.B., 2016, ECOREGIONS OF CALIFORNIA (POSTER): U.S. GEOLOGICAL SURVEY OPEN-FILE REPORT 2016–1021, WITH MAP, SCALE 1:1,100,000, HTTP://DX.DOI.ORG/10.3133/OFR20161021.

LUCAS VALLEY NEIGHBORHOOD

PLANT CLASSIFICATIONS

The local ecology in the Lucas Valley neighborhood is a microcosm of California's remarkable diversity and beauty. The open space that abuts the northern side of the neighborhood is primarily annual grassland, coastal oak woodland, montane hardwood, and a bit of coastal scrub and mixed chaparral.

CALIFORNIA WILDLIFE HABITAT RELATIONSHIP (CWHR) TYPE

- ANNUAL GRASSLAND
- COASTAL OAK WOODLAND
- MONTANE HARDWOOD
- COASTAL SCRUB
- MIXED CHAPARRAL
- VALLEY FOOTHILL RIPARIAN
- URBAN
- DOUGLAS FIR

DATA SOURCE: ARCGIS ONLINE | COUNTY OF MARIN, BUREAU OF LAND MANAGEMENT, ESRI, HERE, GARMIN, INCREMENT P, USGS, METI/NASA, EPA, USDA COUNTY OF MARIN, SONOMA COUNTY, BUREAU OF LAND MANAGEMENT, ESRI, HERE, GARMIN,

↑N

0' 500' 1000'

LUCAS VALLEY PRESERVE

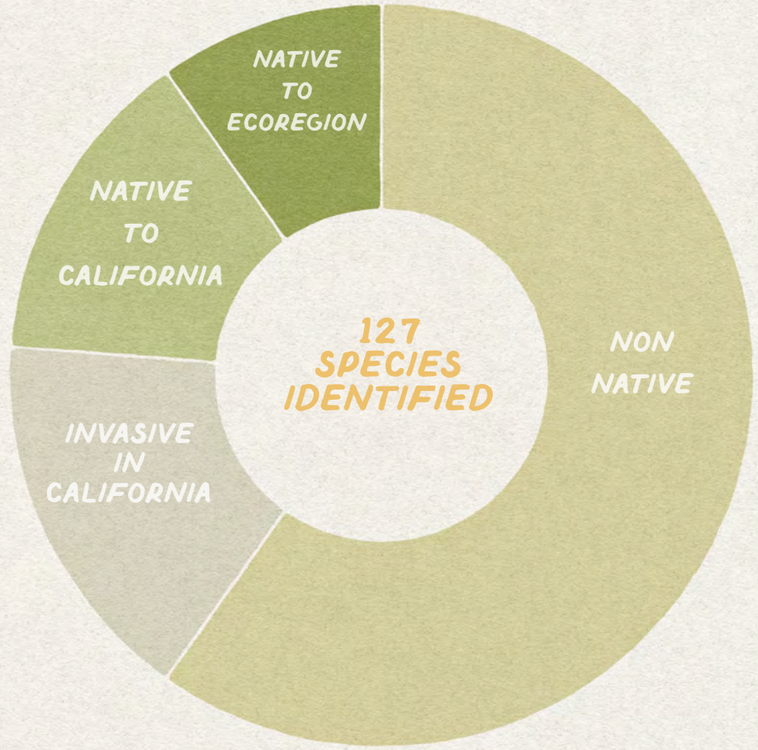
This presents a unique opportunity for homeowners to create ecological connectivity on their properties with the surrounding open space habitat.

CURRENT AESTHETIC TRENDS

Through walking the neighborhood, I was able to identify 127 different species of plants in homeowner's landscapes. The most dominant species were non-native to California, with varying habitat value. Many of these plants are familiar horticultural varieties. Plants native to California and more particularly the Marin Hills Ecoregion make up the second largest category, followed closely by species classified as invasive in the region.

A. MUGO PINE
B. CHINESE FRINGE FLOWER
C. CREEPING JUNIPER
D. JAPANESE EUONYMUS
E. ROCKSPRAY COTONEASTER
F. GLOSSY PRIVET
G. TRAILING LANTANA
H. LILY OF THE NILE
I. NEW ZEALAND FLAX
J. BLUE FESCUE
K. RUSSIAN SAGE
L. BABY SAGE
M. CEANOTHUS
N. KINNIKINNIK
O. CALIFORNIA POPPY
Q. CALIFORNIA FUSCHIA
R. COMMON YARROW
S. RED YUCCA
T. FOXTAIL AGAVE
U. PARRYI AGAVE

PLANT COMMUNITIES



TRADITIONAL HORTICULTURE ←

→ CONTEMPORARY XERISCAPE

CURRENT AESTHETIC TRENDS

LUCAS VALLEY TYPOLOGY

From my observations, I identified three key aesthetic types that are most prevalent in the neighborhood. These types are based on my own observations and classifications. There is of course a spectrum of landscapes in the neighborhood, but this typology represents the most prominent trends I observed.

A. TRADITIONAL SUBURBAN

B. CONTEMPORARY XERISCAPE

C. MID-CENTURY MODERN MEMORY

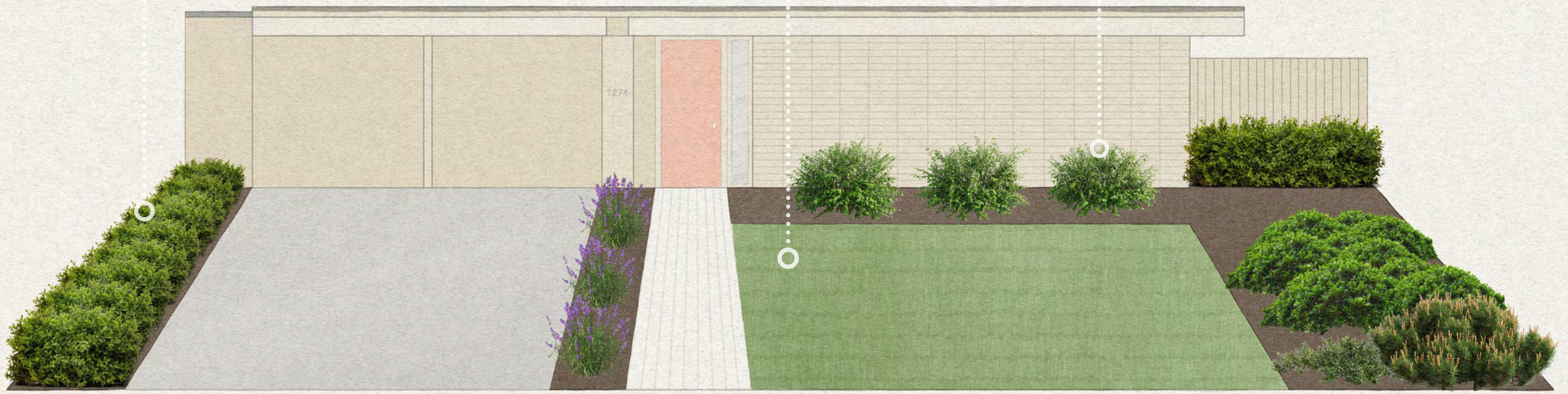
TRADITIONAL HORTICULTURE ←

→ CONTEMPORARY XERISCAPE

TRADITIONAL SUBURBAN

TYPE A.

The traditional suburban yard features a lawn, or in some cases, gravel or mulch (or even bare soil) where a lawn once was. There are typically screening shrubs and hedging, with repetitive form. Plants are spaced in a horticultural fashion, with space between each and mulch or gravel as the primary groundcover.



TRADITIONAL HORTICULTURE ←

→ CONTEMPORARY XERISCAPE

CONTEMPORARY XERISCAPE

TYPE B.

The contemporary xeriscape type is defined by the use of low-water or drought tolerant plants, such as cacti, succulents, and agave. Planting reflects a distinct fusion between traditional understandings of xeriscape yards (which often are presumed to be cactus only) and a regional plant community. The primary groundcover of these landscapes is gravel. Many of these landscapes are new transformations in the neighborhood, reflecting a contemporary trend among homeowners in the area.

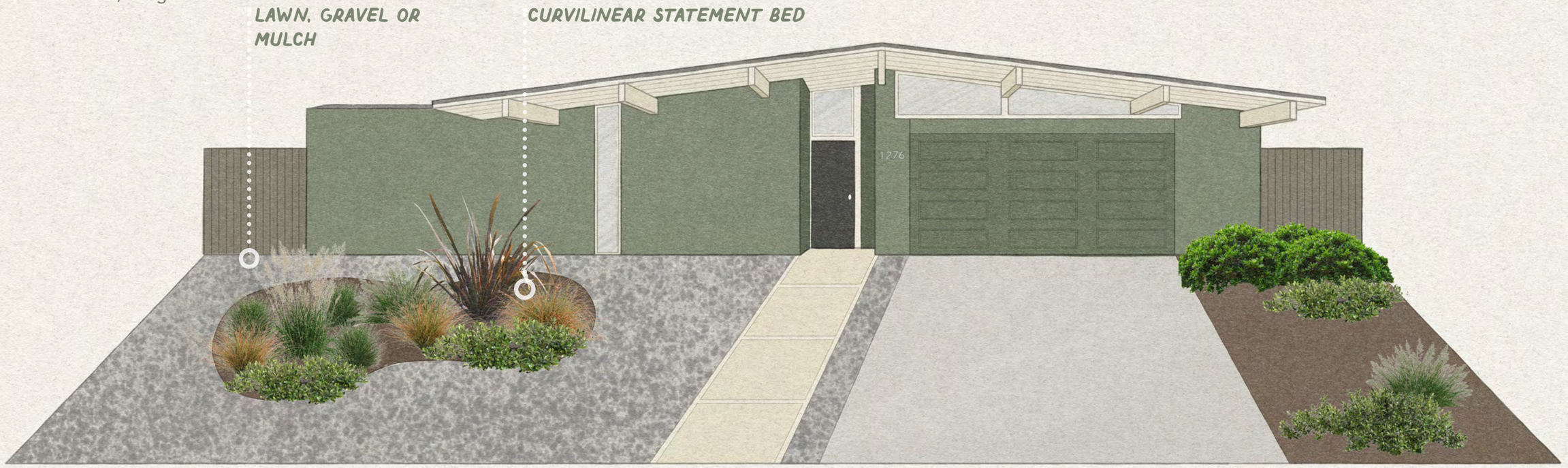
TRADITIONAL HORTICULTURE ←

→ CONTEMPORARY XERISCAPE

MID-CENTURY MODERN MEMORY

TYPE C.

The mid-century modern memory yard features a distinctive curvilinear bed, often framed by lawn, gravel, or mulch. The layout of these landscapes evokes the shapes of mid-century modern design, but the plantings range from traditional to contemporary selections. Grasses are often featured in the curvilinear specimen bed, alongside architectural species such as New Zealand flax, or agave.



TRADITIONAL HORTICULTURE ←

→ CONTEMPORARY XERISCAPE

NEIGHBORHOOD CHANGES

In the recent years, you can see a distinct shift in the residential landscapes of this neighborhood.

Lawns have been shrinking, replaced either by gravel, mulch, or more drought-tolerant landscaping.

JUNE 2007

JULY 2023

2019

2024

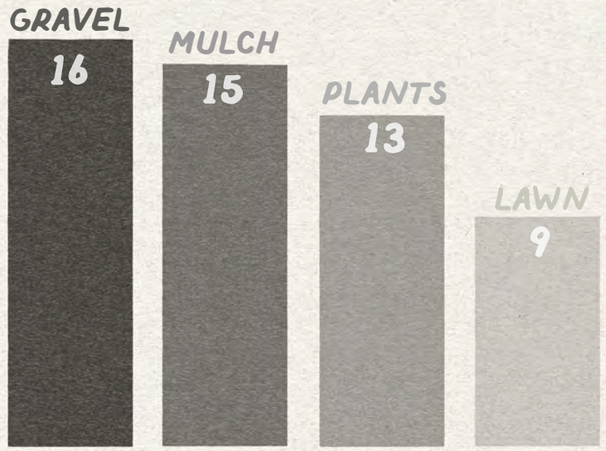
IMAGES: GOOGLE EARTH

HARDSCAPE GRADIENTS

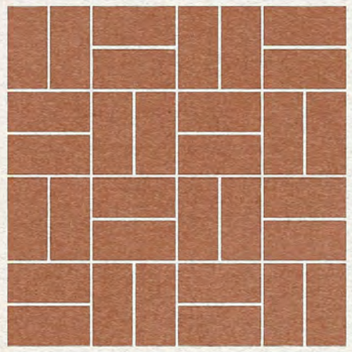
Gravel of varying shapes and sizes is one of the most dominant materials in the neighborhood today. This is likely reflective of community goals to minimize landscape irrigation, and become a FireWise community.

While it is encouraging to see so few lawns in this community, the abundance of gravelscapes in lieu of lawns leaves much to be desired both ecologically and aesthetically.

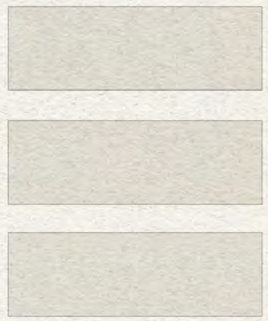
DOMINANT GROUNDCOVER OBSERVATIONS



BASKET-WEAVE

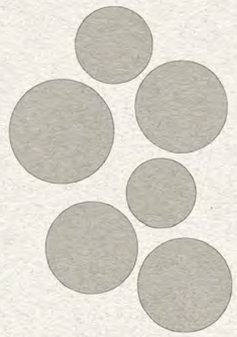


PAVER SLABS



MIXED MATERIALS

STEPPING STONES



FLAGSTONE

BEST PRACTICES

This led me to investigate the best practices for biodiversity, fire-smart landscapes, and water-wise landscapes. I wanted to understand why certain choices were being made in the neighborhood, and whether they align with best practices. I also wanted to understand the potential synergies and trade-offs.

This set of best practices is comprised from resources directed at homeowners provided by Firesafe Marin, Marin Master Gardeners, Marin Water, CalFire, California Native Plant Society, Xerces Society, and Pacific Horticulture, to name a few.

FIRE SAFE MARIN
Adapting to Wildfire

UC Marin Master Gardeners

MARIN WATER

CAL FIRE SINCE 1885

California Native Plant Society

XERCES SOCIETY

PACIFIC HORTICULTURE

WHAT ARE THE SYNERGIES AND TRADE-OFFS BETWEEN BIODIVERSE, FIRE-SMART AND WATER-WISE DESIGN GOALS?

PLANTING FOR BIODIVERSITY

PLANT SPECIES NATIVE TO YOUR ECOREGION AND AIM FOR 70 PERCENT NATIVE PLANTS

Integrating native plants into your landscape will always be a net-positive. They are locally adapted to your climate, and thus have increased resiliency towards drought and pests, and have co-evolved with local wildlife.

Studies have shown that we should aim for at least 70% native plants in our landscapes if we want to achieve biodiversity goals (O'Keeffe, 2023b).

PLANT KEYSTONE GENERA

Keystone genera are plants that have a specialized host relationship with an insect species, such as monarch butterfly lepidoptera (caterpillars) and milkweed. In Marin County, the endangered Mission Blue Butterfly has a specialist relationship with lupinus albifrons, lupinus variicolor, and lupinus formosus.

In fact, around 90% of insect herbivores are host-plant specialists, which means their diet is restricted to specific plant lineages. As 96% of our terrestrial birds rear their young on a diet of insects, keystone genera are crucial to include in our designed landscapes to aid our local bird populations (Tallamy, 2020).

PLANT SELECTION

PLAN YOUR LANDSCAPE FOR BLOOMS THROUGHOUT ALL SEASONS

Planting a diversity of flowering species and planning to ensure you have at least one species flowering in each season of the year is crucial for our pollinators. Conventional plantings often prioritize spring and summer blooms, but there are so many wonderful California native plants that bloom in winter and fall. Orchestrating a symphony of blooms throughout the year provides seasonal interest for us humans, too! (UC Marin Master Gardeners, 2020).

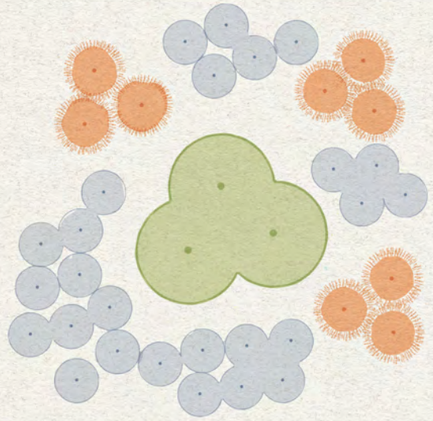
SELECT A VARIETY OF BLOOM TYPES AND MINIMIZE CULTIVARS THAT IMPACT BLOOM

Butterflies are known to prefer flat-topped flowers for ease of landing as they feed. Our native bee species, on the other hand, enjoy plants with daisy-like flowers, or clusters of small flowers. Hummingbirds are the primary bird pollinators in the U.S., and they are drawn to bright flowers (think red, yellow, and orange hues) that are tubular in shape. Moths often pollinate at night, and prefer pale or light colored flowers with strong fragrance and ample nectar. Cultivars that impact flower type or color, on the other hand, have little appeal to our pollinators (UC Marin Master Gardeners, 2020).

PLANTING FOR BIODIVERSITY

PLANT IN SWATHS OF 3' X 3'

Many of our native bees are known to practice **flower constancy,** where they will favor one species of flower when foraging, even if a different species of flower is closer. Planting species in swaths of 3'x3' allows for ease of foraging. It can also heighten the visual impact of a species for us non-pollinators, too (UC Marin Master Gardeners, 2020).



PLAN FOR OUR GROUND NESTING BEES WITH AREAS OF BARE SOIL

Most of our California native bees are solitary bee species. For those that nest in the ground, having an area of bare soil is key. If using mulch, make sure the depth doesn't exceed 2".

Landscape fabrics should be avoided, as they prevent bees from burrowing (The Xerces Society, 2021).

PLANT SPACING & MAINTENANCE

LEAVE THE LEAVES

In addition to ground-nesting bees, many California bees nest in pithy stems or wood debris. Be sure to leave some pithy stems (such as Elderberry) standing, and keep your debris and clippings on the ground. This not only provides essential overwintering habitat for bees, but also aids in soil health. Win-win! (The Xerces Society, 2021).

NO PESTICIDES

The use of pesticides such as neonictinoides are extremely detrimental to our insect populations. In fact, 97% of insects you find in your garden are "beneficial insects" which play a critical role in maintaining the health of your landscape. When purchasing plants, be sure to check with your local nursery to ensure they are not treating with harmful chemicals (UC Marin Master Gardeners, 2020).

NATIVE MILKWEED ONLY

If you are hoping to support the monarchs, only plant your native milkweed. Planting non-native milkweeds disrupts critical life-cycle cues (UC Marin Master Gardeners).

FIRE-SMART LANDSCAPING

ANY PLANT CAN BURN

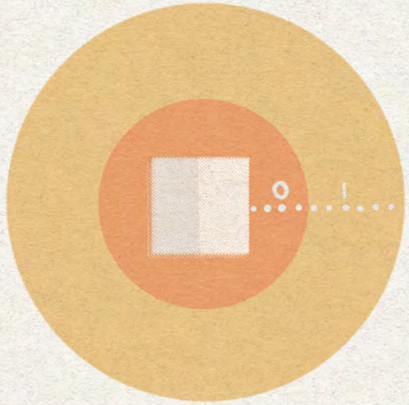
Keeping your plants healthy is critical to a fire-smart landscape. However, there are a few characteristics that can increase risk of ignition. Particular woody species, for example, may generate more debris, and thus require a higher level of maintenance and attention to retain a healthy, fire-smart state. This is a factor that should be considered when selecting plants, particularly for homeowners who are seeking low-maintenance landscapes.

Messy or invasive plants can be hard to control. Juniper, Italian Cypress, Pampas and Jubata grasses are all known as being extrermely flammable and should always be avoided in a fire-smart landscape (FireSafe Marin).

NATIVE PLANTS ARE ENCOURAGED FOR THEIR RESILIENCE

Native species that are climate-adapted offer increased resiliency in the landscape. However, some of our powerhouse native species -- such as buckwheat and manzanita species -- are classified as "fire prone" by FireSafe Marin. Native plants with higher moisture content and low combustibility are favored in a fire-smart landscape (FireSafe Marin).

PLANT SELECTION & SPACING



FOLLOW DEFENSIBLE SPACE GUIDELINES

The first 100' surrounding your home is referred to as the "Home Ignition Zone." Defensible space guidelines break this critical area into three sub-zones. The first two zones, Zone 0 and Zone 1, are the most pertinent to Lucas Valley lot sizes.

Zone 0 - This zone is comprised of the first 5' around your home, and is critical for firefighters to be able to safely defend in case of ignition. No combustible materials (including vegetation) are recommended for this zone.

Zone 1 - This zone spans 5' to 30' around your home, and maintenance is key. Plants should be well maintained, healthy, and irrigated. The goal in this zone is to reduce fuel load, and minimize fuel ladders through proper spacing and layout (FireSafe Marin).

PLANT IN ISLANDS AND UTILIZE HARDSCAPE AS FIREBREAKS BETWEEN PLANTINGS

Spacing of vegetation is critical in Zone 1 to minimize fuel ladders. Islands of vegetation surrounded by hardscape (such as pathways, gravel, or retaining walls) can act as firebreaks to minimize the risk of fire reaching your home.

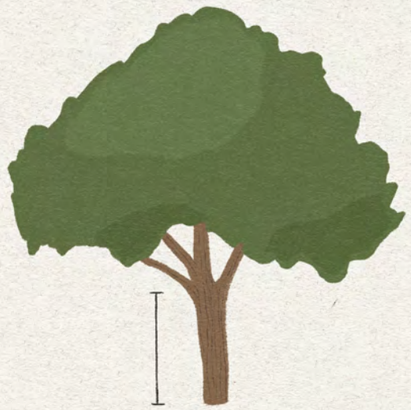
FireSafe Marin suggests spacing shrubs at a distance 2x their mature height. For shrubs beneath trees, a spacing of 3x the shrub height is suggested to minimize fuel ladders.

FIRE-SMART LANDSCAPING

REMOVE DEAD MATERIAL AND LEAF LITTER

Maintenance is perhaps the most critical aspect of a fire-smart landscape. The removal of dead materials such as grasses, weeds, plants, foliage, fallen leaves, needles, and other combustible detritus is critical, especially during fire season (FireSafe Marin).

While vegetation is not encouraged in Zone 0, homeowners who do want vegetation close to the home could consider annual wildflowers, grasses or succulents, which can be cut back during fire season (UC Marin Master Gardeners).



LIMB UP YOUR TREES

It is advised to limb trees up 6-10' off the ground, or up to 1/3 the height of the tree. No tree limbs should reach over your home or chimney.

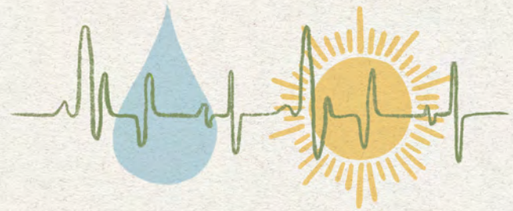
Many California native tree species – such as Oaks and Redwoods – are considered to be relatively fire resistant. The focus in fire-smart landscaping is not to remove all of your trees, but instead to use pruning and adequate spacing to minimize fuel ladders and minimize the risk of tree crowns catching fire. Even specific species that are considered more flammable, such as fir and pine, can have their place in a fire-smart landscape (FireSafe Marin).

MAINTENANCE

ENSURE PLANTS ARE HEALTHY

A drought-stressed plant is more likely to be fire-prone than a healthy, well-irrigated plant. This means that even drought tolerant species may need a boost of water during times of prolonged drought to maintain optimal health (FireSafe Marin).

Selecting species with low water requirements is encouraged. The Marin Master Gardeners chapter encourages the removal of large lawns in favor of grasses and flowers to reduce the need for excessive irrigation.



NO GORILLA HAIR MULCH

"Gorilla Hair" or shredded mulch is considered incredibly fire prone, and should be avoided completely. Organic compost or heavy bark mulch is okay for use in Zone 1, although it should not be used near the home (FireSafe Marin).

While non-combustible mulches such as gravel do not improve soil fertility and structure, they do minimize soil compaction, moderate soil temperature, and limit weed growth.

WATER-WISE BASICS

CHOOSE CLIMATE ADAPTED PLANTS

When planning a drought-tolerant landscape, the emphasis is on selecting low water plants with drought tolerant characteristcs. As California has a Mediterannean climate, there is a wide array of low-water plants to choose from that are climate adapted.

Selecting species native to your ecoregion is always encouraged, but it's important to remember that not all California native species are drought tolerant.

DROUGHT TOLERANT DOESN'T MEAN ZERO IRRIGATION

Just because a plant may be drought-tolerant doesn't mean it won't ever require supplemental irrigation. Irrigation is frequently needed during the first 1 or 2 years of establishment. And in times of extreme drought or inconsistent rainfall, supplemental irrigation may be needed to maintain plant health for the long-term.

There is a difference between surviving and thriving, and knowing your plants' needs is key to planning a resilient drought-tolerant design.

PLANT SELECTION & SPACING

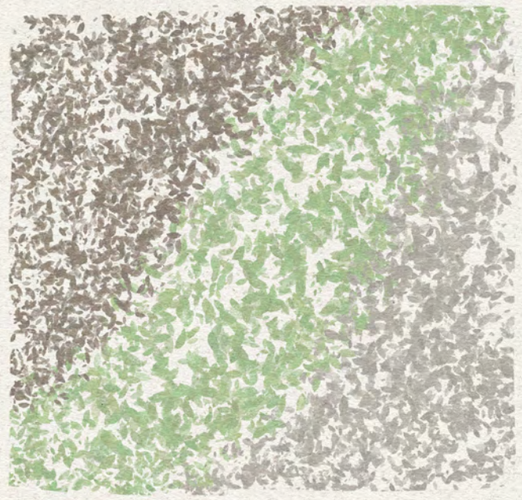
HYDROZONING

The practice of hydrozoning refers to the tactful grouping of plants with similar water needs in your landscape. This allows you to better tailor your irrigation regimen, and reduce excessive watering. This is particularly important in times of drought or minimal rainfall, as supplemental water may be needed to maintain the long-term health of your landscape during dry summer months (Pacific Horticulture, 2023).

The **Water Use Classification of Landscape Species** (WUCOLS) database by the U.C Davis California Center of Urban Horticulture is a key resource that provides water use rankings tailored to different climatic regions in California.

GROUNDCOVER RETAINS SOIL MOISTURE

The use of mulch is encouraged in water-wise landscape design, as it provides a layer of insulation for your soil -- retaining soil moisture by minimizing water loss from environmental factors such as dry air, heat, and wind. Similarly, the use of mulch helps to regulate the soil temperature, minimizing plant stress. Organic mulch also increases soil health, and helps to suppress weeds (Pacific Horticulture, 2023). Planted groundcover provides many of these benefits, in addition to erosion control.



DESIGN METHODS

For my design process, I am using the method outlined in Planting in a Post-Wild World by authors Claudia West and Thomas Rainer. West and Rainer advocate for the use of designed plant communities that reference archetypal landscapes, such as grasslands, woodlands, or forests, to increase the ecological function as well as aesthetic character of designed landscapes. It is important to note that West and Rainer distinguish designed plant communities from ecological restoration, and encourage designers to have humility.

"DESIGNING WITH PLANT COMMUNITIES CAN NOT ONLY LINK NATURE TO OUR LANDSCAPES, BUT ALSO BRING TOGETHER ECOLOGICAL PLANTING AND TRADITIONAL HORTICULTURE"
(RAINER & WEST, 2015, P.20)

This method calls upon the work of many naturalistic landscape designers, and advocates for planting in four layers: structural, seasonal, groundcover, and filler. The structural and seasonal layers are classified as the design layers, whereas groundcover and filler layers are classified as functional layers.

This method does not rely purely on the use of native plants, but instead is rooted in an understanding of how plant communities function in the wild. Selecting a reference community that is native to your region can simplify the design process, but West and Rainer believe that both native and non-native species can work together in this design method.

"A DESIGNED PLANT COMMUNITY IS A TRANSLATION OF A WILD PLANT COMMUNITY INTO A CULTURAL LANGUAGE."
(RAINER & WEST, 2015, P. 38)

There are four key principles outlined in Planting in a Post-Wild World that have been deeply influential in my design process:

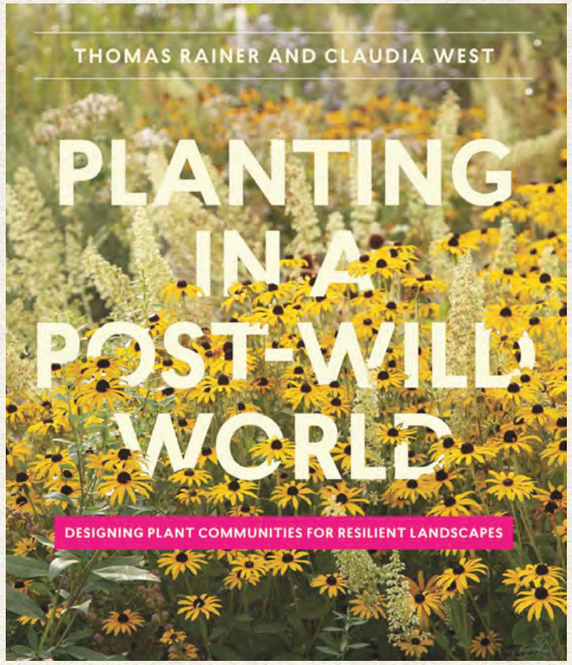
+ Designing with archetypal plant communities as reference

+ Embracing the constraints of your site (versus relying on amendments)

+ Planting in dense layers, and utilizing groundcover as natural mulch

+ Using principles of design and cues to care to increase legibility

+ Shifting our perceptions of maintenance, and allowing the design to evolve with time



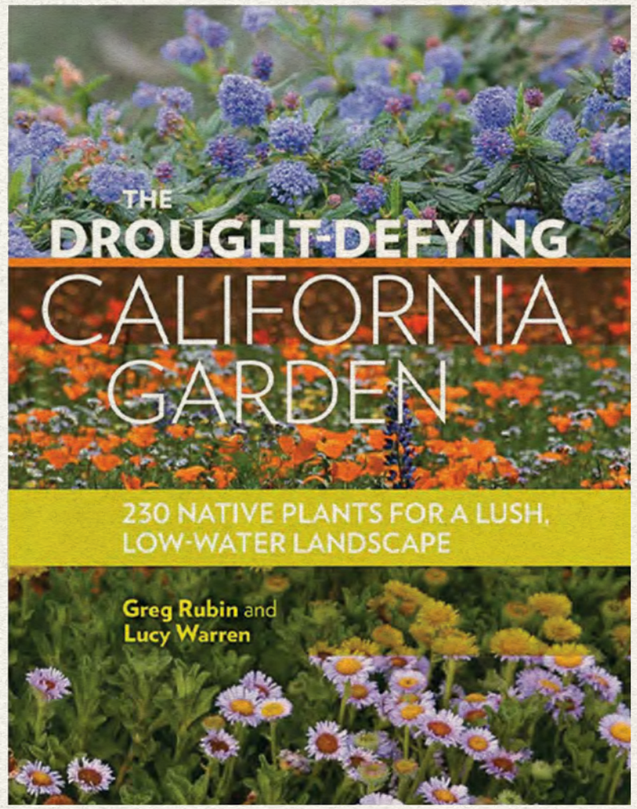
PLANT SELECTION

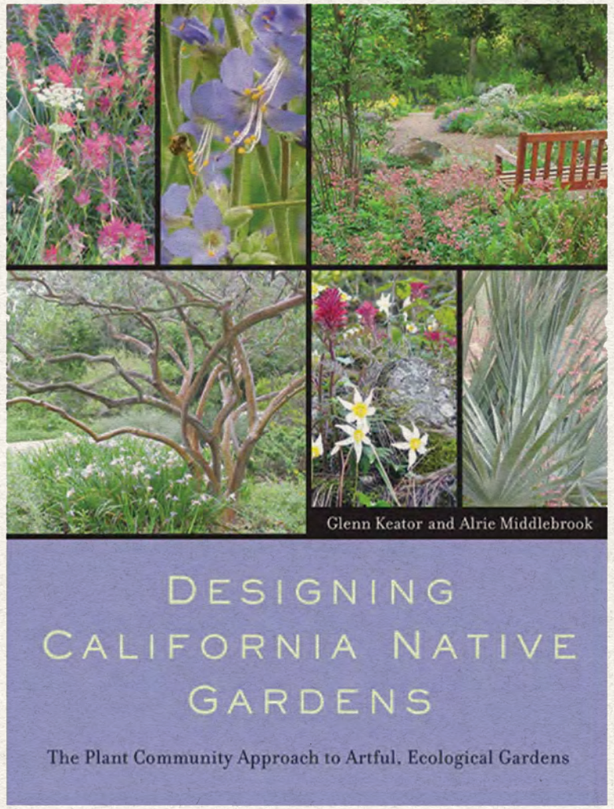
For plant selection, I began by looking at CalScape's list of species native to the Lucas Valley zip code. From there, I cross referenced numerous plant lists geared towards homeowners from Marin Master Gardeners, Xerxes Society, and FireSafe Marin. I also consulted a few native-plant specific books, and looked at local nursery websites to get a sense of what native species are garden tolerant and most popular among homeowners, designers, and growers.

California Native Plant Society
Calscape
Restore Nature One Garden at a Time

UC Marin Master Gardeners

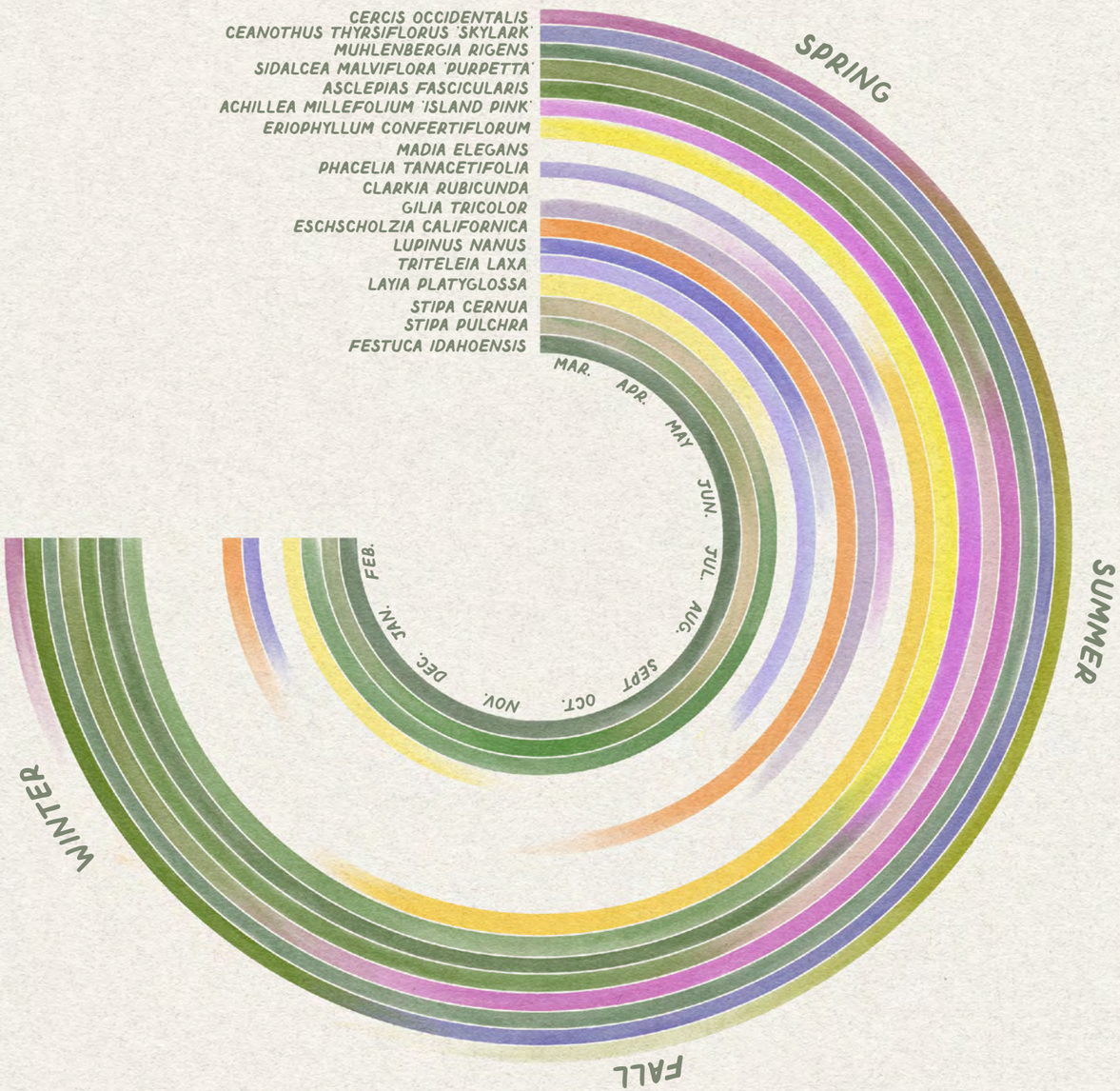
XERCES SOCIETY





GRASSLAND INSPIRED

In the grassland, swaths of colorful wildflowers mingle with translucent grasses, their inflorescences catching the light as they bend with the soft wind. Butterflies dance among the blooms, and a red-tailed hawk glides through the sky. It is hard to think of a more iconic California ecosystem than the native grassland.



GRASSLAND INSPIRED

WESTERN REDBUD
CERCIS OCCIDENTALIS

CALIFORNIA DEERGRASS
MUHLENBERGIA RIGENS

SKYLARK CEANOTHUS
CEANOTHUS THYRSIFLORUS 'SKYLARK'

PURPETTA DWARF CHECKERBLOOM
SIDALCEA MALVIFLORA 'PURPETTA'

NARROW LEAF MILKWEED
ASCLEPIAS FASCICULARIS

ISLAND PINK YARROW
ACHILLEA MILLEFOLIUM 'ISLAND PINK'

GOLDEN YARROW
ERIOPHYLLUM CONFERTIFLORUM

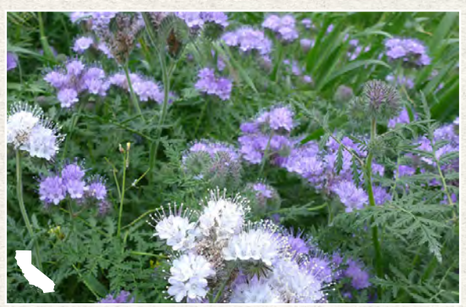
PURPLE NEEDLE GRASS
STIPA PULCHRA

CALIFORNIA POPPY
ESCHSCHOLZIA CALIFORNICA

BIRD'S EYE GILIA
GILIA TRICOLOR

SKY LUPINE
LUPINUS NANUS

LACY PHACELIA
PHACELIA TANACETIFOLIA



PLANT AND HABITAT INFORMATION COURTESY OF CALSCAPE, LAS PILITAS NURSERY, ANNIE'S ANNUAL'S, AND OAKTOWN NURSERY
WATER CLASSIFICATIONS BY WUCOLS REGION 1 (WHEN NOT AVAILABLE, CALSCAPE WATER USE DESIGNATION WAS USED)

FULL SUN · PART SUN · FULL SHADE · VERY LOW · LOW · MODERATE · FIRESAFE MARIN LIST · BIRDS · HUMMINGBIRDS · LARVAL HOST · POLLINATORS · BEES

GRASSLAND INSPIRED

COMMON MADIA
MADIA ELEGANS

COMMON TIDYTIPS
LAYIA PLATYGLOSSA

RUBY CHALICE CLARKIA
CLARKIA RUBICUNDA

ITHURIEL'S SPEAR
TRITELEIA LAXA

NODDING NEEDLEGRASS
STIPA CERNUA

IDAHO FESCUE
FESTUCA IDAHOENSIS

PLANT AND HABITAT INFORMATION COURTESY OF CALSCAPE, LAS PILITAS NURSERY, ANNIE'S ANNUAL'S, AND OAKTOWN NURSERY
WATER CLASSIFICATIONS BY WUCOLS REGION 1 (WHEN NOT AVAILABLE, CALSCAPE WATER USE DESIGNATION WAS USED)

California's grasslands are home to over 40% of the state's native plant species, providing habitat for a diversity of birds, insects, mammals, and reptiles. They are also one of the most threatened ecosystems in the state due to human development, agriculture, and exotic plant species. In fact, California's grasslands have been reduced by 99%, and 73 grassland-associated species are listed in the state & federal Endangered Species Act (California Native Grassland Association).

This grassland-inspired palette is geared towards the residential garden. While our native grasslands are comprised primarily of native sedges and bunchgrasses alongside perennials, annual wildflowers and geophytes (*Garden Like Nature*, CalScape), a designed landscape offers us the opportunity to play.

This palette features key grassland species – such as Purple Needlegrass, California Poppy, and Lupine – alongside other hard-working perennials with distinct aesthetic and ecological value, such as Checkerbloom, Yarrow and Milkweed, which can be found across our valleys, meadows and chaparral openings. Beloved California Deer Grass provides architectural structure alongside Skylark Ceanothus.

For this design, I have chosen to highlight the layered planting approach, broken into structural, seasonal, filler and a ground cover matrix of grasses.

Planning and installing a grassland-inspired landscape requires a high-level of involvement in the early stages, particularly in site-preparation, species selection, and planting. Eradicating any invasive weeds on site is critical, and there are a variety of resources that provide guidance as to the best site prep methods based on your landscape's needs.

FULL SUN · PART SUN · FULL SHADE · VERY LOW · LOW · MODERATE · FIRESAFE MARIN LIST · BIRDS · HUMMINGBIRDS · LARVAL HOST · POLLINATORS · BEES

GRASSLAND INSPIRED

CEANOTHUS THYRSIFLORUS 'SKYLARK'

MUHLENBERGIA RIGENS

STIPA PULCHRA
STIPA CERNUA
FESTUCA IDAHOENSIS

MADIA ELEGANS
LAYIA PLATYGLOSSA
TRITELEIA LAXA

GILIA TRICOLOR
PHACELIA TANACETIFOLIA
CLARKIA RUBICUNDA

LUPINUS NANUS
ESCHSCHOLZIA CALIFORNICA
GILIA TRICOLOR

LUPINUS NANUS
ESCHSCHOLZIA CALIFORNICA

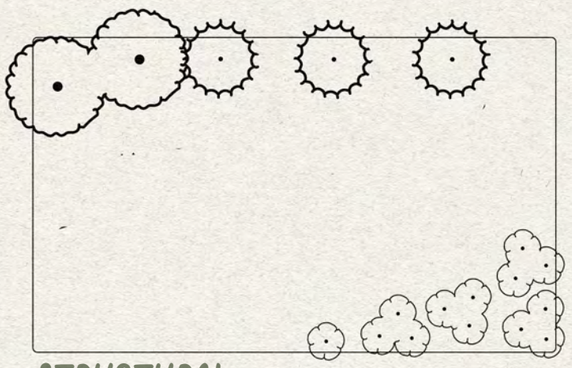
ERIOPHYLLUM CONFERTIFLORUM

ACHILLEA MILLEFOLIUM 'ISLAND PINK'

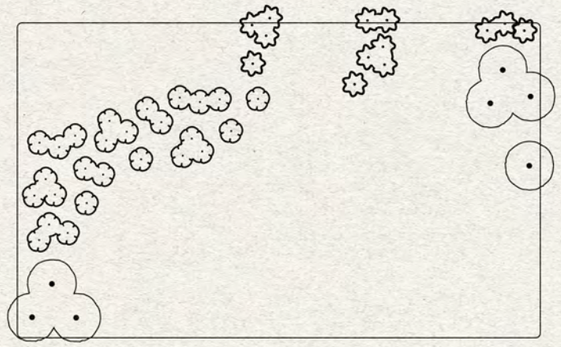
SIDALCEA MALVIFLORA 'PURPETTA'

ASCLEPIAS FASCICULARIS

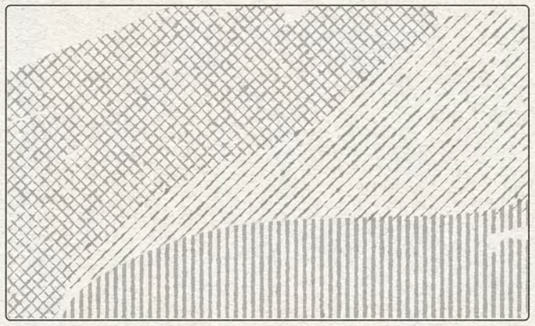
CERCIS OCCIDENTALIS



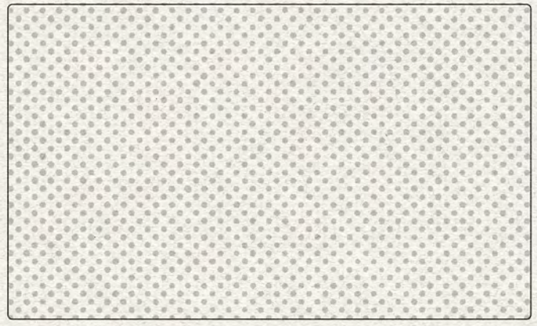
STRUCTURAL



SEASONAL



FILLER



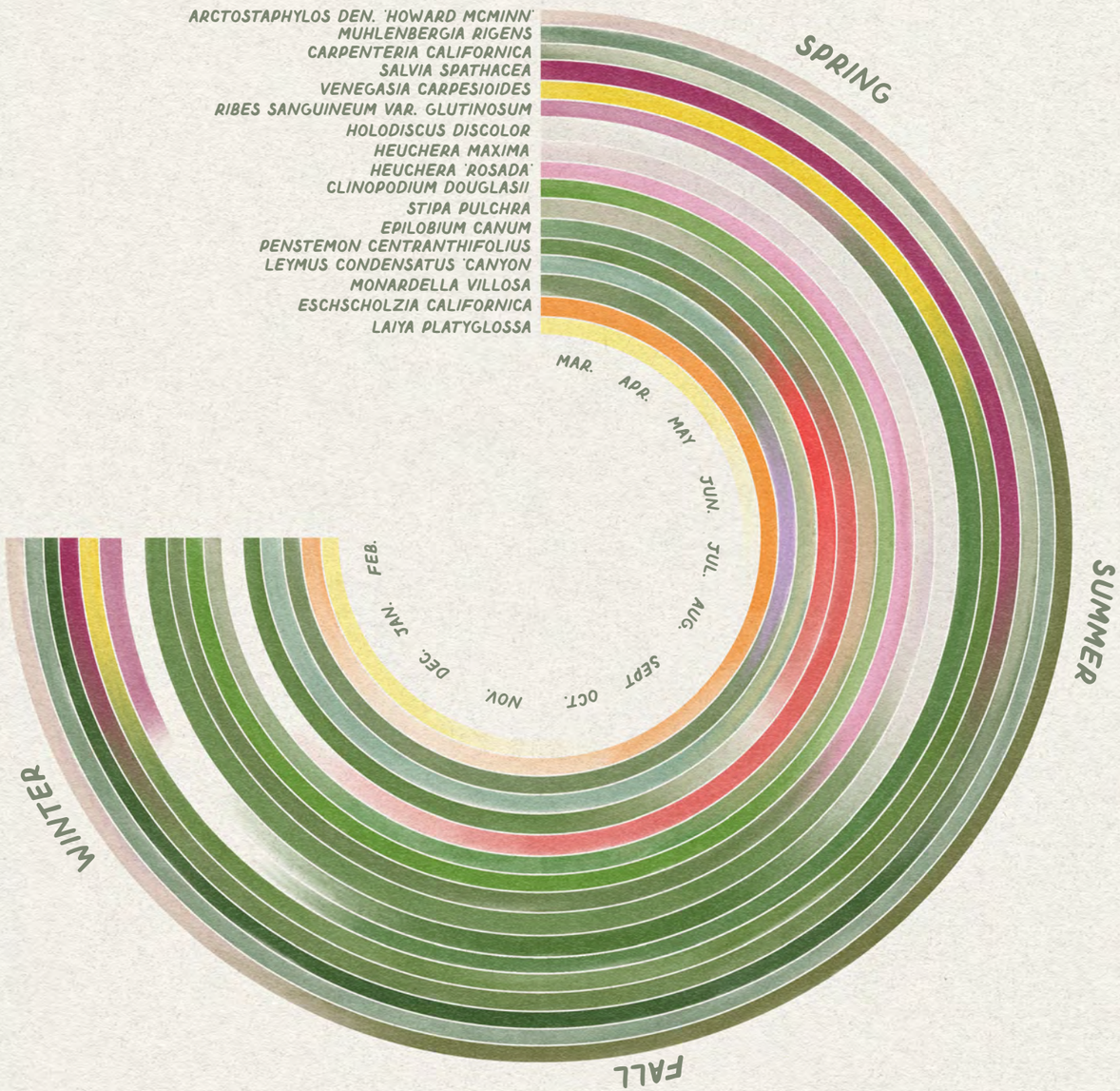
GROUNDCOVER

GRASSLAND INSPIRED

Visually, this palette is ideal for those seeking an airy, romantic landscape with pops of iconic California colors year-around. This approach is perfect for homeowners who are eager to be stewards of an engaging, dynamic landscape, and are excited about the prospect of hosting a robust variety of organisms on their property.

OAK WOODLAND INSPIRED

As the oak canopy rustles in the breeze, dappled sunlight illuminates an understory of sparkling perennial flowers, rich grasses and sedges. The pink belly of the Lewis' Woodpecker catches your eye, sitting perched among the oak leaves.



OAK WOODLAND INSPIRED

HOWARD MCMINN VINE HILL MANZANITA
ARCTOSTAPHYLOS DEN. HOWARD MCMINN

CALIFORNIA DEERGRASS
MUHLENBERGIA RIGENS

CAALIFORNIA FUCHSIA
EPILOBIUM CANUM

CALIFORNIA BUSH ANEMONE
CARPENTERIA CALIFORNICA

PINK FLOWERING CURRANT
RIBES SANGUINEUM VAR. GLUTINOSUM

CANYON SUNFLOWER
VENEGASIA CARPESIOIDES

OCEANSPRAY
HOLODISCUS DISCOLOR

PURPLE NEEDLE GRASS
STIPA PULCHRA

ISLAND ALUM ROOT
HEUCHERA MAXIMA

ROSADA CORAL BELLS
HEUCHERA 'ROSADA'

YERBA BUENA
CLINOPODIUM DOUGLASII

HUMMINGBIRD SAGE
SALVIA SPATHACEA

PLANT AND HABITAT INFORMATION COURTESY OF CALSCAPE, LAS PILITAS NURSERY, ANNIE'S ANNUAL'S, AND OAKTOWN NURSERY
WATER CLASSIFICATIONS BY WUCOLS REGION 1 (WHEN NOT AVAILABLE, CALSCAPE WATER USE DESIGNATION WAS USED)

FULL SUN · PART SUN · FULL SHADE · VERY LOW · LOW · MODERATE · FIRESAFE MARIN LIST · BIRDS · HUMMINGBIRDS · LARVAL HOST · POLLINATORS · BEES

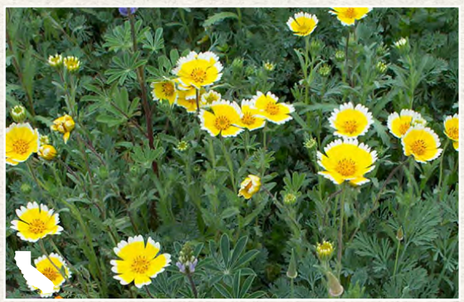
OAK WOODLAND INSPIRED

SCARLET BUGLER
PENSTEMON CENTRANTHIFOLIUS

'CANYON PRINCE' WILD RYE
LEYMUS CONDENSATUS 'CANYON PRINCE'

CALIFORNIA POPPY
ESCHSCHOLZIA CALIFORNICA

COMMON TIDYTIPS
LAYIA PLATYGLOSSA



Oak Woodlands are ecological powerhouses, hosting more species than any other habitat in the state – including 1,400 species of flowering plants, and over 300 species of vertebrates (OneTam). In Marin, these landscapes are in decline due to Sudden Oak Death, deer browsing, acorn predation, and lack of regular fire to maintain their open canopy structure. While many species of the oak-woodland can also be found in mixed-hardwood forests, the open-canopy structure allows for a distinct habitat of herbaceous plants and wildlife (OneTam). The rich plant diversity found in our California woodlands translates beautifully to the residential landscape.

For homeowners with an established oak (or other mature tree) in their landscape, this oak-woodland plant palette offers opportunity to take advantage of the diversity of microclimates it affords. Selecting species for dry shade can be a challenge, but Hummingbird Sage and Yerba Buena do the heavy lifting, providing functional groundcover and seasonal interest. Pink-flowering Currant and Oceanspray provide profuse blooms, and two species of heuchera add pink to white hues beneath the tree canopy.

In this design, I chose to highlight the hydrozoning, or grouping of species based on their designated water needs. This design also acts as a perfect aesthetic and ecological bridge between the grassland-inspired planting plan to the left, and the soft-chaparral planting plan to the right, featuring transitional species along its edges.

PLANT AND HABITAT INFORMATION COURTESY OF CALSCAPE, LAS PILITAS NURSERY, ANNIE'S ANNUAL'S, AND OAKTOWN NURSERY
WATER CLASSIFICATIONS BY WUCOLS REGION 1 (WHEN NOT AVAILABLE, CALSCAPE WATER USE DESIGNATION WAS USED)

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OAK WOODLAND INSPIRED

ARCTOSTAPHYLOS DEN. 'HOWARD MCMINN'

RIBES SANGUINEUM VAR. GLUTINOSUM

HOLODISCUS DISCOLOR

LEYMUS CONDENSATUS 'CANYON PRINCE'

MUHLENBERGIA RIGENS

STIPA PULCHRA

DIPLACUS AURANTIACUS

VENEGASIA CARPESIODES

CARPENTERIA CALIFORNICA

MONARDELLA VILLOSA

EPILOBIUM CANUM

HEUCHERA MAXIMA

HEUCHERA 'ROSADA'

PENSTEMON CENTRANTHIFOLIUS

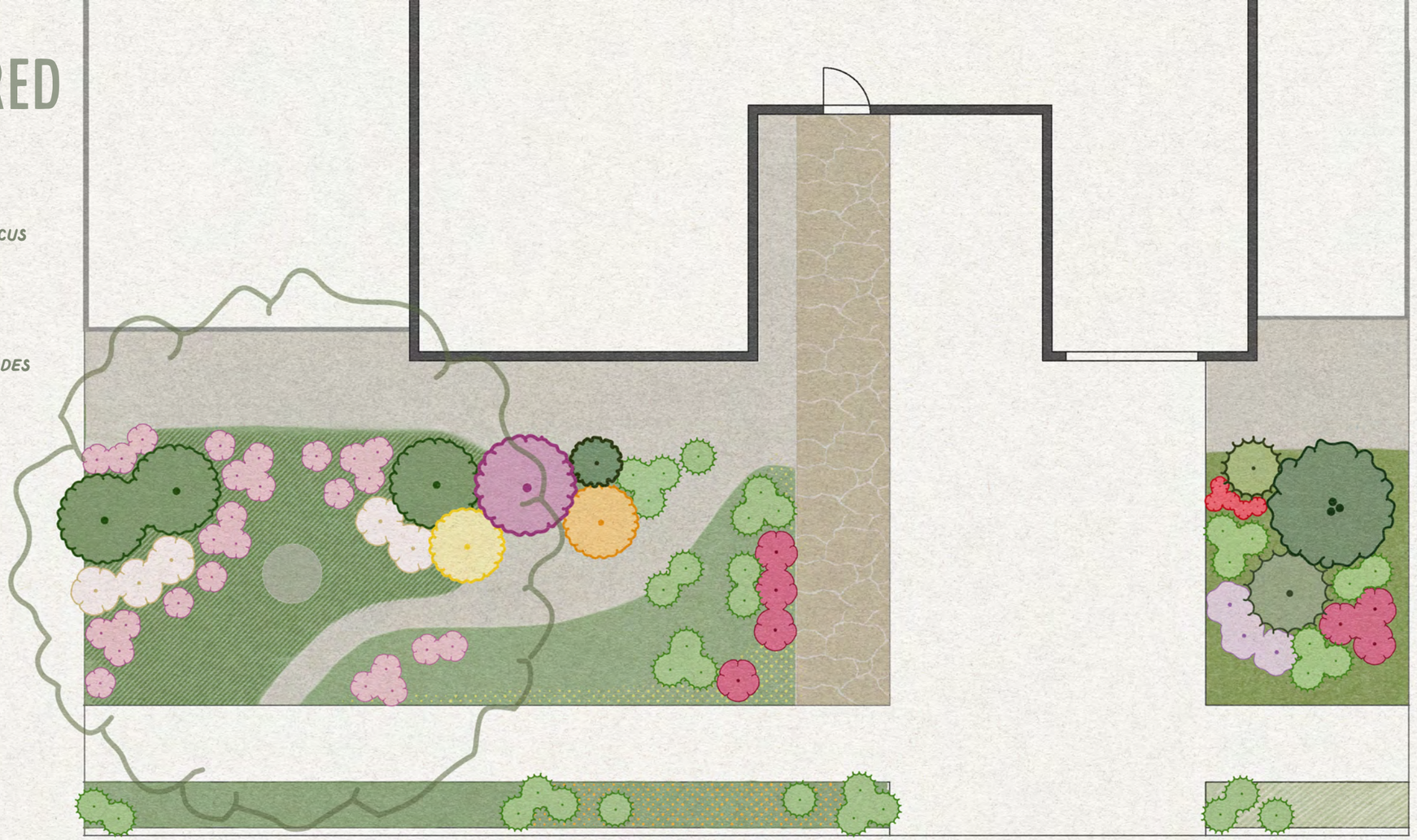
CLINOPODIUM DOUGLASII

SALVIA SPATHACEA

CEANOTHUS HEARSTIORUM

ESCHSCHOLZIA CALIFORNICA

LAYIA PLATYGLOSSA



HYDROZONES

VERY LOW

LOW

MODERATE

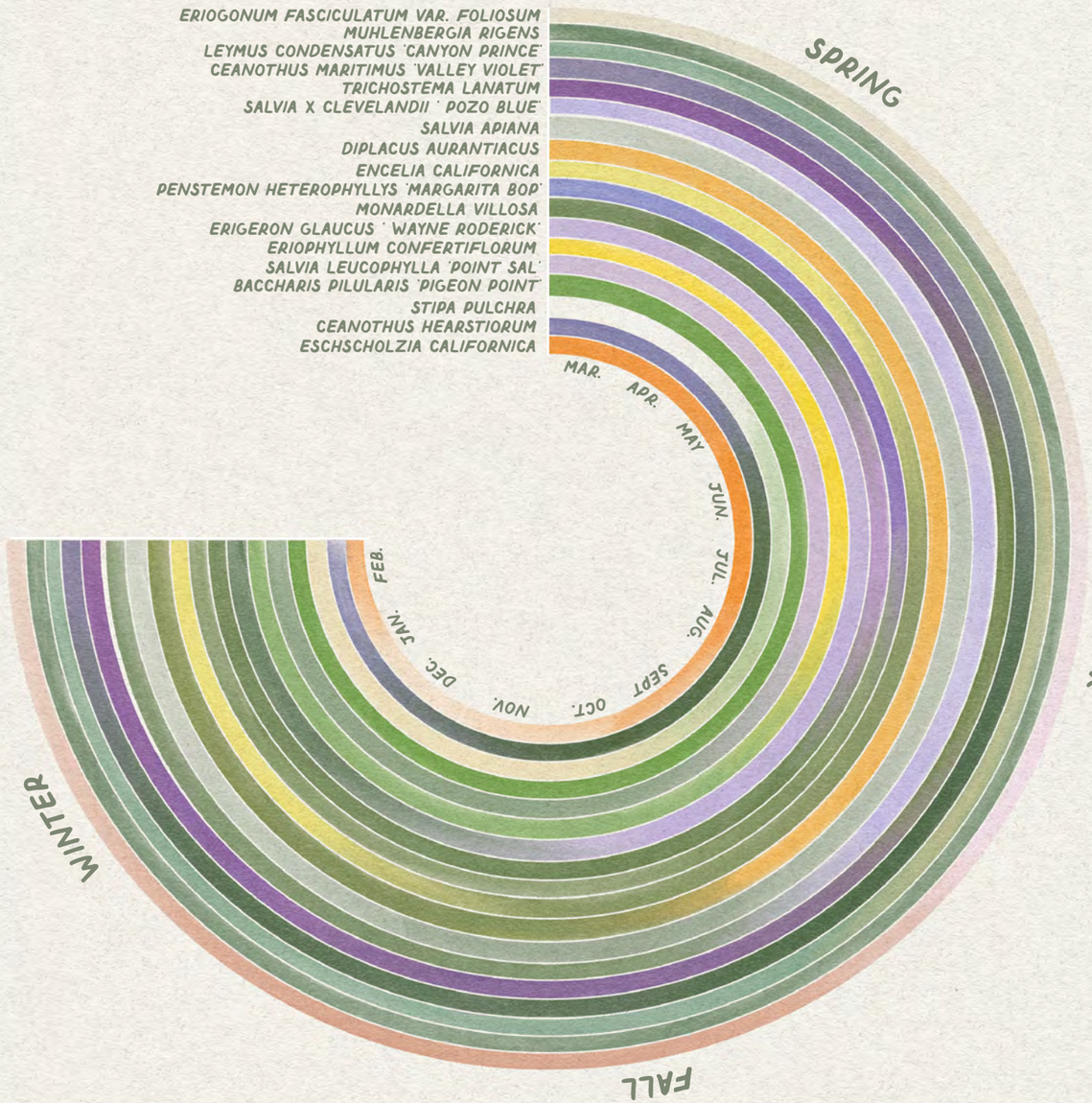
OAK WOODLAND INSPIRED

Taking inspiration from one of California's most beloved landscapes, this design is for homeowners who want to keep it classic. Perfect for homes with established trees and dry shade, this landscape is richly layered while still being water-wise.

SOFT CHAPARRAL INSPIRED

The profuse golden blooms of sticky monkey flower pop amongst the low tapestry of greyish green hues.

As you brush by, the aroma of sage mingles with the fresh salt air.



SOFT CHAPARRAL INSPIRED

CALIFORNIA BUCKWHEAT
ERIOGONUM FASCICULATUM VAR. FOLIOSUM

CALIFORNIA DEERGRASS
MUHLENBERGIA RIGENS

'CANYON PRINCE' WILD RYE
LEYMUS CONDENSATUS 'CANYON PRINCE'

VALLEY VIOLET MOUNTAIN LILAC
CEANOTHUS MARITIMUS 'VALLEY VIOLET'

WOOLLY BLUECURLS
TRICHOSTEMA LANATUM

CALIFORNIA WHITE SAGE
SALVIA APIANA

'POZO BLUE' CLEVELAND SAGE
SALVIA X CLEVELANDII 'POZO BLUE'

STICKY MONKEY FLOWER
DIPLACUS AURANTIACUS

COAST SUNFLOWER
ENCELIA CALIFORNICA

SANTA MARGARITA FOOTHILL PENSTEMON
PENSTEMON HETEROPHYLLUS 'MARGARITA BOP'

GOLDEN YARROW
ERIOPHYLLUM CONFERTIFLORUM

COYOTE MINT
MONARDELLA VILLOSA

PLANT AND HABITAT INFORMATION COURTESY OF CALSCAPE, LAS PILITAS NURSERY, ANNIE'S ANNUAL'S, AND OAKTOWN NURSERY
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SOFT CHAPARRAL INSPIRED

WAYNE RODERICK BEACH ASTER
ERIGERON GLAUCUS 'WAYNE RODERICK'

POINT SAL PURPLE SAGE
SALVIA LEUCOPHYLLA 'POINT SAL'

PURPLE NEEDLE GRASS
STIPA PULCHRA

HEARST RANCH BUCKBRUSH
CEANOTHUS HEARSTIORUM

DWARF COYOTE BRUSH
BACCHARIS PILULARIS 'PIGEON POINT'

CALIFORNIA POPPY
ESCHSCHOLZIA CALIFORNICA

PLANT AND HABITAT INFORMATION COURTESY OF CALSCAPE, LAS PILITAS NURSERY, ANNIE'S ANNUAL'S, AND OAKTOWN NURSERY

WATER CLASSIFICATIONS BY WUCOLS REGION 1 (WHEN NOT AVAILABLE, CALSCAPE WATER USE DESIGNATION WAS USED)

Coastal scrub is often referred to as "soft chaparral." While chaparral species often feature thick, leathery leaves, such as Manzanita and Ceanothus, coastal scrub is often comprised of smaller, softer-leaved species, including sages, sagebrushes, buckwheats, and subshrubs such as the sticky monkey flower (*Garden Like Nature*, CalScape). Both of these communities exist within Marin County shrublands, and include many keystone species that are beloved by insects, birds, and humans for their rich colors and forms (OneTam).

This soft chaparral-inspired palette pulls from coastal scrub, coastal sage scrub, and chaparral communities. As many of the soft chaparral subshrubs such as sticky monkey flower, white sage, and naked buckwheat are summer semi-deciduous, integrating key chaparral species such as ceanothus provides a structural evergreen foundation alongside California Deer Grass.

As many of these species are classified as fire-prone, this design utilizes hardscape and island planting to minimize risk. The use of crushed gravel not only creates essential fire-breaks, but also adds a subtle texture to the landscape. This material was chosen to compliment the fine-textured, cool-toned plants, without overpowering the subtleties of the softer species.

FULL SUN · PART SUN · FULL SHADE · VERY LOW · LOW · MODERATE · FIRESAFE MARIN LIST · BIRDS · HUMMINGBIRDS · LARVAL HOST · POLLINATORS · BEES

SOFT CHAPARRAL INSPIRED

CEANOTHUS MARITIMUS 'VALLEY VIOLET'

SALVIA APIANA

SALVIA X CLEVELANDII 'POZO BLUE'

MONARDELLA VILLOSA

PENSTEMON HETEROPHYLLUS 'MARGARITA BOP'

ERIGERON GLAUCUS 'WAYNE RODERICK'

ERIOPHYLLUM CONFERTIFLORUM

DIPLACUS AURANTIACUS

ERIOGONUM FASCICULATUM VAR. FOLIOSUM

TRICHOSTEMA LANATUM

LEYMUS CONDENSATUS 'CANYON PRINCE'

MUHLENBERGIA RIGENS

STIPA PULCHRA

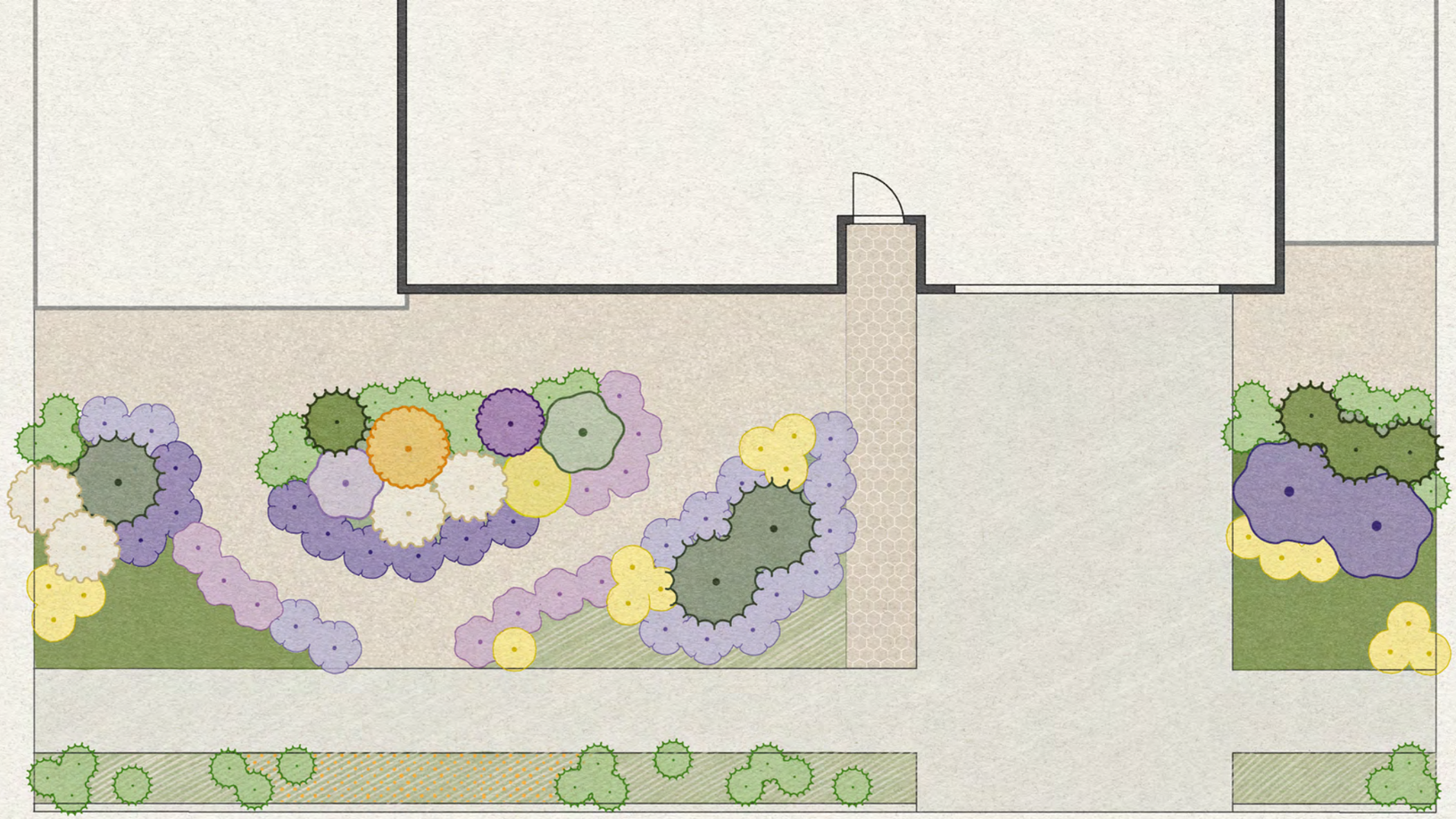
ESCHSCHOLZIA CALIFORNICA

SALVIA LEUCOPHYLLA 'POINT SAL'

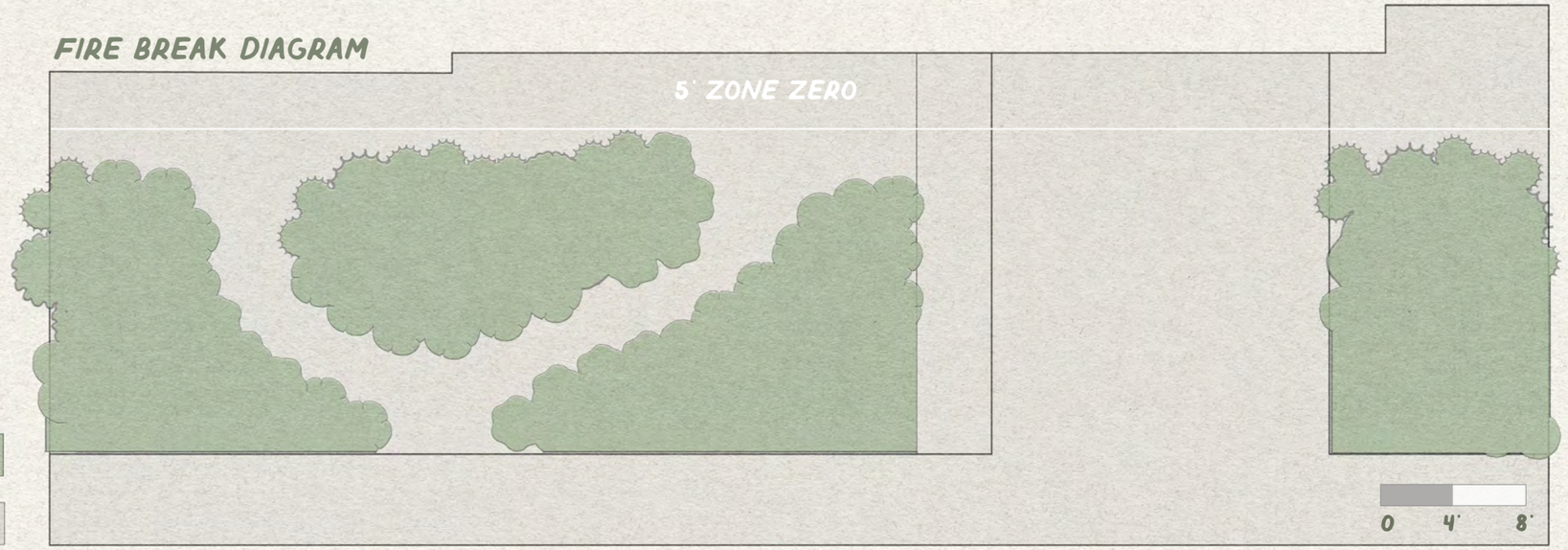
CEANOTHUS HEARSTIORUM

PLANTED ISLANDS

HARDSCAPE



FIRE BREAK DIAGRAM



SOFT CHAPARRAL INSPIRED

This planting plan is for homeowners who are seeking a contemporary approach with high ecological pay-off, as it features many of our most beloved California native species.

SYNERGIES & TRADE-OFFS

Balancing the best practices for biodiverse, fire-smart and drought tolerant design requires a few tactical decisions to be made. These decisions will vary depending on your key goals. This simplified chart is intended to help visualize where key best-practices overlap, and where they may conflict.

PLANT SELECTION

NATIVE SPECIES ECOREGION & STATE	✓	✓	✓
CLIMATE ADAPTED SPECIES FROM SIMILAR REGIONS		✓	✓
ORNAMENTAL SPECIES NON-NATIVE SPECIES THAT ARE NOT CLIMATE ADAPTED		✓	

PLANT SPACING

PLANTING IN LAYERS ENHANCING ECOSYSTEM FUNCTION	✓		✓
PLANTING IN ISLANDS CREATING FUEL BREAKS	✓	✓	✓
SPACING INDIVIDUAL PLANTS MINIMIZING FUEL LADDERS		✓	✓
GROUPING BY WATER NEEDS HYDROZONING	✓	✓	✓

MAINTENANCE

ORGANIC MULCH SUCH AS WOODCHIPS OR COMPOST	✓		✓
NON ORGANIC MULCH SUCH AS GRAVEL		✓	✓
LEAVE THE LEAVES A HANDS OFF APPROACH FOR HABITAT	✓		✓
PRUNE & CLEAR REMOVING DEBRIS AND LEAF LITTER		✓	✓

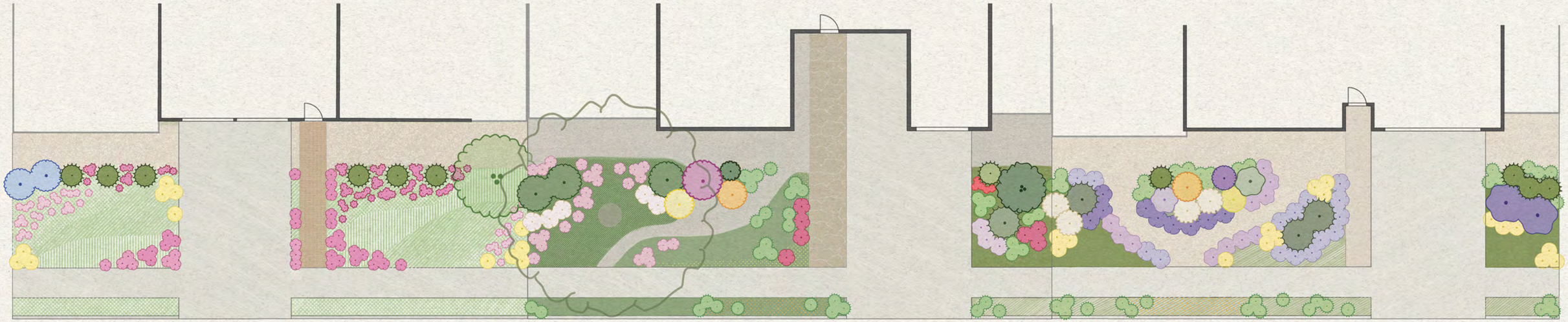
Using native species is encouraged across biodiverse, fire-smart, and water-wise design. However, it is important to note that not all native species are water-wise, and many of our California native species have characteristics that increase their flammability. While it is possible to select species native to your ecoregion that are drought tolerant and are considered fire-smart, many of our keystone genera -- such as buckwheat and manzanita -- are designated as fire-prone by local organizations such as FireSafe Marin. This doesn't mean we shouldn't plant these important species, but more care needs to be taken to minimize risk.

The most notable conflicts in plant spacing and maintenance exist between biodiverse planting design practices and fire-smart landscaping practices. This is particularly evident in maintenance practices. While "leaving the leaves" is a key tenant of planting for biodiversity, in fire-smart landscape design the pruning and clearing of all dead material is deemed critical.

DESIGN POSSIBILITIES

I hope these three designs help showcase the aesthetic possibilities to be found in ecologically minded landscape design, and the incredible richness biodiverse, fire-smart, and water-wise landscapes can embody. Just because a landscape is comprised of native plants, doesn't mean it is messy. Just because something is fire-smart, doesn't mean it is a desolate moonscape. And even if you despise cacti, you can still have a drought-tolerant yard.

Together, these three designs add 43 native species to the neighborhood, 15 of which are native specifically to the Lucas Valley area (CalScape). Between the three properties, these plant communities support a myriad of butterflies, moths, native bees, hummingbirds, and birds — such as the Monarch Butterfly, Leafcutter Bee, and Anna's Hummingbird, to name a few favorites.



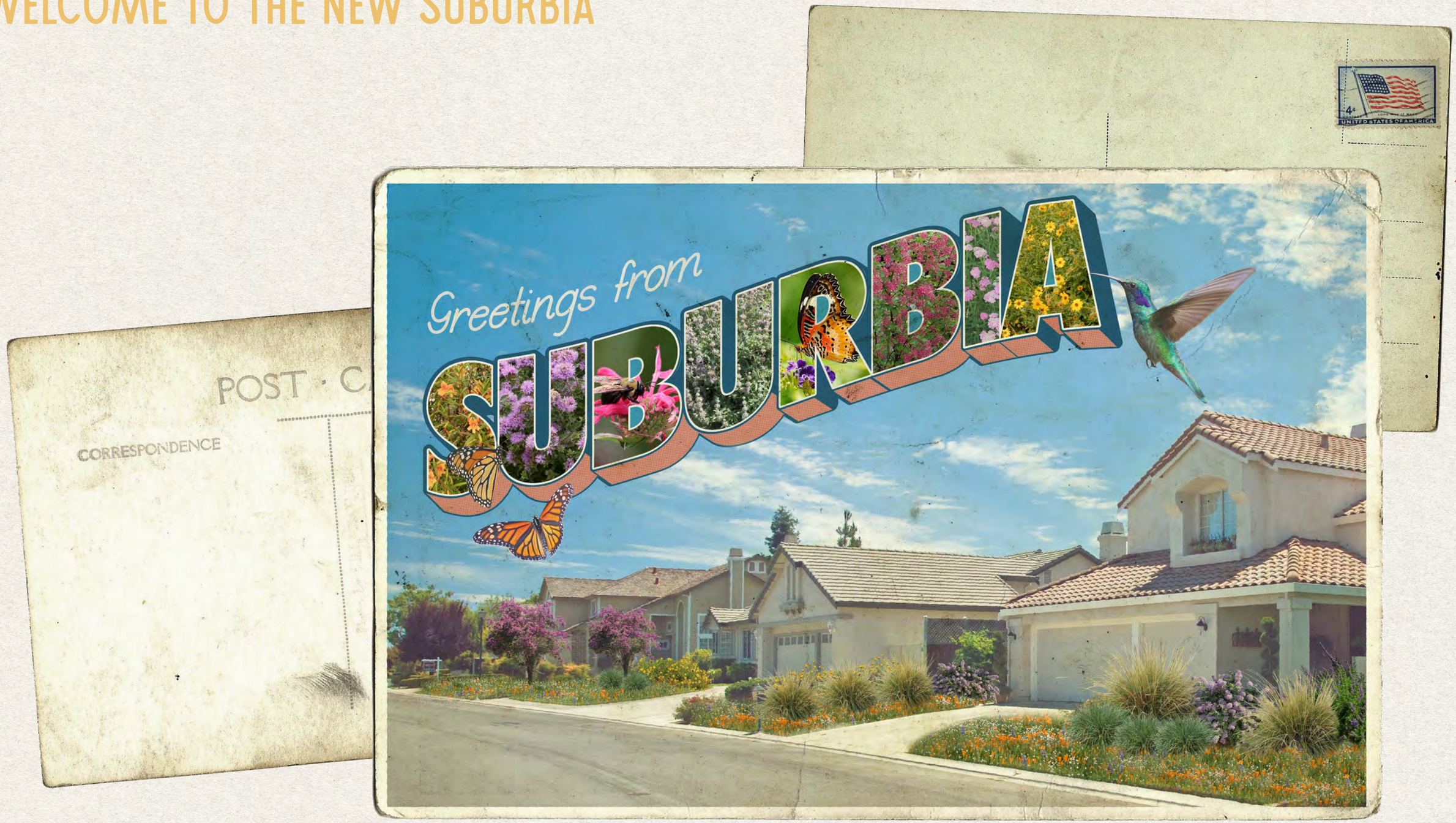
DESIGN POSSIBILITIES

So what if instead of this...

DESIGN POSSIBILITIES

We did this...

WELCOME TO THE NEW SUBURBIA



ACKNOWLEDGEMENTS

Thank you to everyone who helped to make this project possible, and ecouraged me along the way.

It would not be possible without your support.

ELEE STAPLETON

KORY RUSSEL

YEKANG KO

THE UO DEPARTMENT OF LANDSCAPE ARCHITECTURE FACULTY & THE 2024 MLA COHORT

HAVEN KIERS, U.C DAVIS

JEB, HOLLY & JACK HARRISON

TYLER & THE SYLLA FAMILY

LYDIA CRUZ

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