

RAISING NATIVE PLANT AWARENESS AS A METHOD FOR RE-NATURALIZATION

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INTRODUCTION

Land Acknowledgement

Modern Americans live on land that has been inhabited by Indigenous groups for more than 10,000 years. The coming of Columbus and Manifest Destiny caused tremendous physical, cultural, and spiritual harm to these peoples. Trauma has been passed down from generation to generation, and systemic oppression still affects the Native population to this day. This paper is written from the land of the yak títʷu títʷu yak tihini or the Northern Chumash Tribe, who continue to live and carry on their culture to this day.

Positionality Statement

Post-positivist ethnographers, anthropologists, and sociologists have made it clear that writers of science are not without bias. Rather, the work we create, the words we write with, and the topics we research are inextricably linked to the conditions within which we were socialized and educated. For this reason, it is important to acknowledge my own circumstances so that the reader may read my words through a critical lens. This means the reader will examine and analyze the merits and faults of the work presented, considering the systems of oppression and privilege that affect my own worldview. I am a white student of Anthropology and Geography at a predominantly white college on the Central Coast of California.

Reciprocity and Traditional Ecological Knowledge

As Robin Wall Kimmerer asserts in her books *Braiding Sweetgrass* and *Gathering Moss*, the human condition has been one of reciprocity for most of our species' existence (Kimmerer 2013). Luckily, Traditional Ecological Knowledge (TEK) is beginning to find a place among Western Science. As fires burn hotter, hurricanes rage harder, pollution worsens, and resource

exploitation reaches its heights, western scientists are directing their attention towards the displaced land stewards who have engaged in harmonious relationship with the land for centuries. TEK is the collective knowledge gained through experience – careful observation and management of resources – acquired over thousands of years of human interaction and relationship to their environment (Berkes 1993). This indigenous knowledge system was violently obstructed in North America at the onset of colonization. However, as indigenous people are still among us today, so are their traditions and often the ecological knowledge they possess.

Kimmerer writes of the relationship between humans and our non-human relatives, or plants. Artfully composed, the lessons she imparts are those of mutual flourishing, reciprocity, and gratitude as an approach to the devastation our planet faces. Using the example of the disturbance of sweetgrass, Kimmerer explains how “human beings are part of the system,” opposing the Western belief that humans operate outside of nature (Kimmerer 2013). Kimmerer and one of her graduate students demonstrated how sweetgrass, (*Hierochloe odorata*), thrives within systems of disturbance such as plucking by humans. The grass sprouts from rhizomes underneath the surface of the soil, so that when their leaves are cut or pulled, they multiply (Kimmerer 2013). Sweetgrass, however, is not the only plant that benefits from disturbance. In fact, there is evidence that many California endemic plants require disturbance or thrive with disturbance as part of their ecosystem. Kat Anderson presents the idea that some native plants of California may have evolved alongside moderate human disturbance (Anderson 2005). Those who tend and care for sweetgrass glean the plants gifts of fiber for ceremonial braids and cordage. In providing a useful material for humans, the sweetgrass in turn ensures its own survival when humans pluck from it. Western scientists are more readily accepting this form of

observational science and are seeking to address the problems that society faces from the lens of TEK.

Another scholar who studies economic models of Native Americans, Ronald Trosper, asserts four basic principles that are generally held true among most Indigenous groups throughout the United States which support an “ethic of respect” (Trosper 1995). The first principle is Community, explaining the inherent responsibility humans have to each other and all other beings. Another principle called “The Seventh Generation,” tells of the Iroquois Nations Constitution which requires every decision made by the tribe to consider the seventh generation, confirming the health and prosperity of future generations. The next principle is Humility. This principle asks that humans consider the impossibility of understanding all of Nature’s creations and hold the unknown with humility and respect rather than arrogance and certainty. The last of these principles, which I hope to encourage most of all in producing this essay, is Connectedness. Connectedness refers to humans’ inseparable bond to the planet and to each other (Trosper 1995). Western societies’ abusive relationship to plants and to other humans within the past few centuries demonstrates how dramatically *disconnected* we are from the natural environment and from each other. This destruction and exploitation of our planet exemplifies our need to come back to our roots, to reconnect to those things we have previously sought dominion over.

PLANT BLINDNESS AND RE-NATURALIZATION

Plant Blindness

Due to this long-standing disconnection, non-indigenous humans who grew up in Western society generally experience a phenomenon called “plant blindness.” In their 2016 essay, Balding and Williams discuss plant blindness as “a tendency among humans to neither

notice nor value plants in the environment,” but they emphasize that not all cultures experience this phenomenon (Balding & Williams 2016). Cultures that are based around nonhierarchical kinship relationships with plants value plants as relatives with a shared ancestry. Like a human family member, Hall argues that groups who view plants as relatives take care of these plants since the plants provide for them; human caretakers acknowledge the harm done to the plant as a necessary element of their reciprocal relationship (Hall 2011). Plants and humans were more commonly engaged in reciprocal relationships before the advent of Christianity. Hall explains how the Bible separates humans from the plants given to them by God, granting them dominion over the biotic realm (Hall 2011). Once this ideology had spread throughout Europe, colonizers took their various iterations of the Christian religion to the New World. Lifetimes of destruction and genocide later, Christianity and Catholicism were thrust upon Indigenous people who have had deep spiritual connection to their biotic environment for millennia. The spread of monotheistic religion and the subsequent need to provide for an industrializing and growing population justified the subordination of the biotic realm for the benefit of the highly privileged. Furthermore, the growth of cities and demand for labor encouraged families and individuals to move away from rural areas and into a concrete jungle, removing themselves from their environment and any remaining connection to the wild. Plant blindness and subordination of the biotic realm are painfully obvious in our children who can identify more logos than they can plants.

While many Indigenous religions and practices were destroyed, many lived on by the strength of those who hid their knowledge of their Native languages, songs, stories, and ecological knowledge. While the burden of solving disconnection and climate change should not be put on the shoulders Indigenous peoples, interacting with the world with a similar reciprocal

perspective will be the way out of the mess we have created. For our society to move back into the space of reciprocal relation with the plants and land around us, we must challenge ourselves to start thinking in terms of connectedness. There is evidence that conservation initiatives and programs can reconnect humans to their environment and dismantle plant blindness (Balding & Williams 2016). In reconnecting humans to our respective environments, we have a chance to reclaim active participation in and renew our dedication to fighting for the land we depend on. To reinvigorate our curiosity and appreciation for our natural environment is to regain conscious democracy of species, thus intervening in the harm currently inflicted on this planet (Thorp 2006). As Stephen Gould asserted, “We cannot win this battle to save species and environments without forging an emotional bond between ourselves and nature as well, for we will not fight to save what we cannot love” (Gould 1991). As the urban landscape increases by the day in California, it is our responsibility to mitigate or prevent the inevitable harm imparted on to our natural environment. Gould’s message tells us that we must create reverence of this environment if we want to effectively advocate for it.

Re-Naturalization

The reconnection and dedication to our biotic environment is perhaps one of the most important components of healing our planet and ourselves. Kimmerer calls this process “Re-naturalization” (Kimmerer 2013). In her explanation of what this term means, she emphasizes the importance knowing that the plants, water, and air around you are the building blocks of body and spirit. Becoming naturalized means taking care of the land “as if our lives and the lives of all our relatives depend on it. Because they do” (Kimmerer 2013). Just as plants can become naturalized to place after being introduced, humans can and must do the same. At this moment in time, there are many areas where humans more closely resemble invasive plants: taking over

environments at the first chance, pushing out native plants and animals, and causing drastic changes in the entire ecological system. A veil of obscurity clouds our connection with our surrounding environment, inviting invasive behavior. Unfamiliarity of native plants in particular causes a disregard for the importance of protecting them and the ecosystems they maintain. In an attempt to re-naturalize ourselves to our environment and create a momentous reverence, we must first seek to understand and engage with native California plants and their biological, cultural, and spiritual importance.

CALIFORNIA NATIVE PLANTS

California Black Walnut

Description

There are two species within the genus *Juglans*: the southern black walnut (*Juglans californica*) and the northern black walnut (*Juglans hindsii*). The genus *Juglans* is named after Latin term for walnut and means Jupiter's nut: Jovis (Jupiter) + glans (nut). The specific epithet of both *J. californica* and *J. hindsii* are respectively named after the state which the southern variety is endemic to and a British botanist who first described the northern variety. The southern black walnut can be found across California, particularly in southern and central California, where a handful of towns are named after this iconic tree. Currently, there are only 3 native stands of the northern variety, however, it is widely naturalized in the interior Coast Ranges and the Central Valley (Stuart & Sawyer 2001). The native ranges of both *Juglans* species have declined dramatically since the missionization and subsequent colonization of California. Settlers cut down large trees in their effort to stimulate the emerging economy by establishing settlements and clearing rangeland (Stuart & Sawyer 2001; Anderson 2005). In modern times,

urbanization has been the most prevalent threat to the species, especially in southern California where *Juglans* forests are intensely fragmented (Quinn 1990).

The black walnut tree has deciduous leaves and grows in mixed-evergreen riparian and broadleaved woodlands near streams and on lower, northeast slopes. Both *Juglans* species have odd-pinnately compound leaves that can reach up to a foot in length (Stuart & Sawyer 2001).

The northern black walnut has 13-21 lanceolate, coarsely serrate leaflets while the southern black walnut has 9-17 narrow to elliptic leaflets with finely serrate margins. The northern black walnut has minute tufts of hair between leaf veins on the underside of the leaf, a primary distinguishing factor between the two species. They both produce spherical nuts enclosed within a fleshy husk about the size of a golf ball, though the fruit of the northern variety is generally larger than the southern variety (Stuart & Sawyer 2001). Generally, the northern black walnut has a single stem or trunk while the southern variety has 1-5 trunks (“Calscape” n.d.). Thus, walnuts can take the shape of either a large single-stemmed tree, or a smaller, multi-stemmed shrub depending on the variety.

The California black walnut also plays an important ecological role in mixed evergreen and woodland habitats. Black walnut leaves are present for 9-10 months of the year, providing ample nutrition for invertebrates that depend on them. The leaf litter also provides habitat for more invertebrates that consequently attract insectivorous vertebrates. The uppermost limbs of these trees are used as nesting habitats for multiple species of birds, including raptors and owls. Cavernous trunks and limbs hollowed out by heart rot also provide nesting cavities for rodents and birds. Residents of these cavities sustain themselves with the fatty nuts the tree provides as well as the protein-rich invertebrates. (Quinn 1990). One important resident is the gray squirrel. Gray squirrels benefit from the nutrient-rich forage of walnuts in fall months, in turn providing

the walnut tree with near-guaranteed dispersal of its seed (Quinn 1990). As we will see, this reciprocal relationship between the black walnut and the gray squirrel is mirrored between the black walnut and Native Californians in this region.

History and Human Interaction

Overshadowed by its English cousin, the native California black walnut is an often forgotten giant in California. While it may be small in popularity, the tree is not only large in girth, but also in cultural importance for Native Californians. Ranging from the southern border to the northern extent of the Great Valley, these trees were historically an available food source for many Native tribes. Sawyer and Stuart mention the association between Native Californian village sites and native stands of both varieties of *Juglans* species (Sawyer 2001). Similar to the aforementioned gray squirrel, walnut trees were either intentionally or accidentally planted, to the benefit of the Native Californian tribes nearest to them. Anderson discusses the likely probability that these trees were planted intentionally, supporting the narrative of Indigenous land management in California (Anderson 2005). The small walnuts from the tree were eaten regardless of the fruits' thick skin and hard shell, providing necessary nutrients and fat. The Chumash and other Native tribes played variations of a gambling game called "pi" using the walnut shells from the black walnut. The shells were filled with pine pitch and thrown upon a board, in a manner similar to the game of dice (Timbrook 2007). Timbrook also mentions that the Chumash occasionally used the bark of the black walnut in basketmaking (Timbrook 2007).

Clearly these trees were important in pre-contact California, but they have also played an important role in bolstering the state's economy in the past two centuries. The nut of the California black walnut is more difficult to crack open than the English variety, which explains

why the native Californian variety isn't cultivated for its fruits. Rather, it is commonly grown as a rootstock for grafted English walnut trees or simply in urban areas as a shade tree (Stuart & Sawyer 2001). A hybrid between Northern California black walnut and English walnut (*Juglans hindsii* x *Juglans regia*) called 'paradox' has proved to be a superior rootstock for the commercial production of English walnuts in California (Potter et al. 2018). Their role in providing habitat for native animals of California will undoubtedly be important in California cities efforts to mitigate ecosystem-wide damage caused by urban sprawl. I would argue that it does a disservice to Californian ecosystems and natural history to overlook this significant tree. This native plant has an important role to play in its ecosystems and within urban settings.

Danger of Invisibility

These trees are relevant in our discussion of plant blindness and re-naturalization because of their important role in California ecosystems, their cultural significance, and their role in the California economy. The danger of their invisibility arises when cities expand unhindered, decreasing the habitat and resources for vertebrates and invertebrates that depend on this species. Equally important is the erasure of cultural history that this species carries. The once reciprocal relationship between humans and *Juglans* has turned into an extractive one, where its value is largely based on its ability to keep a non-native walnut species alive for the benefit of our economy. Sustaining California's economy is important for the livelihood of all those who live within the state and for those who depend on its produce, however, the personal connection between human and tree is lost in seeing it as a commodity. Or rather, a supplement to the commodity.

Black walnuts still speckle the state, dropping crops of valuable nutrients every few years. One easy way to appreciate these trees is to eat them! They can be eaten when roasted,

adding them to salads, baked goods, and wherever you would use English walnuts. You can even make a warm, nutty liquor called ‘nocino’ by soaking the green husks in pure alcohol for a few months (Alamprese 2005). Make sure to plant a few for every handful you take, ensuring the species’ survival. Never take the first of any plant you see. This way, you will never take the last. This important principle of the Honorable Harvest is outlined beautifully by Robin Kimmerer in her book *Braiding Sweetgrass* (Kimmerer 2013). Another way to enter relationship with these incredible trees is to identify them as you drive along major highways throughout the state. Grab a botanical field guide and spot them along highways and near rivers all over California.

Blue Elderberry

Description

The blue elderberry (*Sambucus mexicana*) is a California native shrub that can reach heights of 25 feet. The inflorescences are wide, flat clusters of small cream to yellow-colored flowers. These flowers have a fresh, honey-like scent that gets sweeter the longer you smell. The fruit of the blue elderberry are black berries coated in a powdery-white yeast which gives the berries their distinguishing hue (Stuart & Sawyer 2001). Blue elderberry leaves are odd-pinnately compound, similar to black walnut only with fewer leaflets and of considerably smaller size. The leaflets are elliptical and finely serrate, numbering 3-9 on one leaf, and have leaf tips that are bowed downward (Stuart & Sawyer 2001). According to the search engine Botany, the genus *Sambucus* is named after an ancient Greek instrument called a Sambuca, possibly in tribute to elderberry woods’ value in Native instrument craft (“Dave’s Garden” n.d.). This species’ specific epithet ‘*mexicana*,’ indicates blue elderberry’s presence in Baja California, Mexico. *Sambucus nigra* ssp. *caerulea* is a synonym of *S. mexicana*, often used interchangeably

in botanical circles (Bell 2022). The specific epithet ‘*nigra*’ and the subspecies ‘*caerulea*’ means black and dark blue respectively, referring to the shrubs’ dark berries.

Blue elderberry can be found throughout California, except for the Mojave and Sonoran Deserts, as well as some parts of the Great Valley and Modoc Plateau. They are commonly found along moist and sunny stream banks and in openings within forests below 6,500 feet. In riparian woodlands, blue elderberry is considered a dominant understory species (Stevens & Nesom 2001). One of the primary factors impacting this species survival is competition from invasive weed species (Stevens & Nesom 2001). Over-grazing by cattle within oak woodland habitat is another important factor limiting the establishment of mature trees (Stevens & Nesom 2001). These established shrubs not only shade the creek and act as streambank stabilizers, but they also provide important habitat for native fauna of California.

Similar to the black walnut, blue elderberry provides habitat and sustenance for game birds, rodents such as squirrels, and browsers like mule deer, elk, and moose. Bears and birds alike depend on the elderberries as part of their diet (Stevens and Nesom 2001). Of birds specifically, songbirds like the western blue bird, common house finch, mockingbird, white-crowned sparrow, California thrasher, brown towhee, pheasant, Stellar’s jay, scrub jay, and many more all eat blue elderberries (Stevens & Nesom 2001). The blue elderberry is a host to many invertebrates, but the resident valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), or VELB for short, is arguably one of the most important as it is classified as endangered under the U.S. Endangered Species Act. Like many other endangered species in the United States, the VELB is threatened by habitat loss caused by agricultural development, construction projects, and maintenance activities (Beacham & Sessine 2001). Due to human activity, 70-90% riparian areas have been lost or are significantly altered, where fragmented

patches leave wildlife isolated (Stevens & Nesom 2001). These numbers are even higher in agricultural areas like the Sacramento Valley where damming, ground-water extraction, urbanization, and grazing have almost entirely changed the natural landscape (Steven 2001). Although contemporary blue elderberry distribution is nowhere near its historical range, elderberry trees are still hanging over street sidewalks and woodland hiking trails, along highways and disturbed roadsides up and down California.

History and Human Interaction

Prior to European contact, Native Californians utilized virtually every part of this incredible plant. The distinguishing cluster of blue berries for which the shrub gets its common name has been used in traditional medicine and as a food source and is still used medicinally to this day. The flowers of the blue elderberry tree, called elderflowers, were also traditionally used to treat colds and fevers, to induce sweating, and as an incense to treat wounds (Timbrook 2007). Researchers have found that elderberries contain compounds that reduce the risk of cardiovascular disease, diabetes, and the impacts of UV radiation; that they are effective in supporting immune and digestive systems functions; and that they function as antiviral, antibacterial, and antifungal (Sidor & Gramza-Michałowska 2015). The fruits and stems of the blue elderberry have two active alkaloids, hydrocyanic acid and sambucine, that are medicinal when ingested in low quantities, but are toxic in large quantities (Stevens & Nesom 2001). Berries should be cooked when eating them in large quantities to neutralize these toxins. The red berries of *Sambucus racemosa* are *not* edible and should be avoided.

Aside from the Blue Elderberry's fruit, Native Californians also use the wood and twigs from this tree for various purposes. To the Acjachemen Indians of San Juan Capistrano, the tree is known as the "tree of music," a beautiful allusion to the instruments they made with the trees'

hard wood (Walker, Nunez, Walkingstick, & Banack 2004). Stems of the elderberry tree are hollowed out to create flutes and clappersticks, a percussion instrument that is used to keep the tempo of a song (Walker et al. 2004). The Chumash also utilized elderberry wood for similar instruments used in courtship, dance, and for general enjoyment. (Timbrook 2007). Smoking pipes, dance wands, arrow shafts, bows, bullroarers, combs, spindles, pegs, and firesticks were also made from the wood of the elderberry (Timbrook 2007; Stevens & Nesom 2001). Bows of elderberry wood were of particular importance to coastal Natives who hunted sea otters in the ocean or on the Channel Islands because they were not spoiled by sea water (Timbrook 2007). Clearly the elderberry has played a crucial role in Californian history, and ought to be recognized for its role in California's future.

Danger of Invisibility

The blue elderberry is one of the many phenomenal plants in California's natural history, supplying effective medicine, weapons, material for fire, and instruments to Native Californians for thousands of years. It is important to consider the blue elderberry tree in our discussion of plant blindness and re-naturalization because of its history, but also because of its prevalence in modern California, its role as a human food source and medicine, and its ecological importance. The contemporary distribution of blue elderberry is still relatively widespread and can be easily recognized in natural spaces like hiking trails in preserves, national forests, and open spaces if one knows what to look for. Luckily, blue elderberry is easily identifiable and incredibly versatile, so when considering the possibility of reconnecting to this native shrub, the options seem limitless. The berries can be cooked and used in pies, jams, and syrups. They can be dried and added to other baked goods like muffins, cookies, or added to tea and spice blends. They can be infused or fermented to create alcohols like wine or brandy and elderberry vinegar. You can

treat the flowers in a similar way, creating syrups to treat illness or enhance a meal. Modern brewers are infusing both berries and flowers in homemade beer and cordials. You can even use the powdery white yeast on the outside of the elderberry to inoculate a new sourdough starter.

In learning about the blue elderberry, we also have an opportunity to discover herbal medicine. The medicinal properties of blue elderberry are well documented; you can find many supplements with polyphenols derived from elderberry that support immune health. The aforementioned health-promoting properties of blue elderberry and the relative accessibility of the fruit provides a pathway towards deeper connection with the biotic realm. Learning to ethically collect and process elderberries and elderflowers to create medicine for immune support can encourage a deeper respect for the life that the tree sustains honor the trees gifts. While herbal medicine can provide life-giving support to those is need, we should not sacrifice crucial medicine or vaccines provided by western science. In learning to support ourselves using the materials found around us, we simultaneously support the survivance of the native plants that support us when following the guidelines that Native land stewards provide for us.

Amidst our discussion of the positive ways to interact with the blue elderberry, the dangers of invisibility are distinct. The story of the VELB is a valuable illustration of the effects of habitat fragmentation in a uniquely biodiverse state. According to the California Department of Fish and Wildlife (CDFW), 31% of California plants and 65% of California vertebrates are endemic to the state (CDFW 2022a). The VELB is only one species of hundreds that are threatened by habitat loss (CDFW 2022b). If urban expansion continues at the same rate it has for the past two centuries, more endemic species will become endangered as their native range diminishes. Disregard for plants and ecosystems that harbor endemic and/or threatened species may continue to cause habitat damage. Through learning about the blue elderberry, its medicinal

properties, its accessibility, and its unique ecological role, we can encourage more people to engage with the shrub in a manner beneficial for both plant and human.

California Bay Laurel

Description

You can smell it before you see it; the California bay laurel (*Umbellularia californica*) is a gem amidst the mixed-hardwood forests it inhabits. The leaves of this native laurel have a unique peppery smell reminiscent of its European counterpart, only more potent. California bay is an erect, single or multi-stemmed tree, though it takes the form of a shrub when situated on serpentine soils. They can reach heights of 80 feet, though mature plants are typically 30 feet tall (Stuart & Sawyer 2001). Like many evergreen leaves, bay leaves are thick, leathery, and dark green. They are elliptical to lanceolate and can be 2-6 inches long. The leaf of the California bay laurel has flat edges, whereas the edges of the European bay laurel leaf are undulate. Groups of four to ten yellowish flowers cluster to form flat-topped inflorescences. The fruits of the California bay laurel, called bay nuts, are drupes that strongly resemble small avocados. Their fleshy olive-like husk encloses a hard oval nutlet about the size of a pistachio (Stuart & Sawyer 2001). California bay trees can be found throughout California, from exposed ridges to valley bottoms in areas below 5,200 feet (Stuart & Sawyer 2001). These trees are not found in the Modoc plateau or the Mojave and Sonoran deserts. The California bay's genus, *Umbellularia*, is a Latin term that means 'small umbel', referring to the trees' umbel-shaped inflorescences. The specific epithet, *californica*, indicates that this tree is of California. Sir Joseph Hooker and George Walker-Arnott first classified the California Bay as *Oreodaphne californica*, which

roughly translates to ‘the laurel of California mountains’ (“Dave’s Garden” n.d.). Thomas Nuttall, an English naturalist and botanist, later reclassified the California bay laurel, creating an entirely new genus (*Umbellularia*) for this unique species. This species is the only one within the genus *Umbellularia*, however it is related to the European laurel, *Laurus nobilis*, as they are both in the family *Lauraceae*.

The California bay tree grows within mixed hardwood forests in California woodlands and in riparian areas, often as a dominant species, but occasionally as an understory species. They can also be found in canyon woodlands and in some redwood forests. It is often associated with red alder, bigleaf maples, boxelder, California buckeye, California sycamore, woodland oak species, manzanitas, and Pacific dogwood (Howard 1992). The tree itself provides valuable cover for deer, wild pigs, black bears, and other small mammals, and often small birds and songbirds will nest in the tree or use it to protect themselves from the elements (Howard 1992). California laurel leaves, twigs and new shoots are preferred by black-tailed deer and other livestock. Bay nuts are eaten by rodents, bird, and wild pigs (Howard 1992). Where bay laurel grows in riparian habitats, its roots provide stream-banks stability and helps to control flooding events (Howard 1992). The California bay tree plays an important role in ecosystems state-wide and has also provided for the human populations that have lived here for thousands of years.

History and Human Intervention

Like the other plants, the California bay laurel has a fascinating ethnobotanical history. Native people utilized the trees’ wood, leaves, fruit, and seed for medicinal, culinary, spiritual, and functional purposes. Native groups such as the Chumash created fine bowls out of bay wood burls and Chumash hunters burned dried bay leaves as a form of incense. They stood in the smoke before going out for a hunt because they believed deer were attracted to this smell, but

would also make them dizzy, making them easier prey (Timbrook 2007). Native Californians have used the bay leaf in many forms as a headache treatment (Stuart & Sawyer 2001). The Chumash place bay leaves around the head or made a tea from the leaves to treat colds. Those with rheumatism took bathes with bay leaves in them as this was an accepted remedy (Timbrook 2007). The leaves of the bay tree were also scattered around the floor of houses or around food stores to protect against insect pests (Timbrook 2007). Bay leaves were also thought to repel witches (Timbrook 2007). Interestingly, though many Native Californian tribes used this tree as a headache cure, it is also widely known that the essential oils within bay leaves can cause headaches (Benemei & Geppetti 2010; Timbrook 2007). Despite this strange phenomenon, bay leaves continue to be used in contemporary cooking just as they have been used for millennia. Europeans used California bay leaves as a substitute for their native bay leaf, though it is considerably more potent than the European variety. The seeds of the bay fruit are also edible and can be roasted to a dark brown color. These seeds take on the flavor of both chocolate and coffee when roasted, some even ascribing a cinnamon quality. Natives would ground these nuts to create a paste or flour that can be added to acorn mush or other foods (Timbrook 2007). Contemporarily, roasted bay ‘nuts’ (called nuts for their nut-like resemblance and aroma) are used as a coffee substitute or a chocolate substitute which can be used in chocolate-based dishes like moles or cocoa.

Danger of Invisibility

Though the average person may not be aware of the history of the California bay laurel, luckily, scientists have their eyes on it. This is because the California bay laurel is a foliar host of *Phytophthora ramorum*, the fungus-like water mold responsible for Sudden Oak Death. This means that the California bay laurel can be infected by this pathogen, but it rarely dies from it,

creating an optimal environment for the spores to spread. This pathogenic mold poses a threat to coastal California woodland ecosystems as it mostly kills the coast live oak tree (*Quercus agrifolia*), which is a keystone species in this habitat (Daugherty & Hung 2022). This means that sudden oak death has the potential to destroy entire ecological regions that depend on the coast live oak for the services it provides. The increased visibility of the California bay laurel and its associated mold encourages protection and remediation efforts for affected species. Because of the increased awareness of the issue, there are researchers employing treatment in affected areas, using the associated data to inform future management of this pathogen (Valachovic, Twieg, B., Lee, C., Cobb, R., & Stark, D. 2017). Disregard of any plant with rich ethnobotanical history poses a threat to the species' survival, therefore threatening the stories it holds as well as the potential for its future abundance. Conversely, we can also see how bay laurel's visibility promotes the health of not only this one species, but an entire ecosystem.

ENVISIONING SUSTAINABLE FUTURES

Now that we see how humans can be both dangerous *and* valuable in our interaction with the natural environment, it is critical to discuss the potential for future interaction that has been mentioned in this work. A non-exhaustive list of methods (foraging, observation, educational interaction) have been mentioned throughout this essay. One method for reconnection which requires careful and critical explanation is foraging. Just like anything else, there are harmful techniques to foraging, and there are honorable techniques to foraging. As mentioned earlier in the paper, Robin Wall Kimmerer lays out explicit guidelines of how to interact with the environment in respectful and meaningful ways. Humans have always depended on other plant and animal life for our own survival. Kimmerer explains the ethical dilemma of taking the life of a living being to support the life of another as an “inescapable tension” of being human

(Kimmerer 2013). However, she presents simple and easy actions that one can take to ensure the survival of the species from which you are taking. For example, one should never take the first of a plant they encounter. In this way, you will never take the last. One should never take more than half of the plant or its fruits so that it may rebuild itself after it's been harvested from. In order to minimize harm to the plant, never pull, rip, or tear the plant; use shears or a shovel. Never waste what you have taken. In this way, you respect the plant rather than take advantage of it. Give something back to the plant in return for its gifts; pull invasive weeds around it, prune dead leaves, give thanks for what you have been given (Kimmerer 2013). Depending on what region you live in, the Indigenous population of the area will have different methods of reciprocity. Always respect their traditions and ask permission whenever possible. Research or ask about their foraging practices; they likely will have guidelines or even prohibitions of foraging certain culturally important plants. Often times, the healthy condition of the plants in an area is directly related to Indigenous land-care practices. It is our duty to honor and respect these centuries-old relationships.

Preserving species for their own good benefits entire ecological communities. Plenty of research indicates how protecting native biodiversity is critical for sustained quality of life. We owe our oxygen, our clean rivers and oceans, all of our food, our freshwater supply, raw materials, cultural practices and countless more ecosystem services to the healthy diversity of our planet (Cardinale, Primack, & Murdoch 2020). While sustaining ecosystems services is important for human quality of life, plants and animals have innate rights that ought to be protected for their own benefit, as they have a right to survival as much as humans do. This concept is present throughout Kimmerer's book, and she enhances this argument by explaining the importance of human's spiritual connection to the natural world. She argues that humans

have historically been unified with their natural environment, physically and spiritually. Western society has experienced a spiritual separation that is partially to blame for the damage we impart on our planet. The re-naturalization process that we have been discussing in this paper is central to Kimmerer's main argument of reconnection (Kimmerer 2013). We have the power to change our relationship to the natural world, often we just do not know where to start. With the tools and teaching of Traditional Ecological Knowledge married with western science, there emerges a path towards reconnection, and it starts with plant visibility.

SUMMARY AND CONCLUSION

Summary

Humans are inseparable from the natural environment. We are one and the same, interconnected within the ecology of *creation* and *care*, not only destruction. Part of the role colonization plays is a narrative of erasure; erasure of the role of the original caretakers and land-stewards, as well as the stories that weave humanity into nature. We all benefit from the life-giving oxygen generated by our planets' photosynthesizers, from the sun's rays made milder by Earth's layer of stratospheric ozone, from the fresh water that cycles through bedrock, soil, sand, and air. All these gifts are threatened by *Homo sapiens* own negligence of our caretakers, our lifeline. Somewhere along the timeline of human history, we began to view ourselves as above and beyond the natural environment. Some of most salient aspects of anthropogenic climate change today (fossil fuel extraction, mining, habitat destruction, soil degradation) is rooted in this strong disconnection to the natural environment. The common unfamiliarity of native plants and plants in general leads to a disregard for the importance of protecting them. The reconnection between *Homo sapiens* and our natural environment is *essential* for our endurance on this Planet Earth.

By grounding ourselves in Indigenous wisdom and the principles of Traditional Ecological Knowledge, we are more able to recognize the important relational facets between humans and the three native Californian plants described above. In introducing Kimmerer's concept of re-naturalization of *humans*, we can draw a connection to the same process a naturalized plant undergoes; immigration from a foreign place, dependence on the surrounding resources, and settlement of an area without disrupting other species (Kimmerer 2013). Following, descriptions of three biologically culturally, and spiritually important plants are introduced to raise awareness of their historical connection with humans, their potential future relationship with humans, and the danger of their invisibility. California black walnut showed us the importance of protecting a plant for its habitat-creating properties as well as its potential for interaction (i.e., culinary use) beyond its current role as a root stock species for its English counterpart. California blue elderberry showed us the incredible range of historical and potential future uses as medicine. California bay laurel showed us the positive outcomes of close human observation of harmful pathogens and the prospective management practices (i.e., oak woodland monitoring) which resulted from this diligent observation. By delving into specifics of each native plant, we can more readily envision a future where the lessons of these plants inform human action. As we learn more about the plants that surround us, we therefore become more connected to our environment, taking steps towards humans re-naturalization and a culture of respect and reciprocity.

Conclusion

One would hope it is obvious that the act of reconnecting to our natural environment cannot possibly solve all the problems we impart on our ecosystems today. There are complex, nuanced systems that millions of people depend on (i.e., industrial agriculture, transportation

networks, the pharmaceutical industry) that generate both harm *and* immense benefit to quality of life. It is not the goal of this paper to negate these systems importance or claim that reconnection to the natural environment will take place of or solve the injustices of these systems. Similarly, there are systems of structural oppression (racism, classism, sexism) that prevent certain groups (people of color, low-income individuals, women) from reconnecting to the plants around us. These structures restrict people from accessing natural spaces by inciting fear or impeding travel (Cronin-de-Chavez, Islam, & McEachan 2019). Restructuring the vast inequalities and environmental injustices of our society is a multidimensional problem that cannot simply be resolved by encouraging people to get outdoors. The noticing of plants must also accompany advocacy for access to outdoor spaces, funding for transportation, voting for climate-minded policies, committing to safety measures in open spaces, creating support systems to reduce fear in open spaces, and deconstructing systems of violence (Cronin-de-Chavez et al. 2019). Increasing visibility of plants is just as important as advocating for those who cannot readily access outdoor spaces. The aim of this paper is to empower and energize those who seek a more connected world where every life is valued equally, human or otherwise. These are just a few of many action steps one can pursue in accordance with this goal: educate yourself about the native plants and Indigenous people of your area; volunteer for groups that aim to rehabilitate native plant environments; advocate for groups that aim to increase accessibility to natural spaces for low-income groups and people of color; celebrate Earth's abundance by creating your own garden and encourage friends, family, or neighbors to lend a hand; attend events put on by your local government. There are a plethora of ways to fall in reverent love with the natural world enough to want to fight to protect it; it is up to us to choose what we do with that reverence.

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